Weston Solutions, Inc.
East Division
3 Riverside Drive
Andover, Massachusetts 01810
(978) 552-2100 - Fax (978) 689-2794

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT EP-W-05-042

8 January 2014
20114-091-998-0912-49
DC No. R-7562

Mr. Ted Bazenas
U.S. EPA Region I - New England
Emergency Planning & Response Branch
5 Post Office Square, Suite 100
Mail Code OSRR02-2
Boston, Massachusetts 02109-3912

Subject: Case No. 0855F; SDG No. D31835
ConTest Laboratory Inc., East Longmeadow MA (CONTEST)
Turkey Brook Site, Oakville, Connecticut
Stage_2A_Validation_Manual (S2AVM)

TPH: 20/Soil/D31835-D31854

CERCLIS No.: None
TDD No. 13-09-0009, Task No. 0912-49

Dear Mr. Bazenas:

A Tier 1 validation was performed on the organic analytical data for 20 soil samples collected by WESTON START at the Turkey Brook Site in Oakville, Connecticut. The samples were analyzed under SW-846 by modified method 8015 for petroleum hydrocarbons. Sample analyses were procured by START in accordance with the DAS program. The data were evaluated at a Tier 1 level in accordance with the "EPA New England Environmental Data Review Program Guidance" dated April 22, 2013, and the "USEPA CLP National Functional Guidelines for Superfund Organic Methods" dated June 2008, and were based on the following parameters:

* • Data Completeness.
* • Preservation and Technical Holding Times.
* • Blanks.
* • DMCs and Surrogate Compounds.
* • MS/MSD.
* • LCS Results.
* • Target Compound Identification.
* • Compound Quantitation and Reported Quantitation Limits.

* = No qualifications were applied based on this parameter.

Stage 2A Electronic Data Review Reports could not be used for this SDG.

Overall Evaluation of Data and Potential Usability Issues

The following is a summary of the site investigation/assessment objectives.

- Collect additional samples to characterize the horizontal and vertical extents of contamination, determine if any additional source areas of contamination exist, and determine if additional actions will be required at the site.

Data Validation did not indicate any data quality problems.

See the attached worksheets for details. The results reported on the Data Summary Table are usable for the site objectives.

The following quality control parameters were evaluated manually for this project.

Holding Times - No qualifications were applied.

Sample Temperature - No qualifications were applied.

Reporting Limits - No qualifications were applied.

LCS/LCSD - No qualifications were applied.

MS/MSD - No qualifications were applied.

Method Blanks - No qualifications were applied.

Surrogates - No qualifications were applied.

Please contact the undersigned at (978) 552-2100 if you have any questions or need further information.

Very truly yours,

WESTON SOLUTIONS, INC.
Region I START

Bill Mahany
Senior Project Scientist

John Burton
Lead Chemist

cc: Vicki Maynard (EPA New England Data Review Chemist) - DV Letter and Data Tables
START File Copy

Attachments:
Acronym List
Data Summary Table 1
DV Worksheets
Field Sampling Notes
Copy of sampler's COC Records
CSF Audit - Evidence Audit Photocopy (Including CSF Receipt/Transfer Form)
DQO Summary Form

R:\13090009\Analytical\Results\D31835_orgval.doc

ACRONYM LIST
ORGANIC DATA VALIDATION

AQ	aqueous
AQ FB	aqueous field blank
BB	Bottle Blank
B/N	base/neutral compound
°C	degrees Celsius
CC	Continuing Calibration
CCV	Continuing Calibration Verification
CLP	Contract Laboratory Program
COC	Chain-of-Custody record
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
%D	percent difference
DAS	Delivery of Analytical Services
DMC	Deuterated Monitoring Compound
DQO	Data Quality Objective
DV	Data Validation
DW	drinking water
EB	Equipment Blank
EPA	Environmental Protection Agency
GC/ECD	Gas Chromatograph/Electron Capture Detector
GC/MS	Gas Chromatograph/Mass Spectrometry
GW	groundwater
IC	Initial Calibration
IS	Internal Standard
kg	kilogram
L	liter
LCS	Laboratory Control Sample
LFB	Laboratory Fortified Blank
MDL	Method Detection Limit
µg	microgram
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	non-detected result
ng	nanogram
OSC	On-Scene Coordinator
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl compound
PEST/PCB	pesticide/polychlorinated biphenyl compound
PE	Performance Evaluation
Pos	positive result
QC	Quality Control
%R	percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SOW	Statement of Work
SQL	Sample Quantitation Limit
S/S	soil/sediment
S/S (m)	soil/sediment medium level
START	Superfund Technical Assessment and Response Team
SVOC	semivolatile organic compound
SW	surface water
TB	Trip Blank
TCL	Target Compound List
TDD	Technical Direction Document
TIC	Tentatively Identified Compound
TR	Traffic Report
VOC	volatile organic compound
WESTON	Weston Solutions, Inc.

SITE: TURKEY BROOK SITE
CASE: 0855F SDG: D31835
LABORATORY: ConTest Analytical Laboratory

DATA SUMMARY TABLE 1
TOTAL PETROLEUM HYDROCARBON (TPH) SOIL ANALYSIS
mg/Kg

	SAMPLE NUMBER	D31835	D31836	D31837	D31838	D31839	D31840
	SAMPLE LOCATION	SBC-07	SBC-09	SBC-10	SBC-08	SBC-06	SBC-02
	STATION LOCATION	13090009-0002	13090009-0003	13090009-0004	13090009-0005	13090009-0006	13090009-0007
	LABORATORY NUMBER	13K1055-01	13K1055-02	13K1055-03	13K1055-04	13K1055-05	13K1055-06
COMPOUND	RL						
TPH c9-c36	8.3	53	21000	15000	17000	11000	410
	DILUTION FACTOR	1.0	200.0	100.0	100.0	200.0	10.0
	DATE SAMPLED	11/22/2013	11/22/2013	11/22/2013	11/22/2013	11/21/2013	11/20/2013
	DATE EXTRACTED	11/30/2013	11/30/2013	11/30/2013	11/30/2013	11/30/2013	11/30/2013
	DATE ANALYZED	12/2/2013	12/5/2013	12/5/2013	12/5/2013	12/5/2013	12/5/2013
	SAMPLE WEIGHT (GRAMS)	30.1	30.1	30.0	30.0	30.1	30.0
	% SOLID	79.3	82.8	91.9	86.6	92.6	90.7

S2AVM DATA VALIDATION
QUALIFIER COMMENTS: J - Values detected above the sample adjusted MDL and below the RL are reported with a "J" flag.
U - Values not detected above the MDL are reported at the sample adjusted RL with a "U" flag.

NOTES:
Results are reported in milligrams per Kilogram (mg/Kg).
RL = Reporting Limit
All results are reported on a Dry Weight Basis.

SITE: TURKEY BROOK SITE
CASE: 0855F SDG: D31835
LABORATORY: ConTest Analytical Laboratory

DATA SUMMARY TABLE 1
TOTAL PETROLEUM HYDROCARBON (TPH) SOIL ANALYSIS
mg/Kg

	SAMPLE NUMBER	D31841	D31842	D31843	D31844	D31845	D31846
	SAMPLE LOCATION	SB-07	SB-06	SB-04	SB-03	SB-02	SB-01
	STATION LOCATION	13090009-0008	13090009-0009	13090009-0010	13090009-0011	13090009-0012	13090009-0013
	LABORATORY NUMBER	13K1055-07	13K1055-08	13K1055-09	13K1055-10	13K1055-11	13K1055-12
COMPOUND	RL						
TPH c9-c36	8.3	8.6 U	9.2 U	170	8.7 U	190	300
	DILUTION FACTOR	1.0	1.0	10.0	1.0	10.0	1.0
	DATE SAMPLED	11/21/2013	11/21/2013	11/20/2013	11/20/2013	11/20/2013	11/20/2013
	DATE EXTRACTED	11/30/2013	11/30/2013	11/30/2013	11/30/2013	11/30/2013	11/30/2013
	DATE ANALYZED	12/4/2013	12/2/2013	12/5/2013	12/5/2013	12/5/2013	12/5/2013
	SAMPLE WEIGHT (GRAMS)	30.2	30.2	30.0	30.1	30.0	30.0
	% SOLID	96.4	89.5	94.7	95.0	82.6	78.4

S2AVM DATA VALIDATION
QUALIFIER COMMENTS: J - Values detected above the sample adjusted MDL and below the RL are reported with a "J" flag.
U - Values not detected above the MDL are reported at the sample adjusted RL with a "U" flag.

NOTES:
Results are reported in milligrams per Kilogram (mg/Kg).
RL = Reporting Limit
All results are reported on a Dry Weight Basis.

SITE: TURKEY BROOK SITE
CASE: 0855F SDG: D31835
LABORATORY: ConTest Analytical Laboratory

DATA SUMMARY TABLE 1
TOTAL PETROLEUM HYDROCARBON (TPH) SOIL ANALYSIS
mg/Kg

	SAMPLE NUMBER	D31847	D31848	D31849	D31850	D31851	D31852
	SAMPLE LOCATION	SB-104	SB-08	SB-09	SB-10	SBC-03	SBC-04
	STATION LOCATION	13090009-0014	13090009-0015	13090009-0016	13090009-0017	13090009-0018	13090009-0019
	LABORATORY NUMBER	13K1055-13	13K1055-14	13K1055-15	13K1055-16	13K1055-17	13K1055-18
COMPOUND	RL						
TPH c9-c36	8.3	180	9.1 U	12000	14000	7700	2400
	DILUTION FACTOR	1.0	1.0	200.0	200.0	50.0	50.0
	DATE SAMPLED	11/20/2013	11/21/2013	11/21/2013	11/21/2013	11/21/2013	11/21/2013
	DATE EXTRACTED	11/30/2013	11/30/2013	11/30/2013	11/30/2013	11/30/2013	11/30/2013
	DATE ANALYZED	12/5/2013	12/4/2013	12/5/2013	12/5/2013	12/5/2013	12/5/2013
	SAMPLE WEIGHT (GRAMS)	30.0	30.0	30.0	30.1	30.1	30.1
	% SOLID	93.5	91.2	90.0	95.6	85.6	78.2

S2AVM DATA VALIDATION
QUALIFIER COMMENTS: J - Values detected above the sample adjusted MDL and below the RL are reported with a "J" flag.
U - Values not detected above the MDL are reported at the sample adjusted RL with a "U" flag.

NOTES:
Results are reported in milligrams per Kilogram (mg/Kg).
RL = Reporting Limit
All results are reported on a Dry Weight Basis.

SITE: TURKEY BROOK SITE
CASE: 0855F SDG: D31835
LABORATORY: ConTest Analytical Laboratory

DATA SUMMARY TABLE 1
TOTAL PETROLEUM HYDROCARBON (TPH) SOIL ANALYSIS
mg/Kg

	SAMPLE NUMBER	D31853	D31854				
	SAMPLE LOCATION	SBC-05	SB-05				
	STATION LOCATION	13090009-0020	13090009-0021				
	LABORATORY NUMBER	13K1055-19	13K1055-20				
COMPOUND	RL						
TPH c9-c36	8.3	210	9.5 U				
	DILUTION FACTOR	1.0	1.0				
	DATE SAMPLED	11/21/2013	11/21/2013				
	DATE EXTRACTED	11/30/2013	11/30/2013				
	DATE ANALYZED	12/5/2013	12/3/2013				
	SAMPLE WEIGHT (GRAMS)	30.0	30.2				
	% SOLID	88.2	87.4				

S2AVM DATA VALIDATION
QUALIFIER COMMENTS: J - Values detected above the sample adjusted MDL and below the RL are reported with a "J" flag.
U - Values not detected above the MDL are reported at the sample adjusted RL with a "U" flag.

NOTES:
Results are reported in milligrams per Kilogram (mg/Kg).
RL = Reporting Limit
All results are reported on a Dry Weight Basis.

EPA-NE - Data Validation Worksheet

Case: 0855F SDG: D31835

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: TPH (c9-c36)

Missing Information	Date Lab Contacted	Date Received
~~None~~ Calibration	12/20/13 ~~12/20/13~~	12/24/13

Validator: [signature] Date: ~~12/19/13~~ 12/26/13

EPA-NE - Data Validation Worksheet
VOA/SV - **Pest/ARO** - 2

Sampler: Mavris Company: WESTON Contacted: Yes **No** Date: _____

1. PRESERVATION AND HOLDING TIMES

Cooler Temp: 2.9°C Documented: Page: 52

Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	TPH											
				Date Extracted	# of Days from Samp. to Ext.	*Ext. Code	Date Analyzed	# of Days from Ext. to Anal.	Action	Date Extracted	# of Days from Samp. to Ext.	*Ext. Code	Date Analyzed	# of Days from Ext. to Anal.	Action
D31835	S/S	1	11/22/2013	11/30/2013	8	3546	12/2/2013	2	A/A						
D31836	S/S	1	11/22/2013	11/30/2013	8	3546	12/5/2013	5	A/A						
D31837	S/S	1	11/22/2013	11/30/2013	8	3546	12/5/2013	5	A/A						
D31838	S/S	1	11/22/2013	11/30/2013	8	3546	12/5/2013	5	A/A						
D31839	S/S	1	11/21/2013	11/30/2013	9	3546	12/5/2013	5	A/A						
D31840	S/S	1	11/20/2013	11/30/2013	10	3546	12/5/2013	5	A/A						
D31841	S/S	1	11/21/2013	11/30/2013	9	3546	12/4/2013	4	A/A						
D31842	S/S	1	11/21/2013	11/30/2013	9	3546	12/2/2013	2	A/A						
D31843	S/S	1	11/20/2013	11/30/2013	10	3546	12/5/2013	5	A/A						
D31844	S/S	1	11/20/2013	11/30/2013	10	3546	12/5/2013	5	A/A						
D31845	S/S	1	11/20/2013	11/30/2013	10	3546	12/5/2013	5	A/A						
D31846	S/S	1	11/20/2013	11/30/2013	10	3546	12/5/2013	5	A/A						
D31847	S/S	1	11/20/2013	11/30/2013	10	3546	12/5/2013	5	A/A						
D31848	S/S	1	11/21/2013	11/30/2013	9	3546	12/4/2013	4	A/A						
D31849	S/S	1	11/21/2013	11/30/2013	9	3546	12/5/2013	5	A/A						
D31850	S/S	1	11/21/2013	11/30/2013	9	3546	12/5/2013	5	A/A						
D31851	S/S	1	11/21/2013	11/30/2013	9	3546	12/5/2013	5	A/A						
D31852	S/S	1	11/21/2013	11/30/2013	9	3546	12/5/2013	5	A/A						
D31853	S/S	1	11/21/2013	11/30/2013	9	3546	12/5/2013	5	A/A						
D31854	S/S	1	11/21/2013	11/30/2013	9	3546	12/3/2013	3	A/A						

Preservation Code:
1. Cool @ 4°C (± 2°C)
2. Preserve with HCl to ≤ pH 2.
3. Protect from light.
4. Freeze.
5. Room temperature (avoid excessive heat).
6. Encore sampler (48 hour hold time).

***Extraction Code:**
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) detected values.
UJ - Estimate (UJ) non-detected values.
R - Reject (R) non-detected values.

Matrix Codes:
AQ - Aqueous
S/S - Soil/Sediment
AQ FB - Aqueous Field Blank

Validator: _____ Date: 12/20/13

EPA-NE - Data Validation Worksheet
VOA/SV - Pest/ARO - V- A

Concentration Level: Low or Medium

V. BLANK ANALYSIS - list the blank contamination found in the laboratory blanks.

Sampler: Mavris Company: WESTON Contacted: Yes **No** Date: _____

1. Laboratory: Method, Storage, and Instrument Blanks

Date Extracted	Date Analyzed	VOC, SVOC, or P/PCB	Matrix	Sample No.	Blank Type	Instrument or Column	Compound	Conc. (units)
11/30/2013	12/2/2013	TPH	Soil	B086113	Method		None Detect	

Validator: J Mentes Date: 12/10/13

PEST/ARO Method Blanks: If %D is >100% (PEST) or >500% (ARO) , then not a positive hit and therefore not a contaminant.
PEST Instrument Blanks: If not present on both columns, then not a positive and therefore not a contaminant.
Do not use blanks used to clean the instrument after a contaminated sample to set Action Levels.

EPA-NE - Data Validation Worksheet
VOA/SV-Pest/PCB -VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria.

Use a separate worksheet for each MS/MSD pair.

Sample No: D31842 **Matrix:** Soil **Concentration Level:** L/M **Dilution Factor:** 1

Parameter	Compound	MS %R	MSD %R	RPD	Method QC Limits %R	Method QC Limits RPD	Concentration Unspiked	Concentration MS	Concentration MSD	%RSD	Action
TPH	Diesel #2	60.9	50	16.5	40-140	0-50					None

Actions apply only to the unspiked sample.

Qualification of Data:
MS/MSD compound present in unspiked sample at >4x spike concentration; accept data unqualified.
If MS/MSD data can not be reported due to sample dilution; then validator should note this in validation memo. Qualification of the data is not required.

Spiked Compounds

Sample Results	%R < 10%	10% ≤ %R < Lower QC Limit	Lower QC Limit ≤ %R ≤ Upper QC Limit	%R > Upper QC Limit	RPD > QC Limit
Detects	J	J	A	J	J
Non-detects	R	UJ	A	A	UJ

Unspiked Compounds

Sample Results	%RSD ≤ 50%	%RSD > 50%
Detects	A	J
Non-detects	A	UJ

Validator: [signature]

Date: 12/20/13

EPA - NE - Data Validation Worksheet
TPH - X

X. LABORATORY CONTROL SAMPLE (LCS) - List all LCS analytes that are outside the method QC acceptance criteria.

Matrix	Compound	LCS %R	Method QC Limits	Samples Affected	Action
Soil	Diesel #2	67.9	40-140		None
Soil	c9-c36	67.9	40-140		None

Qualification of Data:
1. Estimate (J, UJ) all positive and non-detects if the LCS %R is < the QC acceptance criteria.
2. Estimate (J) all positive results if the LCS %R is > the QC acceptance criteria.
3. Reject (R) all non-detected results and estimate (J) all positive results if the LCS %R is < 10%.

Sample Results	%R < 10%	10% ≤ %R < Lower QC Limit	Lower QC Limit ≤ %R ≤ Upper QC Limit	%R > Upper QC Limit
Detects	J	J	A	J
Non-detects	R	UJ	A	A

Validator: [signature]

Date: 12/20/13

EPA-NE - Data Validation Worksheet

Case: 0855F SDG: D31835

~~Pest/PCB XIII~~ TPH

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? Y N

If no, list sample numbers

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
~~Pesticides~~ TPH C9-C36		2172050/4.536x10³ = 478.857
Sample No.:	D31843	(478.8 ug/ml x 1 ml) x10 / (30g x .947) = 168.5 ug/g = 170mg/Kg
Reported Compound:	TPH	
Reported Value:	170 mg/Kg	
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: [signature] Date: 12/26/13

G. Mavris measured the oil thickness in three of the monitoring wells. The southern-most 4-inch monitoring well had a product thickness of 0.04 feet, the other 4-inch well 0.99 feet, and the 2-inch monitoring well outside the backdoor near the northwestern section of the building had a thickness of 4.26 feet. Headspace readings of 10 ppm were recorded with a MultiRAE at both of the 4-inch monitoring wells, and a readings of 3 ppm was recorded in the 2-inch monitoring well. ERRS Response Manager, John Kiley stated that he had generated four additional 55-gallon drums containing used oil absorbent booms.

G. Mavris pre-marked the property in front of Rintec for CBUD. Site activities were completed and all personnel departed the site. G. Mavris contacted CBUD the following day.

Sampling Activities

20 November 2013 (Wednesday)

Weather: Sunny, cold, breezy, 25°F

START members Mr. George Mavris, Mr. Colin Cardin, Mr. Eric Ackerman, and Mr. Ken Robinson arrived at the Turkey Brook site, located at 20 McLellan Drive, Oakville, Connecticut to conduct field activities. Field activities included advancing subsurface borings, collecting soil samples, characterizing soil sample cores, collecting a product/oil sample from one of the monitoring wells, and measuring product thickness in on-site monitoring wells. EPA On-Scene Coordinator (OSC) Mia Pasquerella arrived on site.

START personnel calibrated air monitoring instruments, including a two MultiRAE Plus units having CO, H_2S, VOC, O_2, and LEL sensors. Ambient background levels recorded were as follows: CO = 0 ppm , H_2S = 0 ppm, VOCs = 0.0 ppm, O_2 = 20.9 percent (%), and LEL = 0 %.

OEME personnel Mr. Gerry Keefe and Mr. Dan Granz arrived on site with a Geoprobe unit. START member Mavris conducted a tailgate health and safety meeting and discussed site history and details of the HASP, including chemical, physical, and biological hazards associated with the site, and directions to the nearest hospital. Site personnel reviewed and signed the Site-Specific HASP and tailgate attendance sheet.

START established a decontamination area and soil classification/sampling area along the western section of the parking lot and decontaminated the sampling equipment (hand held augers, stainless steel bowls, and scoops). OEME personnel began advancing borings outside of the QAI building while the START team began advancing borings inside of the building in the back room, located north of the machine shop. The outside borings would be advanced to 12 feet below ground surface (bgs) if possible and the inside borings would be advanced to four feet below the soil material directly beneath the concrete floor.

Four borings were advanced by the OEME crew (SB-01, SB-02, SB-03, and SB-04) using a Geoprobe. Borings SB-01 and SB-02 were advanced along the eastern side of the QAI building and adjacent to the storage room and SB-03 and SB-04 were advanced along the northern side of the QAI building near the release area of the storage room (see Figure X).

START personnel examined the floor of the storage room inside of the QAI building for subsurface utilities and spoke with one of workers regarding the storm drain running beneath the building. The proposed coring locations were then marked. A coring machine was used to drill through the concrete floor and the START crew advanced one boring (SBC-02) inside of the QAI building in the back room using a pneumatic hammer (see Figure Y). The concrete floor was approximately 4 inches thick. START used the coring machine to drill through the concrete floor in five additional locations.

The OEME and START drilling crews delivered the macrocores to the START soil classifier who screened the tops and bottoms of the macrocore liners with a MultiRAE, cut the macrocore sleeves and screened the entire length of the macrocore with a MultiRAE, collected soil samples, and characterized the soil. Field data sheets were prepared and boring logs were prepared (see Appendix X, Boring Logs). Five soil samples were collected for Oil ID analysis. START photo-documented site activities (see Appendix X, Photo-documentation Log).

The exterior boreholes were filled with their respective cuttings and bentonite, then topped off with sand. Geoprobe, coring, and sampling equipment was decontaminated; and the decontamination and soil classification areas were disassembled. Field activities were completed for the day all personnel departed the site. The soil samples collected were placed on ice and secured in a sample cooler overnight.

<u>21 November 2013 (Thursday)</u>

Weather: Sunny, cold, breezy, 20°F

START members Mr. Mavris, Mr. Cardin, Mr. Ackerman, and Mr. Robinson arrived at the Turkey Brook site to continue with field activities initiated on 20 November 2013. EPA On-Scene Coordinator Mia Pasquerella arrived on site. START personnel calibrated the two MultiRAE Plus instruments. Ambient background levels recorded were as follows: CO = 0 parts per million (ppm), H_2S = 0 ppm, VOCs = 0.0 ppm, O_2 = 20.9 percent (%), and LEL = 0 %.

OEME personnel Mr. Keefe and Mr. Granz arrived on site with Geoprobe unit. START member Mavris conducted a tailgate health and safety meeting and discussed chemical, physical, and biological hazards associated with the site, and proposed scope of work activities. Site personnel signed the tailgate attendance sheet.

START established the decontamination area and soil classification/sampling area along the western section of the parking lot and decontaminated the sampling equipment (hand held augers, stainless steel bowls, and scoops). The OEME personnel began continued advancing exterior soil borings while the START team continue with inside coring activities in the back room of the QAI building.

Six borings were advanced by the OEME crew (SB-05, SB-06, SB-07, SB-08, SB-09, and SB-10) using the Geoprobe. Borings SB-05 and SB-06 were advanced on the Rintec property located west of Turkey Brook (see Figure x). Borings SB-07, SB-09, SB-09, and SB-10 were advance along the western side of the QAI building, north of the monitoring wells installed in that area (see Figure X).

START used the coring machine to drill through the concrete floor in the remaining locations, and advanced nine borings (SBC-01, SBC-03, SBC-04, SBC-05, SBC-06, SBC-07, SBC-08, SBC-09, and SBC-10).

The macrocores collected from both drilling crews were screened with the MultiRAE, the macrocore sleeves were cut, soil samples were collected, and the soils were characterized (see Appendix X, Boring Logs). Sixteen soil samples (including one duplicate sample) were collected for Oil ID analysis. Following discussions with OSC Mia Pasquerella, the soil samples could not be analyzed at the U.S. OEME Laboratory for Oil ID analysis and OSC Pasquerella requested that START procure a Delivery of Analytical Services (DAS) laboratory to conduct the analysis. The START Lead Chemist subsequently procured Con-Test Analytical Laboratory, East Longmeadow, MA to conduct the analysis.

The exterior boreholes were filled with their respective cuttings and bentonite, then topped off with sand. The holes drilled through the floor storage room of the QAI building were filled with concrete. The locations of the 10 borings inside of the QAI building were measured from reference points inside of the building, and the locations of the exterior borings were also measured from known reference points and subsequently recorded with a global positioning system (GPS) unit. START photo-documented site activities (see Appendix X, Photo-documentation Log).

Two monitoring wells located on the Rintec property were gauged and found to be dry.

OEME personnel Mr. Keefe and Mr. Granz completed advancing soil borings with the Geoprobe and departed the site. Geoprobe, coring, and sampling equipment was decontaminated; and the decontamination and soil classification areas were disassembled. Field activities were completed for the day and START personnel departed the site.

<u>22 November 2013 (Friday)</u>

Weather: Steady Rain, 35°F

START members Mr. Mavris, Mr. Cardin, Mr. Ackerman, and Mr. Robinson arrived at the Turkey Brook site to continue with field activities initiated on 20 November 2013

START member Mavris conducted a tailgate health and safety meeting and discussed chemical, physical, and biological hazards associated with the site, and proposed scope of work activities. Site personnel signed the tailgate attendance sheet. Due to the steady rain the MultiRAE instruments were not used.

START established the soil classification/sampling area along the western section of the parking lot. The remaining four macrocores (SBC-07, SBC-08, SBC-09, and SBC-10) were cut, soil samples were collected, and the soil characterized. Field data sheets were completed and boring logs were prepared (see Appendix X, Boring Logs). The four soil samples were collected for Oil ID analysis.

The wells/piezometers were not labeled, therefore START labeled them beginning with MW-01 (southernmost well) and through MW-07 (northernmost well) (see Figure x). An oil/water interface probe was used to measure depth to water and depth to oil in the large (> 1-inch diameter wells) (see Table 1). START proceeded to collect a product/oil sample from MW-06, a 2-inch diameter monitoring well located adjacent to the cement pad at the exterior door of the back room. A sample was collected from MW-06 (2-ich diameter well) near the back door using a disposable bailer. Three 40-ml vials were filled and the samples were submitted to the OEME Laboratory for volatile organic compound (VOC), polychlorinated biphenyl (PCB), and Oil ID analyses (see Appendix X, Chain-of-Custody Records).

Field activities were completed and START personnel demobilized from the site.

24 November 2013 (Monday)

The product sample (oil) was relinquished to the EPA OEME Laboratory for Oil ID, VOC, and PCB analyses (see Appendix X, Chain-of-Custody Records). A courier from the DAS laboratory, Con-Test Analytical Laboratory picked up the 20 soil samples for TPH analysis.

4 December 2013 (Wednesday)

Analytical data for the product/oil samples were received from EPA's OEME Laboratory. Analytical results of the one product/oil sample, indicated that the sample chromatogram contained two characteristic "humps", one "hump" appeared to be a lubricating oil (i.e. motor oil, cutting oil) in the C18 - C38 hydrocarbon range; and other appeared to be a lighter compound (i.e. petroleum distillate) in the C10 - C13 hydrocarbon range (Gasoline Range Organics) [xx]. No VOCs or PCBs were detected in product/oil sample [xx].

5 December 2013 (Thursday)

Weather: Overcast, raining, 35°F

0800 hours: START member George Mavris arrived on site at the Turkey Brook Site in Oakville, Connecticut and met with Mike Quinlan (ERRS). Mike Watts and Jon Wicks (TMC Environmental, Inc.)

COPY

13K1055

CHAIN OF CUSTODY RECORD

Turkey Brook

Contact Name:

Contact Phone:

No: 11/22/13-0002

Cooler #:

Lab: Contest Laboratory

Lab Phone:

Lab #	DAS Number	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
01	D31835	13090009-0002	SBC-07	Oil ID	Soil	11/22/2013	08:00	1	4 oz jar		
02	D31836	13090009-0003	SBC-09	Oil ID	Soil	11/22/2013	08:25	1	4 oz jar		
03	D31837	13090009-0004	SBC-10	Oil ID	Soil	11/22/2013	08:35	1	4 oz jar		
04	D31838	13090009-0005	SBC-08	Oil ID	Soil	11/22/2013	08:15	1	4 oz jar		
05	D31839	13090009-0006	SBC-06	Oil ID	Soil	11/21/2013	14:05	1	4 oz jar		
06	D31840	13090009-0007	SBC-02	Oil ID	Soil	11/20/2013	14:00	1	4 oz jar		
07	D31841	13090009-0008	SB-07	Oil ID	Soil	11/21/2013	10:50	1	4 oz jar		
08	D31842	13090009-0009	SB-06	Oil ID	Soil	11/21/2013	15:00	1	4 oz jar		
09	D31843	13090009-0010	SB-04	Oil ID	Soil	11/20/2013	15:20	1	4 oz jar		
10	D31844	13090009-0011	SB-03	Oil ID	Soil	11/20/2013	13:40	1	4 oz jar		
11	D31845	13090009-0012	SB-02	Oil ID	Soil	11/20/2013	12:20	1	4 oz jar		
12	D31846	13090009-0013	SB-01	Oil ID	Soil	11/20/2013	10:50	1	4 oz jar		
13	D31847	13090009-0014	SB-104	Oil ID	Soil	11/20/2013	15:20	1	4 oz jar		
14	D31848	13090009-0015	SB-08	Oil ID	Soil	11/21/2013	11:15	1	4 oz jar		
15	D31849	13090009-0016	SB-09	Oil ID	Soil	11/21/2013	11:25	1	4 oz jar		
16	D31850	13090009-0017	SB-10	Oil ID	Soil	11/21/2013	15:40	1	4 oz jar		
17	D31851	13090009-0018	SBC-03	Oil ID	Soil	11/21/2013	09:20	1	4 oz jar		
18	D31852	13090009-0019	SBC-04	Oil ID	Soil	11/21/2013	09:40	1	4 oz jar		
19	D31853	13090009-0020	SBC-05	Oil ID	Soil	11/21/2013	13:50	1	4 oz jar		

Special Instructions:

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
		11/25/13		11/25/13	13						
		11/26/13	Rebecca Jarvis	11/25/13	1650						

13K1055

CHAIN OF CUSTODY RECORD

Turkey Brook
Contact Name:
Contact Phone:

No: 11/22/13-0002
Cooler #:
Lab: Contest Laboratory
Lab Phone:

Lab #	DAS Number	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
20	D31854	13090009-0021	SB-05	Oil ID	Soil	11/21/2013	10:30	1	4 oz jar		

Special Instructions:

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	[signature]	11/25/13	[signature]	11/25/13	1300						
	[signature]	11/25/13	750 [signature] 29	11/25/13	1650						

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

REPORT DATE: 12/6/2013

Weston Solutions, Inc. - Northeast Division
3 Riverside Drive
Andover, MA 01810
ATTN: John Burton

PURCHASE ORDER NUMBER: 0114649

PROJECT NUMBER: DAS Case #0855F

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13K1055

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Turkey Brook JBurton 12/20/13

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
D31835	13K1055-01	Soil	SBC-07	SM 2540G SW-846 8015C	
D31836	13K1055-02	Soil	SBC-09	SM 2540G SW-846 8015C	
D31837	13K1055-03	Soil	SBC-10	SM 2540G SW-846 8015C	
D31838	13K1055-04	Soil	SBC-08	SM 2540G SW-846 8015C	
D31839	13K1055-05	Soil	SBC-06	SM 2540G SW-846 8015C	
D31840	13K1055-06	Soil	SBC-02	SM 2540G SW-846 8015C	
D31841	13K1055-07	Soil	SB-07	SM 2540G SW-846 8015C	
D31842	13K1055-08	Soil	SB-06	SM 2540G SW-846 8015C	
D31843	13K1055-09	Soil	SB-04	SM 2540G SW-846 8015C	
D31844	13K1055-10	Soil	SB-03	SM 2540G SW-846 8015C	
D31845	13K1055-11	Soil	SB-02	SM 2540G SW-846 8015C	
D31846	13K1055-12	Soil	SB-01	SM 2540G SW-846 8015C	
D31847	13K1055-13	Soil	SB-104	SM 2540G SW-846 8015C	
D31848	13K1055-14	Soil	SB-08	SM 2540G SW-846 8015C	
D31849	13K1055-15	Soil	SB-09	SM 2540G SW-846 8015C	
D31850	13K1055-16	Soil	SB-10	SM 2540G SW-846 8015C	
D31851	13K1055-17	Soil	SBC-03	SM 2540G SW-846 8015C	
D31852	13K1055-18	Soil	SBC-04	SM 2540G SW-846 8015C	
D31853	13K1055-19	Soil	SBC-05	SM 2540G SW-846 8015C	
D31854	13K1055-20	Soil	SB-05	SM 2540G SW-846 8015C	

Evidence Audit Photocopy

COPY

SITE NAME: Turkey Brook Site

TDD NO.: 13-09-0009

TASK NO.: 0912

EPA REGION I
COMPLETE SDG FILE
RECEIPT/TRANSFER FORM

Case #: 0855F SDG: D31835 Data Package #: _____ _____

Receipt Date	Received by: Name	Init.	Affiliation	CSF Activity	Custody Seals: Present / Intact (On Receipt)		Released: To	Date
12/6/13	John Burton	JCB		DV Archive	Y (N)	Y (N)		
					Y N	Y N		
					Y N	Y N		
					Y N	Y N		
					Y N	Y N		
					Y N	Y N		
					Y N	Y N		
					Y N	Y N		
					Y N	Y N		
					Y N	Y N		
					Y N	Y N		
					Y N	Y N		
					Y N	Y N		

EPA-NE - DQO SUMMARY FORM

A separate Form should be completed for each sampling event. Refer to Attachment A for instructions on completing this form, Attachment B for a complete list of the parameter codes and Attachment C for an example of a completed form.

1. EPA Program: TSCA (CERCLA) RCRA DW NPDES CAA
Other:
Projected Date(s) of Sampling 18-22 November 2013
EPA Site Manager Mia Pasquerella
EPA Case Team Members

Site Name Turkey Brook Site
Site Location Oakville, Connecticut
Assigned Site Latitude/Longitude 41° 35' 54.01" N 73° 04' 32.00" W
CERCLA Site/Spill Identifier No. 01 (Include Operable Unit)
Phase: ERA SA/SI pre-RI RI (phase I, etc.) FS RD RA post-RA (circle one) Other: PASI

2. QAPjP Title and Revision Date

Approved by: Date of Approval:
Title of Approving Official: Organization*:
*If other than EPA, record date approval authority was delegated:

EPA Oversight Project (circle one) Y (N)
Type of EPA Oversight (circle one) PRP or FF
Other:
Confirmatory Analysis for Field Screening Y (N)
If EPA Oversight or Confirmatory: % splits
Are comparability criteria documented? Y (N)

3. a.	Matrix Code[1]	SO							
b.	Parameter Code[2]	Oil ID							
c.	Preservation Code[3]	5							
d.	Analytical Services Mechanism	NERL							
e.	No. of Sample Locations	50							
	Field QC:								
f.	Field Duplicate Pairs	3							
g.	Equipment Blanks	0							
h.	VOA Trip Blanks	0							
I.	Cooler Temperature Blanks	1							
j.	Bottle Blanks	0							
k.	Other:								
l.	PES sent to Laboratory	0							
	Laboratory QC:								
m.	Reagent Blank	0							
n.	Duplicate	0							
o.	Matrix Spike	0							
p.	Matrix Spike Duplicate	0							
q.	Other:								

4. Site Information
Site Dimensions 0.65 acres
List all potentially contaminated matrices soil, groundwater
Range of Depth to ~~Groundwater~~ unknown
Soil Types: Surface (Subsurface) Other:
Sediment Types: Stream Pond Estuary Wetland Other: Expected Soil/Sediment Moisture Content: High

When multiple matrices will be sampled during a sampling event, complete Sections 5-10 for each matrix. Matrix Code[1]

5. Data Use (circle all that apply) (Site Investigation/Assessment) PRP Determination Removal Actions
~~Nature and Extent of Contamination~~ Human and/or Ecological Risk Assessment Remediation Alternatives
Engineering Design Remedial Action
Post-Remedial Action (quarterly monitoring) Other:

6. Summarize DQOs: The objectives of this sampling event are to conduct additional sampling investigations to characterize the horizontal and vertical extents of contamination, to determine if any additional source areas of contamination exist, and determine if further actions may be required at the site.

Complete Table if applicable

COCs	Action Levels	Analytical Method-Quantitation Limits
Oil ID	100 mg/Kg	40 mg/Kg

7. Sampling Method (circle technique) Bailer Low flow pump (Region I method: Yes No) Peristaltic Pump
Positive Displacement Pump ~~Faucet or~~ Spigot Other:
Split Spoon Dredge Trowel Other: Macrocore

Sampling Procedures (SOP name, No., Rev. #, and date)
List Background Sample Locations
Circle: Grab or Composite
"Hot spots" sampled: Yes No

8. Field Data (circle) ORP pH Specific Conductance Dissolved O_2 Temperature Turbidity

Other:

9. Analytical Methods and Parameters

Method title/SOP name	Method/SOP Identification number	Revision Date	Target Parameters (VOA, SV, Pest/PCB, Metals, etc.)
Petroleum Oil Identification	MISCOILID3		Oil ID

10. Validation Criteria (circle one) 1. EPA New England Environmental Data Review Program Guidance
2. Other Approved Validation
Criteria:
Validation Tier (circle one) I I Plus II
Company/Organization Performing Data Validation Prime or Subcontractor (circle one)

11. Company Name Weston Solutions, Inc. Contract Number EP-W-05-042
Contract Name (e.g. START, RACS, etc.) START Work Assignment No. 01-13-09-0009
Person Completing Form/Title Bonnie Mace/Proj Scientist Date of DQO Summary Form Completion 11/13/13

Matrix Codes[1] - Refer to Attachment B, Part I
Parameter Codes[2] - Refer to Attachment B, Part II

Preservation Codes[3]

1. HCl to pH ≤ 2
2. HNO_3
3. $NaHSO_4$
4. H_2SO_4
5. Cool @ 4°C (± 2°)
6. NaOH
7. $K_2Cr_2O_7$
8. Freeze
9. Room Temperature (avoid excessive heat)
10. Other (Specify)
N. Not preserved

* - To supplement Matrix Codes and/or Parameter Codes contact the QA Unit