

Via Electronic Mail

January 20, 2017

Joseph A. Gowers
Remedial Project Manager
Emergency and Remedial Response Division
USEPA Region II
290 Broadway, 19th Floor
New York, New York 10007-1866

Re: Ringwood Mines/Landfill Superfund Site
Letter Report of Focused OCDA Investigation

Dear Mr. Gowers:

On behalf of Ford Motor Company (Ford), this letter report presents the findings and results of the focused investigation within the O'Connor Disposal Area (OCDA) at the referenced Site, as presented in a Work Plan dated November 8, 2016, which was approved by the USEPA on November 23, 2016. The objective of the focused investigation was to assess whether or not a localized source of 1,4-dioxane exists within the former paint waste removal area within the OCDA. As shown in the enclosed Figure 1, this former paint waste removal area is hydraulically up-gradient of groundwater monitoring well OB-17 in which groundwater samples have exhibited a concentration of 1,4-dioxane above its New Jersey Interim Specific Groundwater Quality Criterion (ISGWQC).

In summary, a total of 43 samples (41 native samples and two blind duplicates) were collected from a sampling grid within the former paint waste removal area. 1,4-dioxane was not detected in any of the 43 samples collected, and a localized source of 1,4-dioxane was not identified. In addition, paint waste was not identified in any of the borings.

At the request of the USEPA, in addition to the soil samples, two samples of paint waste surficial fragments were also collected from the OCDA during the field activities, and were also analyzed for 1,4-dioxane. The laboratory analytical results indicate that no 1,4-dioxane was reported in either of the two paint waste samples.

The work scope and findings of the targeted soil investigation are provided in detail below.

Field Procedures

Mobilization to the Site for performance of the boring program occurred on December 12, 2016, at which time the boring locations were field staked using GPS coordinates and access to the drilling locations was cleared with a small bulldozer. Five boring locations (2, 3, 5, 11, and 14) were field adjusted to enable drill rig access. The final boring locations in relation to the sampling grid shown in the approved Work Plan are shown in the attached Figure 1. As shown, the boring location adjustments were nominal and did not affect the overall program of sampling within the former paint waste removal area.

Borings were advanced using a track-mounted sonic drill rig during the period December 13-15, 2016 and all activities completed and equipment demobilized on December 16, 2016. Continuous soil cores were attempted at each location; however, due to the granular nature of the soils at some locations (i.e., loose sand, stone aggregate that would not fit in the core sleeve), continuous core sample collection was not possible at every boring due to a lack of recovery. Finer-grained soils did remain in the core sleeve which are the preferential sample material since, if 1,4-dioxane was present, it is more likely to have been retained in finer-grained soils than on coarser material. The Boring Logs are provided as Attachment A.

Soil cores were collected in acetate sleeves. Upon retrieval, each soil core was subjected to the following:

- Screening with a Photoionization Detector (PID);
- Visual inspection for any apparent evidence of waste, paint waste, discoloration, or any other indication of potential environmental concern;
- Olfactory evidence of odors; and
- Evidence of having encountered the groundwater table (i.e., saturated soil).

Samples for laboratory analysis were collected based on the results of the above screening process with samples biased towards the following:

- A PID reading;
- Evidence of discoloration, waste, etc.;
- A zone indicating any odor; or
- If none of the above were indicated, within a representative portion of the core and within finer-grained material.

The attached Table 1 summarizes the boring locations, samples collected for laboratory analysis at each boring location, and the results of the field screening process. In addition, two blind duplicate samples were collected for quality control purposes, and the locations are noted in the table.

Of note, at the time of the focused investigation, the depth to groundwater at wells OB-17 and OB-22 were checked. The groundwater elevation at OB-17 was 485.15', consistent with recent

mapping (i.e., the annual sampling event at which time the elevation was 485.7'). The groundwater elevation at OB-22 was at approximately elevation 505', or approximately 8 feet higher than recent mapping (i.e., the August 2016 annual sampling event). Therefore, within the area of the focused investigation the groundwater table was encountered at a higher elevation (i.e. at a shallower depth below ground surface) than indicated based on prior depth to overburden groundwater data, likely as a result of antecedent rainfall and ongoing snow melt. While the approved Work Plan included the collection of only one sample below the groundwater table, as a precautionary measure to account for the more typical depth to groundwater and the apparent water table fluctuation, at 12 of the 14 boring locations, more than one sample was collected in the saturated zone below the water table, and up to depths of approximately 25 feet, consistent with the intent of the approved work plan.

As noted above, paint waste was not observed at any of the boring locations. Since small, visible remnants of paint waste (i.e., fragments) are present on the surface within the OCDA, and at the request of the USEPA, two paint waste samples were collected for laboratory analysis of 1,4-dioxane along with the soil samples collected in the focused investigation.

Laboratory Analysis

Each soil sample collected for analysis was labeled as B-2016-(boring location)-(sample interval). The samples were shipped on ice, under chain of custody to Alpha Analytical for analysis for 1,4-dioxane via USEPA Method 8270 SIM with isotope dilution. The Alpha Analytical laboratory reports, which include the chain of custody records, and the Cadena data validation reports are enclosed as Attachments B and C, respectively. As shown, the analytical result for each of the soil samples was validated without qualification.

In addition, the two paint waste samples were designated PW-1 and PW-2. In a conversation with the laboratory, instructions were provided to collect the portion of the paint waste samples for analysis from the interior of each paint waste sample so that the portion that would have been the least subject to weathering was targeted for analysis.

Results

As shown in the Boring Logs provided as Attachment A, the soils encountered within the former paint waste removal area within the OCDA were indicative of the imported fill used to backfill the former paint waste removal area. The predominant soil type is a brown/tan sand. Typically at depth, mine tailings were also encountered and are characterized as gray, dark gray, or black fine to coarse-grained material, as described on the boring logs. Encountering mine tailings is indicative that the sample intervals were extended to points below the prior excavation in the area of investigation, as was intended in the approved work plan, and accomplished by collecting more than one sample (only one sample was planned per the approved work plan) below the water table.

As shown in Table 1, of the soil samples collected, PID readings were measured in three samples all at the boring B-2016-3 location. Each of the samples that exhibited a PID reading was submitted for laboratory analysis of 1,4-dioxane. As also noted on Table 1, the sample from the 14'-14.5' depth interval at this location also had a petroleum-like odor, which is the only sample that exhibited a noticeable odor.

Finally, as also shown in Table 1, of the 41 soil samples collected, three exhibited faint discoloration, although, based on review of historic reports and field observation of the characteristics of the paint waste during investigation activities, not indicative of paint waste. These samples were encountered at boring locations B-2016-6, B-2016-7, and B-2016-11. Each of these samples were also submitted for laboratory analysis for 1,4-dioxane.

Review of the Alpha Analytical reports indicates that 1,4-dioxane was not detected (ND) in any of the 41 soil samples nor in the two paint waste samples collected. All results are therefore ND at a typical method detection limit of approximately 4.0 ug/kg.

Please contact us if you have questions or comments on the content of this report.

Sincerely,

CORNERSTONE ENGINEERING GROUP, LLC



Gary J. DiPippo, Professional Engineer.
NJ Lic. # 24GE02646100



Timothy R. Roeper, PG
Client Manager, Hydrogeology

Figure 1: OCDA Sample Locations, December 2016

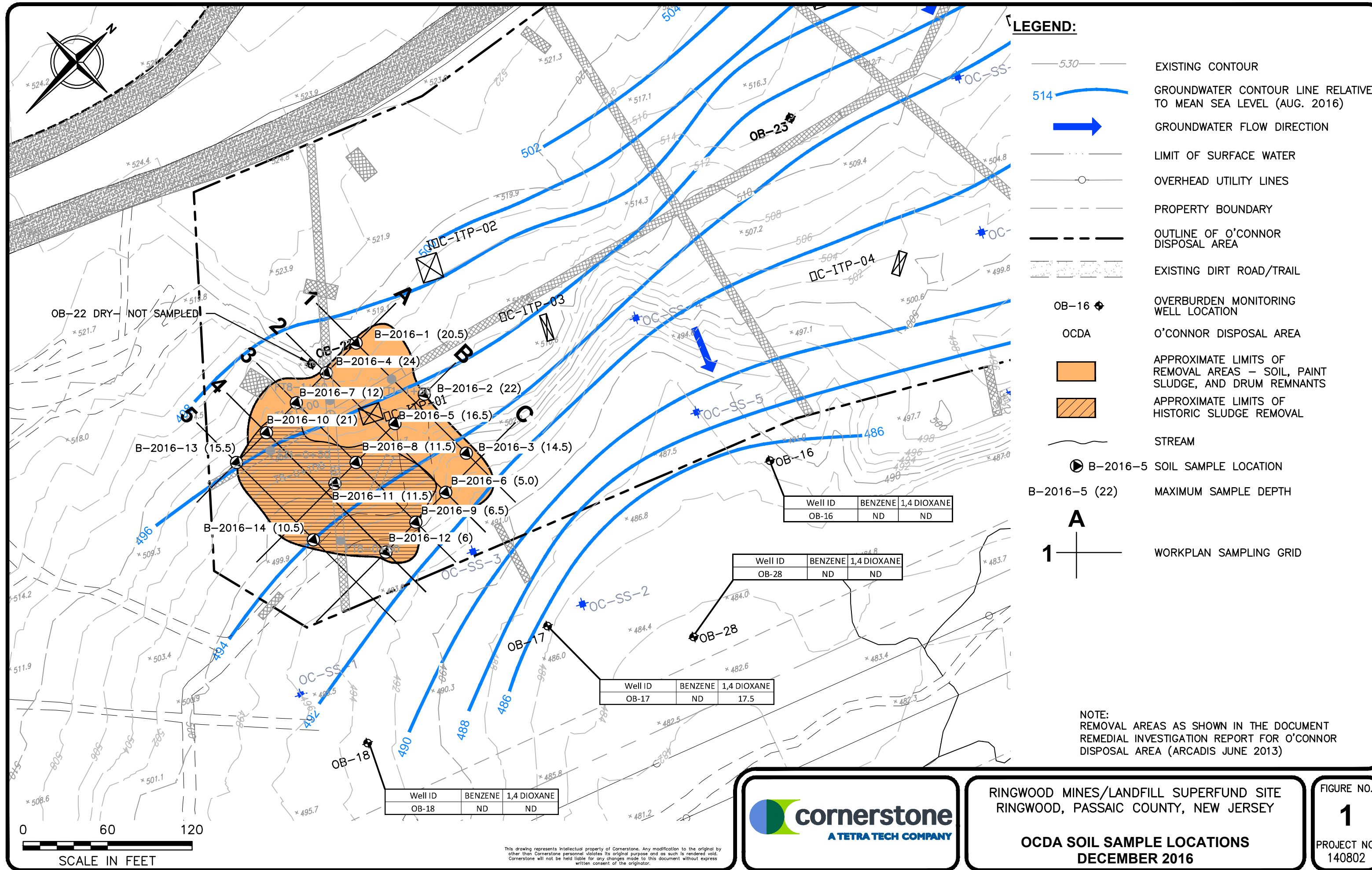
Table 1: OCDA Soil Sample Summary Table

Attachment A: Boring Logs

Attachment B: Alpha Analytical Laboratory Reports

Attachment C: Cadena Validation Reports

cc: B. Bussa, Ford
T. Green, Ford OGC
J. Lagrotteria, LeClairRyan
D. Laguzza, LeClairRyan
K. Petrone, NJDEP
L. Dodge, Excel
R. Harwood, Excel
W. Monahan
C. Coslett, de maximis



RINGWOOD MINES/LANDFILL SUPERFUND SITE
RINGWOOD, PASSAIC COUNTY, NEW JERSEY

**OCDA SOIL SAMPLE LOCATIONS
DECEMBER 2016**

FIGURE NO.
1
PROJECT NO.
140802

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Table 1
OCDA Soil Sample Summary Table
1,4-dioxane Testing in Former Paint Waste Removal Area
December 2016

Boring ID	Sample Interval	Above/Below Water Table	PID Reading (ppm) Y/N -result	Coloration or Odor detected	1,4-Dioxane Result*
B-2016-1	5.0 - 5.5	Above	N	NO	ND (<4.25)
	9.0 - 9.5	Below	N	NO	ND (<4.28)
	13.5 - 14.0	Below	N	NO	ND (<4.36)
	20.0 - 20.5 (DUP)	Below	N	NO	ND (<4.08)/ND (<3.80)
B-2016-2	4.5 - 5.0	Above	N	NO	ND (<3.81)
	11.0 - 11.5	Below	N	NO	ND (<3.95)
	16.5 - 17.0	Below	N	NO	ND (<3.89)
	21.5 - 22	Below	N	NO	ND (<4.90)
B-2016-3	5.5 - 6.0	Above	Y - 7 ppm	NO	ND (<4.32)
	9.5 - 10.0	Below	Y - 14 - 44 ppm	NO	ND (<4.41)
	14.0 - 14.5	Below	Y - 0 - 1 ppm	sweet, petroleum-like odor noted	ND (<4.98)
B-2016-4	8.5 - 9.0	Above	N	NO	ND (<4.10)
	11.0 - 11.5	Below	N	NO	ND (<4.31)
	15.0 - 15.5	Below	N	NO	ND (<4.40)
	20.0 - 20.5	Below	N	NO	ND (<4.09)
	23.5 - 24.0	Below	N	NO	ND (<4.09)
B-2016-5	0.5 - 1.0	Above	N	NO	ND (<4.22)
	11.0 - 11.5	Below	N	NO	ND (<4.05)
	15.0 - 15.5	Below	N	NO	ND (<4.15)
B-2016-6	1.5 - 2.0	Above	N	NO	ND (<4.07)
	4.5 - 5.0	Below	N	purple/blue color noted, not paint waste	ND (<4.04)
B-2016-7	9.0 - 9.5	Below	N	discoloration noted, not paint waste	ND (<3.92)
	11.5 - 12	Below	N	NO	ND (<4.78)
B-2016-8	4.5 - 5.0	Below	N	NO	ND (<4.16)
	9.0 - 9.5	Below	N	NO	ND (<4.00)
	11.0 - 11.5	Below	N	NO	ND (<4.41)
B-2016-9	2.0 - 2.5 (DUP)	Above	N	NO	ND (<3.88)/ND (<3.89)
	6.0 - 6.5	Below	N	NO	ND (<4.00)
B-2016-10	4.0 - 4.5	Above	N	NO	ND (<3.97)
	9.0 - 9.5	Below	N	NO	ND (<4.11)
	11.5 - 12	Below	N	NO	ND (<4.44)
	20.5 - 21.0	Below	N	NO	ND (<4.34)
B-2016-11	5.0 - 5.5	Below	N	NO	ND (<4.53)
	11.0 - 11.5	Below	N	purple coloration noted, not paint waste	ND (<4.12)
B-2016-12	4.0 - 4.5	Below	N	NO	ND (<4.36)
	5.5 - 6.0	Below	N	NO	ND (<4.41)
B-2016-13	5.0 - 5.5	Above	N	NO	ND (<3.93)
	10.0 - 10.5	Below	N	NO	ND (<4.17)
	15.0 - 15.5	Below	N	NO	ND (<4.03)
B-2016-14	4.0 - 4.5	Below	N	NO	ND (<4.12)
	10.0 - 10.5	Below	N	NO	ND (<4.00)

*ND (<3.80) = Non-Detect, Method Detection Limit in ug/kg shown in parentheses

ATTACHMENT A – BORING LOGS

B-2016-1

B-2016-2

B-2016-3

B-2016-4

B-2016-5

B-2016-6

B-2016-7

B-2016-8

B-2016-9

B-2016-10

B-2016-11

B-2016-12

B-2016-13

B-2016-14

Boring Log



Client Ford Motor Company

Boring ID B-2016-1

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit Drilling	Start Date	12/13/16	Northing	841240.000
	Drilled by	Bill Shinn	Completion Date	12/14/16	Easting	556120.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	24.00	Surface Elev. (ft)	515.00 <small>Elevation estimated based on OB-22</small>
	Drill Rig	Fraste	Borehole Dia. (in)	3	DTW (ft. bgs)	9.00
	Drilling Method	Sonic			Horizontal Datum	
	Sample Method	Sonic			Vertical Datum	

Notes:

DEPTH	(ELEV. FT) PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0	515			GROUND SURFACE	
			N/A	No Recovery	
5	510	B-2016-1-(5-5.5)	SM	Orange, Tan m SAND, little Silt, little mf Gravel	
			N/A	No Recovery	
10	505	B-2016-1-(9-9.5)	GM	SILT, some mf Sand, some cmf Gravel, Wet	
			SM	Tan mf Sand, some Silt, Damp	
			SM	Dark Gray SILT/Mine Tailings, some f Sand, Saturated	
15	500	B-2016-1-(13.5-14)	SW	Brown/Orange cmf SAND, little f Gravel, Damp	
			SM	Gray SILT/Mine Tailings, some Tan f Sand, little mf gravel, Damp	
20	495				

Boring Log



Client Ford Motor Company

Boring ID B-2016-1

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

DEPTH (ELEV. FT.)	PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0		B-2016-1-(20-20.5)	SM	Gray SILT/Mine Tailings, some Tan f Sand, little mf gravel, Damp	
			SM	Brown f SAND, trace Gray Silt/Mine Tailings, little f Gravel, Slightly Moist	
25	190				
30	185				
35	180				
40	175				
45	170				

Boring Log



Client Ford Motor Company

Boring ID B-2016-2

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit Drilling	Start Date	12/13/16	Northing	841240.000
	Drilled by	Bill Shinn	Completion Date	12/14/16	Easting	556180.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	24.00	Surface Elev. (ft)	513.00 <small>Elevation estimated based on OB-22</small>
	Drill Rig	Fraste	Borehole Dia. (in)	3	DTW (ft. bgs)	10.50
	Drilling Method	Sonic			Horizontal Datum	
	Sample Method	Sonic			Vertical Datum	

Notes:

DEPTH	(ELEV. FT) PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0				GROUND SURFACE	
			N/A	No Recovery	
			GP	Black cmf GRAVEL	
5	0	B-2016-2-(4.5-5)	SP	Brown mf SAND and Black cm SAND, little cmf Gravel	
			N/A	No Recovery	
			SP	Brown cm SAND, little cmf Gravel	
10	0	B-2016-2-(11-11.5)	SM	Light Brown mf SAND, some Silt, Damp	
			N/A	No Recovery	
			SM	Light Brown mf SAND, little Gray Silt/Mine Tailings	
15		B-2016-2-(16.5-17)	SP	cmf SAND, little mf Gravel	
			ML	Brown SILT, Saturated	
20	0				

Boring Log



Client Ford Motor Company

Boring ID B-2016-2

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

DEPTH (ELEV. FT)	PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0			ML	Brown SILT, Saturated	
		B-2016-2-(21.5-22)			
190			SM	Tan mf SAND, some Gray Silt/Mine Tailings, little mf Gravel, Damp	
0					
25					
185					
30					
180					
35					
175					
40					
170					
45					

Boring Log



Client Ford Motor Company

Boring ID B-2016-3

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit Drilling	Start Date	12/14/16	Northing	841240.000
	Drilled by	Bill Shinn	Completion Date	12/14/16	Easting	556240.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	16.00	Surface Elev. (ft)	510.00
	Drill Rig	Fraste	Borehole Dia. (in)	3	Elevation estimated based on OB-22	
	Drilling Method	Sonic			DTW (ft. bgs)	9.00
Sample Method					Sonic	Horizontal Datum
					Vertical Datum	

Notes:

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0	510				GROUND SURFACE	
				N/A	No Recovery	
				GM	mf GRAVEL, some mf Sand	
5	505			SP	Orange/Brown m SAND, little mf Black Gravel, Woody Debris	
			B-2016-3-(5.5-6)			
				N/A	No Recovery	
				SM	mf SAND, some Black Silt, Moist	
10	500			SP	Light Brown /Tan f SAND, little f Gravel, Slightly Moist	
			B-2016-3-(9.5-10)			
				ML	SILT, sweet petroleum like odor noticed, Saturated	
				SW	Medium Brown mf SAND, Saturated	
				GP	fm GRAVEL, some Light Gray Silt, Moist	
			B-2016-3-(14-14.5)			
15	495					
20	490					

Boring Log



Client Ford Motor Company

Boring ID B-2016-4

Project OCDA Sampling

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit	Start Date	12/13/16	Northing	841210.000
	Drilled by	Bill Shinn	Completion Date	12/13/16	Easting	556120.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	30.00	Surface Elev. (ft)	515.00 <small>Elevation estimated based on OB-22</small>
	Drill Rig	Fraste	Borehole Dia. (in)	3	DTW (ft. bgs)	9.50
	Drilling Method	Sonic			Horizontal Datum	
	Sample Method				Vertical Datum	

Notes:

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0	515				GROUND SURFACE	
				ML	SILT, some Grass and Roots, mf Gravel, Damp	
				N/A	No Recovery	
5	510					
			B-2016-4-(8.5-9)	GC	CLAY, some mf Gravel, Damp	
				PT	Woody Organic Debris, Damp	
10	505					
			B-2016-4-(11-11.5)	GM	Gray SILT/Mine Tailings, little f Gravel, Damp	
				GP	mf GRAVEL	
				CL	Dark Gray Silt with brown streaks/Mine Tailings, Damp	
				ML	Brown and Dark Gray SILT/Mine Tailings	
				GM	Brown SILT, some Clay, little f gravel	
15	500					
			B-2016-4-(15-15.5)	SM	mf SAND, some Silt, little f Gravel	
				ML	Brown and Gray SILT/Mine Tailings	
20	495					
				GM	Brown SILT, some f Gravel	

Boring Log



Client Ford Motor Company

Boring ID B-2016-4

Project OCDA Sampling

Location Ringwood, NJ

Project No. 140802-018

DEPTH (ELEV. FT)	PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0		B-2016-4-(20-20.5)	GM	Brown SILT, some f Gravel	
			SM	Brown SILT, Gray Clay, mf Sand, Damp	
		B-2016-4-(23.5-24)	SM	Brown SILT, some mf Sand, Wet	
25	190		ML	Dark Gray SILT/Mine Tailings, Damp	
30	185				
35	180				
40	175				
45	170				

Boring Log



Client Ford Motor Company

Boring ID B-2016-5

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit Drilling	Start Date	12/14/16	Northing	841210.000
	Drilled by	Bill Shinn	Completion Date	12/14/16	Easting	556180.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	18.00	Surface Elev. (ft)	512.00
	Drill Rig	Fraste	Borehole Dia. (in)	3	Elevation estimated based on OB-22	
	Drilling Method	Sonic			DTW (ft. bgs)	11.00
Sample Method					Sonic	Horizontal Datum
					Vertical Datum	

Notes:

DEPTH	(ELEV. FT) PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0				GROUND SURFACE	
		B-2016-5-(0.5-1)	SP	Brown and Tan mf SAND, little roots, little cmf Gravel, trace Silt, Moist	
			N/A	No Recovery	
5					
10			GP	Black cmf GRAVEL	
		B-2016-5-(11-11.5)	GM	Tan, Orange, Brown mf SAND, some mf Gravel, trace Silt, Slightly Moist	
			SP	cm SAND, some cmf Gravel, Slightly Moist	
			GM	SILT/Mine Tailings, some f Sand, Black mf Gravel	
15		B-2016-5-(15-15.5)			
			SC	Gray SILT/Mine Tailings, White and Tan Sand	
20					

Boring Log



Client Ford Motor Company

Boring ID B-2016-6

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit Drilling	Start Date	12/15/16	Northing	841210.000
	Drilled by	Bill Shinn	Completion Date	12/15/16	Easting	556240.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	5.00	Surface Elev. (ft)	505.00
	Drill Rig	Fraste	Borehole Dia. (in)	3	Elevation estimated based on OB-22	
	Drilling Method	Sonic			DTW (ft. bgs)	3.00
Sample Method					Sonic	Horizontal Datum
					Vertical Datum	

Notes:

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0	505				GROUND SURFACE	
			B-2016-6-(1.5-2)	SM	cmf SAND, little roots, trace of Silt, Saturated	
				SP	Tan cm SAND, little f Gravel, Damp purple/blue coloration noted, uncharacteristic of paint sludge	
5	500		B-2016-6-(4.5-5)			
10	495					
15	490					
20	485					

Boring Log



Client Ford Motor Company

Boring ID B-2016-7

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit Drilling	Start Date	12/15/16	Northing	841180.000
	Drilled by	Bill Shinn	Completion Date	12/15/16	Easting	556120.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	12.00	Surface Elev. (ft)	508.00
	Drill Rig	Fraste	Borehole Dia. (in)	3	Elevation estimated based on OB-22	
	Drilling Method	Sonic			DTW (ft. bgs)	5.00
Sample Method					Sonic	Horizontal Datum
					Vertical Datum	

Notes:

DEPTH	(ELEV. FT) PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0				GROUND SURFACE	
			SM	mf SAND, little Silt, little cmf Gravel, Damp	
			N/A	No Recovery	
5.05					
			SW	Brown mf SAND, Saturated	
			SM	Brown f SAND, some Silt, mf Gravel, Damp, discoloration noticed in soil around 9', not paint waste	
10		B-2016-7-(9-9.5)			
			SW	Brown mf SAND, Saturated	
			SP	Tan/Brown mf SAND, some mf Gravel	
10		B-2016-7-(11.5-12)			
15					
15					
20					

Boring Log



Client Ford Motor Company

Boring ID B-2016-8

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit Drilling	Start Date	12/15/16	Northing	841180.000
	Drilled by	Bill Shinn	Completion Date	12/15/16	Easting	556180.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	12.00	Surface Elev. (ft)	506.00 <small>Elevation estimated based on OB-22</small>
	Drill Rig	Fraste	Borehole Dia. (in)	3	DTW (ft. bgs)	3.00
	Drilling Method	Sonic			Horizontal Datum	
	Sample Method	Sonic			Vertical Datum	

Notes:

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0					GROUND SURFACE	
	505			SP	Brown mf SAND, Damp	
	0			GP	f GRAVEL	
				GM	Dark SILT/Mine Tailings, some f Gravel, Wet	
5			B-2016-8-(4.5-5)	SM	Dark SILT/Mine Tailings, trace Brown mf Sand	
	500			SM	SILT, some Brown mf Sand, little mf Gravel	
	0		B-2016-8-(9-9.5)			
10			B-2016-9-(11-11.5)	SM	f SAND, little Silt, little f Gravel, Damp	
	495					
	0					
15						
	490					
20						

Boring Log



Client Ford Motor Company

Boring ID B-2016-9

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit Drilling	Start Date	12/15/16	Northing	841180.000
	Drilled by	Bill Shinn	Completion Date	12/15/16	Easting	556240.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	8.00	Surface Elev. (ft)	504.00
	Drill Rig	Fraste	Borehole Dia. (in)	3	Elevation estimated based on OB-22	
	Drilling Method	Sonic			DTW (ft. bgs)	4.00
Sample Method					Sonic	Horizontal Datum
					Vertical Datum	

Notes:

DEPTH	(ELEV. FT) PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0				GROUND SURFACE	
			SP	Brown mf SAND, cmf Gravel	
			SW	Brown/Orange cmf SAND, little White Sand	
		B-2016-9-(2-2.5)			
			GP	mf GRAVEL	
5			SP	Brown m SAND, little mf Gravel, Damp	
		B-2016-9-(6-6.5)	SM	Brown m SAND, little Silt, little mf Gravel, Damp	
			GP	mf GRAVEL	
			SP	Dense Brown, Orange, Tan m SAND, little f Gravel, trace Silt	
10	495				
15	490				
20	485				

Boring Log



Client Ford Motor Company

Boring ID B-2016-10

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit Drilling	Start Date	12/14/16	Northing	841150.000
	Drilled by	Bill Shinn	Completion Date	12/14/16	Easting	556120.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	23.00	Surface Elev. (ft)	510.00 <small>Elevation estimated based on OB-22</small>
	Drill Rig	Fraste	Borehole Dia. (in)	3	DTW (ft. bgs)	6.00
	Drilling Method	Sonic			Horizontal Datum	
	Sample Method	Sonic			Vertical Datum	

Notes:

DEPTH	(ELEV. FT)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0	510			GROUND SURFACE	
			SM	m SAND, some Silt, little roots, Damp	
			SM	Dark Brown f SAND, some Silt	
			SP	Light Brown/Orange mf SAND, some Gray Silt, little mf Gravel	
		B-2016-10-(4-4.5)			
5	505		SM	Brown f SAND, Silt, Wet	
			GM	SILT, little mf Gravel, trace of Sand, Slightly Damp	
		B-2016-10-(9-9.5)			
10	500		ML	Gray SILT/Mine Tailings, Moist	
		B-2016-10-(11.5-12)			
			SM	mf SAND, Gray Silt	
			GM	SILT, little mf Gravel, trace f Sand	
15	495		GM	Brown SILT, little mf Gravel	
			ML	Gray SILT/Mine Tailings, trace f sand, Damp	
20	490				

Boring Log



Client Ford Motor Company

Boring ID B-2016-10

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

DEPTH (ELEV. FT.)	PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0					
		B-2016-10-(20.5-21)	ML	Gray SILT/Mine Tailings, trace f sand, Damp	
			GP	mf GRAVEL	
			ML	Gray SILT/Mine Tailings	
25	485				
30	480				
35	475				
40	470				
45	465				

Boring Log



Client Ford Motor Company

Boring ID B-2016-11

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit Drilling	Start Date	12/15/16	Northing	841150.000
	Drilled by	Bill Shinn	Completion Date	12/15/16	Easting	556180.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	12.00	Surface Elev. (ft)	507.00
	Drill Rig	Fraste	Borehole Dia. (in)	3	Elevation estimated based on OB-22	
	Drilling Method	Sonic			DTW (ft. bgs)	4.00
Sample Method					Sonic	Horizontal Datum
					Vertical Datum	

Notes:

DEPTH	(ELEV. FT) PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0				GROUND SURFACE	
			N/A	No Recovery	
			SP	Dark Brown cmf SAND, little pebbles, roots, Wet	
5		B-2016-11-(5-5.5)	SP	Orange/Brown/White mf SAND, little Black mf Gravel, Damp	
			N/A	No Recovery	
10		B-2016-11-(11-11.5)	SP	Light Brown f SAND, some Silt, little f Gravel. Faint Purple coloration noted around 11', not paint waste	
15					
20					

Boring Log



Client Ford Motor Company

Boring ID B-2016-12

Project Ringwood

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit Drilling	Start Date	12/15/16	Northing	841150.000
	Drilled by	Bill Shinn	Completion Date	12/15/16	Easting	556240.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	6.00	Surface Elev. (ft)	505.00 <small>Elevation estimated based on OB-22</small>
	Drill Rig	Fraste	Borehole Dia. (in)	3	DTW (ft. bgs)	4.00
	Drilling Method	Sonic			Horizontal Datum	
	Sample Method	Sonic			Vertical Datum	

Notes:

DEPTH	(ELEV.) (ft)	PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0	505				GROUND SURFACE	
				N/A	No Recovery	
			B-2016-6-(4-4.5)	SM	Brown m SAND, little Brown Silt	
5	500			SP	Orange/Brown with bands of White mf SAND, little mf Gravel	
			B-2016-6-(5.5-6)			
10	495					
15	490					

Boring Log



Client Ford Motor Company

Boring ID B-2016-13

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit Drilling	Start Date	12/14/16	Northing	841120.000
	Drilled by	Bill Shinn	Completion Date	12/14/16	Easting	556120.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	18.00	Surface Elev. (ft)	511.00
	Drill Rig	B-2016Fraste	Borehole Dia. (in)	3	Elevation estimated based on OB-22	
	Drilling Method	Sonic			DTW (ft. bgs)	6.00
Sample Method					Sonic	Horizontal Datum
					Vertical Datum	

Notes:

DEPTH	(ELEV. FT)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0				GROUND SURFACE	
			N/A	No Recovery	
5	510	B-2016-13-(5-5.5)	SM	Brown mf SAND, some Silt, f Gravel, Damp	
			SP	f SAND, some Silt, little f Gravel, Wet	
			GP	f GRAVEL	
10	500	B-2016-13-(10-10.5)	SM	Brown and Gray f SAND, some Silt, Wet	
			GP	f Gravel	
			MH	SILT/Mine Tailings, Wet	
			SM	f SAND, some Silt/Mine Tailings, little f Gravel	
15	495	B-2016-13-(15-15.5)	GP	fm GRAVEL	
20					

Boring Log



Client Ford Motor Company

Boring ID B-2016-14

environmental
Cornerstone Engineering Group, LLC

Project Ford Motor Company

Location Ringwood, NJ

Project No. 140802-018

Drilling	Drilling Contractor	Summit Drilling	Start Date	12/15/16	Northing	841120.000
	Drilled by	Bill Shinn	Completion Date	2/15/16	Easting	556180.000
	Logged by	John Giuliano	Borehole Depth (ft bgs)	11.00	Surface Elev. (ft)	508.00
	Drill Rig	Fraste	Borehole Dia. (in)	3	Elevation estimated based on OB-22	
	Drilling Method	Sonic			DTW (ft. bgs)	4.00
					Sample Method	Sonic

Notes:

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0					GROUND SURFACE	
				N/A	No Recovery	
	505					
5			B-2016-14-(4-4.5)	SP	Light and Medium Brown mf SAND, little f Gravel, Wet	
				SW	Brown, Tan and White f SAND, Damp	
				SM	Brown mf SAND, little Black f Gravel, trace of Silt/Mine Tailings, Damp	
	500					
				SM	Brown f SAND, little Black f Gravel, trace of Silt/Mine Tailings, Wet	
10			B-2016-14-(10-10.5)			
	495					
15						
	490					
20						

ATTACHMENT B – LABORATORY REPORTS



ANALYTICAL REPORT

Lab Number:	L1641090
Client:	Cornerstone/Cadena Co. joint account 1099 Highland Drive, Suite E Ann Arbor, MI 48108
ATTN:	Jim Tomalia
Phone:	(517) 819-0356
Project Name:	FORD-RINGWOOD
Project Number:	140802-018
Report Date:	01/09/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), ME (MA00030), PA (68-02089), VA (460194), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), USFWS (Permit #LE2069641), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1641090-01	B-2016-1-5-5.5	SOIL	RINGWOOD, NJ	12/13/16 14:00	12/16/16
L1641090-02	B-2016-1-9-9.5	SOIL	RINGWOOD, NJ	12/13/16 14:15	12/16/16
L1641090-03	B-2016-1-13.5-14	SOIL	RINGWOOD, NJ	12/13/16 14:30	12/16/16
L1641090-04	B-2016-1-20-20.5	SOIL	RINGWOOD, NJ	12/14/16 09:45	12/16/16
L1641090-05	B-2016-2-4.5-5	SOIL	RINGWOOD, NJ	12/13/16 15:20	12/16/16
L1641090-06	B-2016-2-11-11.5	SOIL	RINGWOOD, NJ	12/13/16 15:35	12/16/16
L1641090-07	B-2016-2-16.5-17	SOIL	RINGWOOD, NJ	12/13/16 16:15	12/16/16
L1641090-08	B-2016-2-21.5-22	SOIL	RINGWOOD, NJ	12/14/16 08:00	12/16/16
L1641090-09	B-2016-3-5.5-6	SOIL	RINGWOOD, NJ	12/14/16 11:05	12/16/16
L1641090-10	B-2016-3-9.5-10	SOIL	RINGWOOD, NJ	12/14/16 11:15	12/16/16
L1641090-11	B-2016-3-14-14.5	SOIL	RINGWOOD, NJ	12/14/16 11:55	12/16/16
L1641090-12	B-2016-4-8.5-9	SOIL	RINGWOOD, NJ	12/13/16 11:20	12/16/16
L1641090-13	B-2016-4-11.0-11.5	SOIL	RINGWOOD, NJ	12/13/16 11:30	12/16/16
L1641090-14	B-2016-4-15-15.5	SOIL	RINGWOOD, NJ	12/13/16 12:00	12/16/16
L1641090-15	B-2016-4-20-20.5	SOIL	RINGWOOD, NJ	12/13/16 12:20	12/16/16
L1641090-16	B-2016-4-23.5-24	SOIL	RINGWOOD, NJ	12/13/16 12:30	12/16/16
L1641090-17	B-2016-5-.5-1	SOIL	RINGWOOD, NJ	12/14/16 10:15	12/16/16
L1641090-18	B-2016-5-11-11.5	SOIL	RINGWOOD, NJ	12/14/16 10:25	12/16/16
L1641090-19	B-2016-5-15-15.5	SOIL	RINGWOOD, NJ	12/14/16 10:45	12/16/16
L1641090-20	B-2016-6-4.5-5	SOIL	RINGWOOD, NJ	12/15/16 10:10	12/16/16
L1641090-21	B-2016-6-1.5-2	SOIL	RINGWOOD, NJ	12/15/16 10:00	12/16/16
L1641090-22	B-2016-7-9-9.5	SOIL	RINGWOOD, NJ	12/15/16 08:40	12/16/16
L1641090-23	B-2016-7-11.5-12	SOIL	RINGWOOD, NJ	12/15/16 08:55	12/16/16
L1641090-24	B-2016-8-11-11.5	SOIL	RINGWOOD, NJ	12/15/16 09:45	12/16/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1641090-25	B-2016-8-9-9.5	SOIL	RINGWOOD, NJ	12/15/16 09:35	12/16/16
L1641090-26	B-2016-8-4.5-5	SOIL	RINGWOOD, NJ	12/15/16 09:20	12/16/16
L1641090-27	B-2016-9-6-6.5	SOIL	RINGWOOD, NJ	12/15/16 10:55	12/16/16
L1641090-28	B-2016-9-2-2.5	SOIL	RINGWOOD, NJ	12/15/16 10:40	12/16/16
L1641090-29	B-2016-10-4-4.5	SOIL	RINGWOOD, NJ	12/14/16 14:40	12/16/16
L1641090-30	B-2016-10-9-9.5	SOIL	RINGWOOD, NJ	12/14/16 14:45	12/16/16
L1641090-31	B-2016-10-11.5-12	SOIL	RINGWOOD, NJ	12/14/16 14:50	12/16/16
L1641090-32	B-2016-10-20-21.5	SOIL	RINGWOOD, NJ	12/14/16 15:40	12/16/16
L1641090-33	B-2016-11-5-5.5	SOIL	RINGWOOD, NJ	12/15/16 13:15	12/16/16
L1641090-34	B-2016-11-11-11.5	SOIL	RINGWOOD, NJ	12/15/16 13:30	12/16/16
L1641090-35	B-2016-12-5.5-6	SOIL	RINGWOOD, NJ	12/15/16 11:40	12/16/16
L1641090-36	B-2016-12-4-4.5	SOIL	RINGWOOD, NJ	12/15/16 11:30	12/16/16
L1641090-37	B-2016-13-5-5.5	SOIL	RINGWOOD, NJ	12/14/16 13:15	12/16/16
L1641090-38	B-2016-13-10-10.5	SOIL	RINGWOOD, NJ	12/14/16 14:00	12/16/16
L1641090-39	B-2016-13-15-15.5	SOIL	RINGWOOD, NJ	12/14/16 14:20	12/16/16
L1641090-40	B-2016-14-4-4.5	SOIL	RINGWOOD, NJ	12/15/16 12:45	12/16/16
L1641090-41	B-2016-14-10-10.5	SOIL	RINGWOOD, NJ	12/15/16 13:00	12/16/16
L1641090-42	DUP-1	SOIL	RINGWOOD, NJ	12/14/16 12:00	12/16/16
L1641090-43	DUP-2	SOIL	RINGWOOD, NJ	12/15/16 12:00	12/16/16

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

**NJ DEP Data of Known Quality Protocols
 Conformance/Non-Conformance
 Summary Questionnaire**

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the NJDEP Data of Known Quality performance standards?	YES
1a	Were the method specified handling, preservation, and holding time requirements met?	YES
1b	EPH Method: Was the EPH Method conducted without significant modifications (see Section 11.3 of respective DKQ methods)?	N/A
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	YES
3	Were all samples received at an appropriate temperature ($4 \pm 2^{\circ} \text{C}$)?	YES
4	Were all QA/QC performance criteria specified in the NJDEP DKQP standards achieved?	NO
5a	Were reporting limits specified or referenced on the chain-of-custody or communicated to the laboratory prior to sample receipt?	NO
5b	Were these reporting limits met?	N/A
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the DKQP documents and/or site-specific QAPP?	NO
7	Are project-specific matrix spikes and/or laboratory duplicates included in this data set?	NO

Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1a or #1b is "No", the data package does not meet the requirements for "Data of Known Quality".

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Case Narrative (continued)

Report Submission

This report replaces the report issued January, 3 2017. Samples L1641090-38 and -39 client ID's have been corrected.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

DKQP Related Narratives

Report Submission

In reference to question 5a:

Reporting limits were not specified.

Semivolatile Organics by SIM

In reference to question 6:

At the client's request, all submitted samples were not analyzed for the full DKQP list of constituents identified in the method specific analyte list presented in the DKQP documents.


In reference to question 4:

Samples L1641090-04, -06, -07, -11, -13, -14, -15, -16, -17, -18, -19, -21, -22, -24, -29, -30, -31, -32, and -37: One or more surrogates failed to meet the DKQP recovery limits. Please refer to the sample results and/or QC section of the report for specific details.

WG963086-1/-2/-3, WG963089-1/-2, WG963107-1/-2 and -3: One or more surrogates failed to meet the DKQP recovery limits. Please refer to the sample results and/or QC section of the report for specific details.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Susan O'Neil

Title: Technical Director/Representative

Date: 01/09/17

ORGANICS

SEMIVOLATILES

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-01
 Client ID: B-2016-1-5-5.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 03:26
 Analyst: SF
 Percent Solids: 86%

Date Collected: 12/13/16 14:00
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
-----------	--------	-----------	-------	----	-----	-----------------

1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00849	0.00425	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	104		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-02
 Client ID: B-2016-1-9-9.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 04:12
 Analyst: SF
 Percent Solids: 87%

Date Collected: 12/13/16 14:15
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00857	0.00428	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	100		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-03
 Client ID: B-2016-1-13.5-14
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 04:59
 Analyst: SF
 Percent Solids: 79%

Date Collected: 12/13/16 14:30
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00873	0.00436	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	96		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-04
 Client ID: B-2016-1-20-20.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 05:45
 Analyst: SF
 Percent Solids: 89%

Date Collected: 12/14/16 09:45
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00815	0.00408	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	115	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-05
 Client ID: B-2016-2-4.5-5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 06:31
 Analyst: SF
 Percent Solids: 95%

Date Collected: 12/13/16 15:20
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00762	0.00381	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	107		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-06
 Client ID: B-2016-2-11-11.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 07:18
 Analyst: SF
 Percent Solids: 86%

Date Collected: 12/13/16 15:35
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00789	0.00395	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	113	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-07
 Client ID: B-2016-2-16.5-17
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 08:04
 Analyst: SF
 Percent Solids: 87%

Date Collected: 12/13/16 16:15
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00778	0.00389	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	112	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-08
 Client ID: B-2016-2-21.5-22
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 08:50
 Analyst: SF
 Percent Solids: 76%

Date Collected: 12/14/16 08:00
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab						
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1,4-Dioxane	ND		mg/kg	0.00981	0.00490	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	103		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-09
 Client ID: B-2016-3-5.5-6
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 09:37
 Analyst: SF
 Percent Solids: 85%

Date Collected: 12/14/16 11:05
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab						
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1,4-Dioxane	ND		mg/kg	0.00865	0.00432	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	100		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-10
 Client ID: B-2016-3-9.5-10
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 10:23
 Analyst: SF
 Percent Solids: 88%

Date Collected: 12/14/16 11:15
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab						
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1,4-Dioxane	ND		mg/kg	0.00881	0.00441	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	110		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-11
 Client ID: B-2016-3-14-14.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 11:09
 Analyst: SF
 Percent Solids: 78%

Date Collected: 12/14/16 11:55
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00996	0.00498	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	124	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-12
 Client ID: B-2016-4-8.5-9
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 11:55
 Analyst: SF
 Percent Solids: 83%

Date Collected: 12/13/16 11:20
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00819	0.00410	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	105		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-13
 Client ID: B-2016-4-11.0-11.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 14:09
 Analyst: SF
 Percent Solids: 89%

Date Collected: 12/13/16 11:30
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00863	0.00431	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	126	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-14
 Client ID: B-2016-4-15-15.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 14:55
 Analyst: SF
 Percent Solids: 88%

Date Collected: 12/13/16 12:00
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00881	0.00440	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	129	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-15
 Client ID: B-2016-4-20-20.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 15:42
 Analyst: SF
 Percent Solids: 89%

Date Collected: 12/13/16 12:20
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab						
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1,4-Dioxane	ND		mg/kg	0.00819	0.00409	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	137	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-16
 Client ID: B-2016-4-23.5-24
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/30/16 16:28
 Analyst: SF
 Percent Solids: 84%

Date Collected: 12/13/16 12:30
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00817	0.00409	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	125	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-17
 Client ID: B-2016-5-.5-1
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 04:13
 Analyst: WR
 Percent Solids: 85%

Date Collected: 12/14/16 10:15
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00844	0.00422	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	137	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-18
 Client ID: B-2016-5-11-11.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 04:59
 Analyst: WR
 Percent Solids: 88%

Date Collected: 12/14/16 10:25
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab						
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1,4-Dioxane	ND		mg/kg	0.00809	0.00405	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	113	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-19
 Client ID: B-2016-5-15-15.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 05:45
 Analyst: WR
 Percent Solids: 89%

Date Collected: 12/14/16 10:45
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab						
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1,4-Dioxane	ND		mg/kg	0.00831	0.00415	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	113	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-20
 Client ID: B-2016-6-4.5-5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 06:31
 Analyst: WR
 Percent Solids: 90%

Date Collected: 12/15/16 10:10
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab						
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1,4-Dioxane	ND		mg/kg	0.00808	0.00404	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	109		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-21
 Client ID: B-2016-6-1.5-2
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 07:17
 Analyst: WR
 Percent Solids: 86%

Date Collected: 12/15/16 10:00
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab						
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1,4-Dioxane	ND		mg/kg	0.00814	0.00407	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	113	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-22
 Client ID: B-2016-7-9-9.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 08:03
 Analyst: WR
 Percent Solids: 91%

Date Collected: 12/15/16 08:40
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00785	0.00392	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	112	Q	15-110



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-23
 Client ID: B-2016-7-11.5-12
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 08:49
 Analyst: WR
 Percent Solids: 76%

Date Collected: 12/15/16 08:55
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00957	0.00478	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	108		15-110



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-24
 Client ID: B-2016-8-11-11.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 09:35
 Analyst: WR
 Percent Solids: 89%

Date Collected: 12/15/16 09:45
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab						
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1,4-Dioxane	ND		mg/kg	0.00883	0.00441	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	118	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-25
 Client ID: B-2016-8-9-9.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 10:21
 Analyst: WR
 Percent Solids: 91%

Date Collected: 12/15/16 09:35
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab						
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1,4-Dioxane	ND		mg/kg	0.00801	0.00400	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	104		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-26
 Client ID: B-2016-8-4.5-5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 12:34
 Analyst: WR
 Percent Solids: 89%

Date Collected: 12/15/16 09:20
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00832	0.00416	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	105		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-27
 Client ID: B-2016-9-6-6.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 13:21
 Analyst: WR
 Percent Solids: 92%

Date Collected: 12/15/16 10:55
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00800	0.00400	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	102		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-28
 Client ID: B-2016-9-2-2.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 14:07
 Analyst: WR
 Percent Solids: 90%

Date Collected: 12/15/16 10:40
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00775	0.00388	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	107		15-110



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-29
 Client ID: B-2016-10-4-4.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 14:53
 Analyst: WR
 Percent Solids: 90%

Date Collected: 12/14/16 14:40
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00793	0.00397	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	111	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-30
 Client ID: B-2016-10-9-9.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 15:40
 Analyst: WR
 Percent Solids: 91%

Date Collected: 12/14/16 14:45
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00822	0.00411	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	113	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-31
 Client ID: B-2016-10-11.5-12
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 16:26
 Analyst: WR
 Percent Solids: 89%

Date Collected: 12/14/16 14:50
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab						
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1,4-Dioxane	ND		mg/kg	0.00887	0.00444	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	113	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-32
 Client ID: B-2016-10-20-21.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 17:12
 Analyst: WR
 Percent Solids: 89%

Date Collected: 12/14/16 15:40
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab						
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1,4-Dioxane	ND		mg/kg	0.00868	0.00434	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	116	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-33
 Client ID: B-2016-11-5-5.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 17:58
 Analyst: WR
 Percent Solids: 88%

Date Collected: 12/15/16 13:15
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab						
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1,4-Dioxane	ND		mg/kg	0.00906	0.00453	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	106		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-34
 Client ID: B-2016-11-11-11.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 18:44
 Analyst: WR
 Percent Solids: 91%

Date Collected: 12/15/16 13:30
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00825	0.00412	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	96		15-110



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-35
 Client ID: B-2016-12-5.5-6
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 19:31
 Analyst: WR
 Percent Solids: 89%

Date Collected: 12/15/16 11:40
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00881	0.00441	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	110		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-36
 Client ID: B-2016-12-4-4.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/24/16 20:17
 Analyst: WR
 Percent Solids: 81%

Date Collected: 12/15/16 11:30
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00873	0.00436	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	110		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-37
 Client ID: B-2016-13-5-5.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/25/16 00:47
 Analyst: WR
 Percent Solids: 86%

Date Collected: 12/14/16 13:15
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00787	0.00393	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	112	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-38
 Client ID: B-2016-13-10-10.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/25/16 01:33
 Analyst: WR
 Percent Solids: 83%

Date Collected: 12/14/16 14:00
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00835	0.00417	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	98		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-39
 Client ID: B-2016-13-15-15.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/25/16 02:19
 Analyst: WR
 Percent Solids: 91%

Date Collected: 12/14/16 14:20
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00805	0.00403	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	106		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-40
 Client ID: B-2016-14-4-4.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/25/16 03:05
 Analyst: WR
 Percent Solids: 85%

Date Collected: 12/15/16 12:45
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00825	0.00412	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	97		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-41
 Client ID: B-2016-14-10-10.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/25/16 03:51
 Analyst: WR
 Percent Solids: 89%

Date Collected: 12/15/16 13:00
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00800	0.00400	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	96		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-42
 Client ID: DUP-1
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/25/16 04:37
 Analyst: WR
 Percent Solids: 90%

Date Collected: 12/14/16 12:00
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00760	0.00380	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	105		15-110



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-43
 Client ID: DUP-2
 Sample Location: RINGWOOD, NJ
 Matrix: Soil
 Analytical Method: 1,8270D-SIM
 Analytical Date: 12/25/16 05:23
 Analyst: WR
 Percent Solids: 92%

Date Collected: 12/15/16 12:00
 Date Received: 12/16/16
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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1,4 Dioxane by 8270D-SIM - Mansfield Lab

1,4-Dioxane	ND		mg/kg	0.00778	0.00389	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	107		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 01:55
Analyst: WR

Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 17-36 Batch: WG963086-1					
1,4-Dioxane	ND		mg/kg	0.00800	0.00400

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	121	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 22:29
Analyst: WR

Extraction Method: EPA 3570
Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 37-43 Batch: WG963089-1					
1,4-Dioxane	ND		mg/kg	0.00800	0.00400

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	111	Q	15-110

Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

**Method Blank Analysis
Batch Quality Control**

Analytical Method: 1,8270D-SIM
 Analytical Date: 12/29/16 09:49
 Analyst: SF

Extraction Method: EPA 3570
 Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-16 Batch: WG963107-1					
1,4-Dioxane	ND		mg/kg	0.00800	0.00400

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	116	Q	15-110

Lab Control Sample Analysis Batch Quality Control

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 17-36 Batch: WG963086-2 WG963086-3								
1,4-Dioxane	97		103		40-140	6		30

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
1,4-Dioxane-d8	133	Q	135	Q	15-110

Lab Control Sample Analysis Batch Quality Control

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 37-43 Batch: WG963089-2 WG963089-3								
1,4-Dioxane	104		105		40-140	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	112	Q	100		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 01-16 Batch: WG963107-2 WG963107-3								
1,4-Dioxane	98		101		40-140	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	120	Q	124	Q	15-110

INORGANICS & MISCELLANEOUS

Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-01

Date Collected: 12/13/16 14:00

Client ID: B-2016-1-5-5.5

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	86.4		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-02
Client ID: B-2016-1-9-9.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 14:15
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	86.6		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-03
Client ID: B-2016-1-13.5-14
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 14:30
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	78.6		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-04
 Client ID: B-2016-1-20-20.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/14/16 09:45
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	88.7		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-05
Client ID: B-2016-2-4.5-5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 15:20
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	95.1		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-06
 Client ID: B-2016-2-11-11.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/13/16 15:35
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	85.9		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-07
 Client ID: B-2016-2-16.5-17
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/13/16 16:15
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	86.6		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-08
Client ID: B-2016-2-21.5-22
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 08:00
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	76.1		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-09

Date Collected: 12/14/16 11:05

Client ID: B-2016-3-5.5-6

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	85.2		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-10

Date Collected: 12/14/16 11:15

Client ID: B-2016-3-9.5-10

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	87.8		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-11
 Client ID: B-2016-3-14-14.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/14/16 11:55
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	77.8		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-12

Date Collected: 12/13/16 11:20

Client ID: B-2016-4-8.5-9

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	83.2		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-13
 Client ID: B-2016-4-11.0-11.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/13/16 11:30
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.0		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-14
 Client ID: B-2016-4-15-15.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/13/16 12:00
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	87.5		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-15
Client ID: B-2016-4-20-20.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 12:20
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.0		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-16
 Client ID: B-2016-4-23.5-24
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/13/16 12:30
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	83.8		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-17

Date Collected: 12/14/16 10:15

Client ID: B-2016-5-5-1

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	84.9		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-18

Date Collected: 12/14/16 10:25

Client ID: B-2016-5-11-11.5

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	88.1		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-19
 Client ID: B-2016-5-15-15.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/14/16 10:45
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.0		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-20

Date Collected: 12/15/16 10:10

Client ID: B-2016-6-4.5-5

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.0		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-21

Date Collected: 12/15/16 10:00

Client ID: B-2016-6-1.5-2

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	85.6		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-22

Date Collected: 12/15/16 08:40

Client ID: B-2016-7-9-9.5

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	91.0		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-23

Date Collected: 12/15/16 08:55

Client ID: B-2016-7-11.5-12

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	76.0		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-24
 Client ID: B-2016-8-11-11.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/15/16 09:45
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.0		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-25

Date Collected: 12/15/16 09:35

Client ID: B-2016-8-9-9.5

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.5		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-26
Client ID: B-2016-8-4.5-5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 09:20
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	88.5		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-27

Date Collected: 12/15/16 10:55

Client ID: B-2016-9-6-6.5

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	91.6		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-28

Date Collected: 12/15/16 10:40

Client ID: B-2016-9-2-2.5

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.2		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-29

Date Collected: 12/14/16 14:40

Client ID: B-2016-10-4-4.5

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.7		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-30

Date Collected: 12/14/16 14:45

Client ID: B-2016-10-9-9.5

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.8		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-31
 Client ID: B-2016-10-11.5-12
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/14/16 14:50
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.1		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-32
 Client ID: B-2016-10-20-21.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/14/16 15:40
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	88.8		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-33

Date Collected: 12/15/16 13:15

Client ID: B-2016-11-5-5.5

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	87.6		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-34
 Client ID: B-2016-11-11-11.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/15/16 13:30
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.8		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-35

Date Collected: 12/15/16 11:40

Client ID: B-2016-12-5.5-6

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.0		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-36
Client ID: B-2016-12-4-4.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 11:30
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	80.7		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-37

Date Collected: 12/14/16 13:15

Client ID: B-2016-13-5-5.5

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	86.0		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-38
 Client ID: B-2016-13-10-10.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/14/16 14:00
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	83.2		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-39
 Client ID: B-2016-13-15-15.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/14/16 14:20
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	91.3		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-40

Date Collected: 12/15/16 12:45

Client ID: B-2016-14-4-4.5

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	84.8		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-41
 Client ID: B-2016-14-10-10.5
 Sample Location: RINGWOOD, NJ
 Matrix: Soil

Date Collected: 12/15/16 13:00
 Date Received: 12/16/16
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.3		%	0.100	0.100	1	-	12/22/16 02:53	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-42

Date Collected: 12/14/16 12:00

Client ID: DUP-1

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.0		%	0.100	0.100	1	-	12/22/16 02:53	121,2540G	SP



Project Name: FORD-RINGWOOD

Lab Number: L1641090

Project Number: 140802-018

Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-43

Date Collected: 12/15/16 12:00

Client ID: DUP-2

Date Received: 12/16/16

Sample Location: RINGWOOD, NJ

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	92.0		%	0.100	0.100	1	-	12/22/16 02:53	121,2540G	SP



Lab Duplicate Analysis

Batch Quality Control

Project Name: FORD-RINGWOOD

Project Number: 140802-018

Lab Number: L1641090

Report Date: 01/09/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG963961-1 QC Sample: L1641090-01 Client ID: B-2016-1-5-5.5						
Solids, Total	86.4	88.0	%	2		10
General Chemistry - Mansfield Lab Associated sample(s): 21-40 QC Batch ID: WG963964-1 QC Sample: L1641090-21 Client ID: B-2016-6-1.5-2						
Solids, Total	85.6	87.2	%	2		10
General Chemistry - Mansfield Lab Associated sample(s): 41-43 QC Batch ID: WG963965-1 QC Sample: L1641090-41 Client ID: B-2016-14-10-10.5						
Solids, Total	89.3	89.4	%	0		10

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Sample Receipt and Container Information

Were project specific reporting limits specified? NO

Cooler Information Custody Seal

Cooler

A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1641090-01A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-02A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-03A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-04A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-05A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-06A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-07A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-08A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-09A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-10A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-11A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-12A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-13A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-14A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-15A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-16A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-17A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-18A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-19A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-20A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-21A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)

*Values in parentheses indicate holding time in days

Project Name: FORD-RINGWOOD

Project Number: 140802-018

Lab Number: L1641090

Report Date: 01/09/17

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1641090-22A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-23A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-24A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-25A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-26A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-27A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-28A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-29A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-30A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-31A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-32A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-33A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-34A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-35A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-36A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-37A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-38A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-39A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-40A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-41A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-42A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-43A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)

*Values in parentheses indicate holding time in days



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Report Format: DU Report with 'J' Qualifiers



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Data Qualifiers

- reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
 - D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
 - E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
 - G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
 - H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
 - I** - The lower value for the two columns has been reported due to obvious interference.
 - M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
 - NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
 - P** - The RPD between the results for the two columns exceeds the method-specified criteria.
 - Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
 - R** - Analytical results are from sample re-analysis.
 - RE** - Analytical results are from sample re-extraction.
 - S** - Analytical results are from modified screening analysis.
 - J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
 - ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: NPW and SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

EPA 9012B: NPW: Total Cyanide

EPA 9050A: NPW: Specific Conductance

SM3500: NPW: Ferrous Iron

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.

SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility

SM 2540D: TSS

EPA 3005A NPW

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: **EPA 3050B**

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1: Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

Mansfield Facility:

Drinking Water

EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg.**

Non-Potable Water


EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

 NEW JERSEY CHAIN OF CUSTODY Westborough, MA 01581 8 Walkup Dr. TEL: 508-898-9220 FAX: 508-898-9193	Mansfield, MA 02048 320 Forbes Blvd TEL: 508-822-9300 FAX: 508-822-3288	Service Centers Mahwah, NJ 07430: 35 Whitney Rd, Suite 5 Albany, NY 12205: 14 Walker Way Tonawanda, NY 14150: 275 Cooper Ave, Suite 105	Page 1 of 5	Date Rec'd in Lab 12/17/16	ALPHA Job # 41641090					
		Project Information Project Name: Ford-Ringwood Project Location: Ringwood, NJ Project # 140802-018 (Use Project name as Project #) <input type="checkbox"/>			Deliverables <input checked="" type="checkbox"/> NJ Full / Reduced <input type="checkbox"/> EQuIS (1 File) <input type="checkbox"/> EQuIS (4 File) <input type="checkbox"/> Other					
Client Information Client: Cornerstone Address: 100 Crystal Run Rd Middle town NY, 10941 Phone: 845-695-0252 Fax: Email: Tim.Rooper@cornerstoneeg.com		Project Manager: Tim Rooper ALPHAQuote #: Turn-Around Time Standard <input checked="" type="checkbox"/> Due Date: Rush (only if pre approved) <input type="checkbox"/> # of Days:		Billing Information <input checked="" type="checkbox"/> Same as Client Info PO # Regulatory Requirement <input type="checkbox"/> SRS Residential/Non Residential <input type="checkbox"/> SRS Impact to Groundwater <input type="checkbox"/> NJ Ground Water Quality Standards <input type="checkbox"/> NJ IGW SPLP Leachate Criteria <input type="checkbox"/> Other						
These samples have been previously analyzed by Alpha <input type="checkbox"/>			ANALYSIS		Sample Filtration <input type="checkbox"/> Done <input type="checkbox"/> Lab to do <input type="checkbox"/> Lab to do (Please Specify below)					
For EPH, selection is REQUIRED: <input type="checkbox"/> Category 1 <input type="checkbox"/> Category 2		For VOC, selection is REQUIRED: <input type="checkbox"/> 1,4-Dioxane <input type="checkbox"/> 8011		Other project specific requirements/comments: Please specify Metals or TAL.		Total Bottles				
ALPHA Lab ID (Lab Use Only)		Sample ID		Collection Date Time			Sample Matrix	Sampler's Initials	Sample Specific Comments	
41090-01		B-2016-1-5-5.5		12/13/16 14:00			S	JG	X	
-02		B-2016-1-9-9.5		12/13/16 14:15			S	JG	X	
-03		B-2016-1-13.5-14		12/13/16 14:30			S	JG	X	
-04		B-2016-1-20-20.5		12/14/16 9:45			S	JG	X	
-05		B-2016-2-4.5-5		12/13/16 15:20			S	JG	X	
-06		B-2016-2-11-11.5		12/13/16 15:35			S	JG	X	
-07		B-2016-2-16.5-17		12/13/16 16:15			S	JG	X	
-08		B-2016-2-21.5-22		12/14/16 8:00			S	JG	X	
-09		B-2016-3-5.5-6		12/14/16 11:05		S	JG	X		
-10		B-2016-3-9.5-10		12/14/16 11:15		S	JG	X		
Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ K/E = Zn Ac/NaOH O = Other		Container Code P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle		Westboro: Certification No: MA935 Mansfield: Certification No: MA015		Container Type A Preservative A		Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)		
Relinquished By: John DeLuca Tom Tober Tom Tober Tom Tober		Date/Time 12/16/16 13:30 12/16/16 16:17 12/16/16 22:50 12/17/16 02:35		Received By: Tom Tober Tom Tober Tom Tober Tom Tober		Date/Time 12/16/16 13:30 12/16/16 18:00 12/16/16 22:50 12/17/16 02:35				



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FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers

Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

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of 5

Date Rec'd
in Lab 12/17/16

ALPHA Job #
L1641090

Client Information		Project Information				Deliverables				Billing Information				
Client: <i>Cornestone</i>		Project Name: <i>Ford-Ringwood</i>				<input checked="" type="checkbox"/> NJ Full / Reduced				<input checked="" type="checkbox"/> Same as Client Info				
Address: <i>100 Crystal Run Rd</i>		Project Location: <i>Ringwood, NJ</i>				<input type="checkbox"/> EQuIS (1 File) <input type="checkbox"/> EQuIS (4 File)				PO #				
Middletown, NY 10941		Project # <i>140802-018</i>				<input type="checkbox"/> Other								
Phone: <i>845-695-0252</i>		(Use Project name as Project #) <input type="checkbox"/>				Regulatory Requirement				Site Information				
Fax:		Project Manager: <i>Tim Ropper</i>				<input type="checkbox"/> SRS Residential/Non Residential				Is this site impacted by Petroleum? Yes <input type="checkbox"/>				
Email: <i>Tim.Ropper@cornestone.com</i>		ALPHAQuote #:				<input type="checkbox"/> SRS Impact to Groundwater				Petroleum Product:				
		Turn-Around Time				<input type="checkbox"/> NJ Ground Water Quality Standards								
		Standard <input checked="" type="checkbox"/>		Due Date:		<input type="checkbox"/> NJ IGW SPLP Leachate Criteria								
		Rush (only if pre approved) <input type="checkbox"/>		# of Days:		<input type="checkbox"/> Other								
These samples have been previously analyzed by Alpha <input type="checkbox"/>						ANALYSIS						Sample Filtration		T o t a l B o t t l e
For EPH, selection is REQUIRED:		For VOC, selection is REQUIRED:		Other project specific requirements/comments: Please specify Metals or TAL.						<input type="checkbox"/> Done				
<input type="checkbox"/> Category 1 <input type="checkbox"/> Category 2		<input type="checkbox"/> 1,4-Dioxane <input type="checkbox"/> 8011								<input type="checkbox"/> Lab to do <input type="checkbox"/> Lab to do (Please Specify below)				
ALPHA Lab ID (Lab Use Only)		Sample ID		Collection		Sample Matrix	Sampler's Initials					Sample Specific Comments		
				Date	Time									
<i>41090-11</i>		<i>B-2016-3-14-14.5</i>		<i>12/14/16</i>	<i>11:55</i>	<i>S</i>	<i>JG</i>							
<i>-17</i>		<i>B-2016-4-8.5-9</i>		<i>12/13/16</i>	<i>11:20</i>	<i>S</i>	<i>JG</i>							
<i>-13</i>		<i>B-2016-4-11.0-11.5</i>		<i>12/13/16</i>	<i>11:38</i>	<i>S</i>	<i>JG</i>							
<i>-14</i>		<i>B-2016-4-15-15.5</i>		<i>12/13/16</i>	<i>12:00</i>	<i>S</i>	<i>JG</i>							
<i>-15</i>		<i>B-2016-4-20-20.5</i>		<i>12/13/16</i>	<i>12:20</i>	<i>S</i>	<i>JG</i>							
<i>-16</i>		<i>B-2016-4-23.5-24</i>		<i>12/13/16</i>	<i>12:30</i>	<i>S</i>	<i>JG</i>							
<i>-17</i>		<i>B-2016-5-0.5-1</i>		<i>12/14/16</i>	<i>10:15</i>	<i>S</i>	<i>JG</i>							
<i>-18</i>		<i>B-2016-5-11-11.5</i>		<i>12/14/16</i>	<i>10:25</i>	<i>S</i>	<i>JG</i>							
<i>-19</i>		<i>B-2016-5-15-15.5</i>		<i>12/14/16</i>	<i>10:45</i>	<i>S</i>	<i>JG</i>							
<i>-20</i>		<i>B-2016-6-4.5-5</i>		<i>12/15/16</i>	<i>10:10</i>	<i>S</i>	<i>JG</i>							
Preservative Code:		Container Code		Westboro: Certification No: MA935				Container Type				Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)		
A = None		P = Plastic		Mansfield: Certification No: MA015				A						
B = HCl		A = Amber Glass						Preservative		A				
C = HNO ₃		V = Vial												
D = H ₂ SO ₄		G = Glass												
E = NaOH		B = Bacteria Cup												
F = MeOH		C = Cube												
G = NaHSO ₄		O = Other												
H = Na ₂ S ₂ O ₃		E = Encore												
K/E = Zn Ac/NaOH		D = BOD Bottle												
O = Other														
				Relinquished By:		Date/Time		Received By:		Date/Time				
		<i>John Dini</i>		<i>12/16/16 13:30</i>		<i>Scott Apple</i>		<i>12/16/16 13:30</i>						
		<i>Tom Ropper</i>		<i>12-16-16 16:17</i>		<i>Tom Ropper</i>		<i>12-16-16 18:00</i>						
		<i>Tom Ropper</i>		<i>12-16-16 22:50</i>		<i>Tom Ropper</i>		<i>12/16/16 22:50</i>						
		<i>JJ</i>		<i>12/17/16 12:35</i>		<i>Tom Ropper</i>		<i>12/17/16 12:35</i>						



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 Albany, NY 12205: 14 Walker Way
 Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

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 of 5

Date Rec'd in Lab 12/17/16

ALPHA Job # 41090

Project Information		Deliverables		Billing Information	
Project Name: <u>Ford-Ringwood</u>		<input checked="" type="checkbox"/> NJ Full / Reduced		<input checked="" type="checkbox"/> Same as Client Info	
Project Location: <u>Ringwood, NJ</u>		<input type="checkbox"/> EQuIS (1 File) <input type="checkbox"/> EQuIS (4 File)		PO #	
Project # <u>140802-018</u>		<input type="checkbox"/> Other			
Client: <u>Cornstone</u>		Regulatory Requirement		Site Information	
Address: <u>100 Crystal Run Rd</u>		<input type="checkbox"/> SRS Residential/Non Residential		Is this site impacted by Petroleum? Yes <input type="checkbox"/>	
<u>Middletown, NY 10941</u>		<input type="checkbox"/> SRS Impact to Groundwater		Petroleum Product:	
Phone: <u>845-695-0252</u>		<input type="checkbox"/> NJ Ground Water Quality Standards			
Fax:		<input type="checkbox"/> NJ IGW SPL Leachate Criteria			
Email: <u>Tim.Roepert@cornstone.com</u>		<input type="checkbox"/> Other			
Turn-Around Time					
Standard <input checked="" type="checkbox"/> Due Date:					
Rush (only if pre approved) <input type="checkbox"/> # of Days:					

These samples have been previously analyzed by Alpha

For EPH, selection is REQUIRED:	For VOC, selection is REQUIRED:	Other project specific requirements/comments:
<input type="checkbox"/> Category 1	<input type="checkbox"/> 1,4-Dioxane	Please specify Metals or TAL.
<input type="checkbox"/> Category 2	<input type="checkbox"/> 8011	

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS	Sample Filtration		Sample Specific Comments	Total Bottle
		Date	Time				<input type="checkbox"/> Done	<input type="checkbox"/> Lab to do Preservation		
41090-21	B-2016-6-15-2	12/15/16	10:00	S	JG	X				
-22	B-2016-7-9-9.5	12/15/16	8:40	S	JG	X				
-23	B-2016-7-115-12	12/15/16	8:55	S	JG	X				
-24	B-2016-8-11-115	12/15/16	9:45	S	JG	X				
-25	B-2016-8-9-9.5	12/15/16	9:35	S	JG	X				
-26	B-2016-8-45-5	12/15/16	9:20	S	JG	X				
-27	B-2016-9-6-6.5	12/15/16	10:55	S	JG	X				
-28	B-2016-9-2-2.5	12/15/16	10:40	S	JG	X				
-29	B-2016-10-4-4.5	12/14/16	14:40	S	JG	X				
-30	B-2016-10-9-9.5	12/14/16	14:45	S	JG	X				

Preservative Code: A = None B = HCl C = HNO3 D = H2SO4 E = NaOH F = MeOH G = NaHSO4 H = Na2S2O3 K/E = Zn Ac/NaOH O = Other	Container Code P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle	Westboro: Certification No: MA935	Container Type Preservative					Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)
		Mansfield: Certification No: MA015						
		Relinquished By:	Date/Time	Received By:	Date/Time			
		<i>John Wilkin</i>	12/16/16 13:30	<i>Tom Tabak</i>	12/16/16 13:30			
		<i>Tom Tabak</i>	12/16/16 16:17	<i>Tom Tabak</i>	12/16/16 18:00			
		<i>Tom Tabak</i>	12/16/16 22:50	<i>Tom Tabak</i>	12/16/16 20:00			
		<i>J. Jojura</i>	12/17/16 02:35	<i>Bob Burt</i>	12/17/16 02:35			



NEW JERSEY CHAIN OF CUSTODY

Service Centers
 Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
 Albany, NY 12205: 14 Walker Way
 Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Westborough, MA 01581
 8 Walkup Dr.
 TEL: 508-898-9220
 FAX: 508-898-9193

Mansfield, MA 02048
 320 Forbes Blvd
 TEL: 508-822-9300
 FAX: 508-822-3288

Page 4
 of 5

Date Rec'd in Lab 12/17/16

ALPHA Job # L1641090

Client Information		Project Information		Deliverables		Billing Information	
Client: <u>Cornerstone</u>		Project Name: <u>Ford-Ringwood</u>		<input checked="" type="checkbox"/> NJ Full / Reduced		<input checked="" type="checkbox"/> Same as Client Info	
Address: <u>100 Crystal Run Rd</u> <u>Middletown, NJ 10941</u>		Project Location: <u>Ringwood, NJ</u>		<input type="checkbox"/> EQUIS (1 File) <input type="checkbox"/> EQUIS (4 File)		PO # <u>L1641096</u>	
Phone: <u>845-645-0252</u>		Project # <u>140802-018</u>		<input type="checkbox"/> Other			
Fax:		(Use Project name as Project #) <input type="checkbox"/>		Regulatory Requirement		Site Information	
Email: <u>Tim.Rooper@cornerstone.com</u>		Project Manager: <u>Tim Rooper</u>		<input type="checkbox"/> SRS Residential/Non Residential		Is this site impacted by Petroleum? Yes <input type="checkbox"/>	
		ALPHAQuote #:		<input type="checkbox"/> SRS Impact to Groundwater		Petroleum Product:	
		Turn-Around Time		<input type="checkbox"/> NJ Ground Water Quality Standards			
		Standard <input checked="" type="checkbox"/> Due Date:		<input type="checkbox"/> NJ IGW SPLP Leachate Criteria			
		Rush (only if pre approved) <input type="checkbox"/> # of Days:		<input type="checkbox"/> Other			


These samples have been previously analyzed by Alpha

For EPH, selection is REQUIRED:	For VOC, selection is REQUIRED:	Other project specific requirements/comments:	ANALYSIS	Sample Filtration	Total Bottle
<input type="checkbox"/> Category 1 <input type="checkbox"/> Category 2	<input type="checkbox"/> 1,4-Dioxane <input type="checkbox"/> 8011	Please specify Metals or TAL.		<input type="checkbox"/> Done <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please Specify below)	

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	A2-13-Svc C - 8270 A2-13-PAH-827034											Sample Specific Comments				
		Date	Time																		
41090-31	B-2016-10-11.5-12	12/14/16	14:50	S	JG	X															
-32	B-2016-10-20-21.5	12/14/16	15:40	S	JG	X															
-33	B-2016-11-5-5.5	12/15/16	13:15	S	JG	X															
-34	B-2016-11-11-11.5	12/15/16	13:30	S	JG	X															
-35	B-2016-12-5.5-6	12/15/16	11:40	S	JG	X															
-36	B-2016-12-4-4.5	12/15/16	11:30	S	JG	X															
-37	B-2016-13-5-5.5	12/14/16	13:15	S	JG	X															
-38	B-2016-13-10-10.5	12/14/16	14:00	S	JG	X															
-39	B-2016-13-15-15.5	12/14/16	14:20	S	JG	X															
-40	B-2016-14-4-4.5	12/15/16	12:45	S	JG	X															

Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ K/E = Zn Ac/NaOH O = Other	Container Code P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle	Westboro: Certification No: MA935 Mansfield: Certification No: MA015	Container Type A	Preservative A											Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)
---	--	---	---------------------	-------------------	--	--	--	--	--	--	--	--	--	--	--

Relinquished By:	Date/Time	Received By:	Date/Time
<i>John Eileen</i>	12/16/16 13:30	<i>Tom Taylor</i>	12/16/16 13:50
<i>Tom Taylor</i>	12/16/16 16:17	<i>Tom Taylor</i>	12-16-16 1800
<i>Tom Taylor</i>	12-16-16 22:50	<i>Tom Taylor</i>	12/16/16 20:50
<i>Tom Taylor</i>	12/17/16 02:35	<i>Tom Taylor</i>	12/17/16 02:35

 NEW JERSEY CHAIN OF CUSTODY	Service Centers Mahwah, NJ 07430: 35 Whitney Rd, Suite 5 Albany, NY 12205: 14 Walker Way Tonawanda, NY 14150: 275 Cooper Ave, Suite 105	Page <u>5</u> of <u>5</u>	Date Rec'd in Lab <u>12/17/16</u>	ALPHA Job # <u>L1641090</u>	
	Westborough, MA 01581 8 Walkup Dr. TEL: 508-898-9220 FAX: 508-898-9193	Mansfield, MA 02048 320 Forbes Blvd TEL: 508-822-9300 FAX: 508-822-3288	Project Information Project Name: <u>Ford-Ringwood</u> Project Location: <u>Ringwood, NJ</u> Project # <u>140802-018</u> (Use Project name as Project #) <input type="checkbox"/>		Deliverables <input checked="" type="checkbox"/> NJ Full / Reduced <input type="checkbox"/> EQUIS (1 File) <input type="checkbox"/> EQUIS (4 File) <input type="checkbox"/> Other
Client Information Client: <u>Cornis Stone</u> Address: <u>100 Crystal Run Rd</u> <u>Middle town, NY 10941</u> Phone: <u>845-695-0252</u> Fax: _____ Email: <u>Tim.Rooper@cornisstone.com</u>		Regulatory Requirement <input type="checkbox"/> SRS Residential/Non Residential <input type="checkbox"/> SRS Impact to Groundwater <input type="checkbox"/> NJ Ground Water Quality Standards <input type="checkbox"/> NJ IGW SPLP Leachate Criteria <input type="checkbox"/> Other		Billing Information <input checked="" type="checkbox"/> Same as Client Info PO # _____	
Turn-Around Time Standard <input checked="" type="checkbox"/> Due Date: _____ Rush (only if pre approved) <input type="checkbox"/> # of Days: _____		Site Information Is this site impacted by Petroleum? Yes <input type="checkbox"/> Petroleum Product: _____			
These samples have been previously analyzed by Alpha <input type="checkbox"/>		ANALYSIS		Sample Filtration <input type="checkbox"/> Done <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please Specify below)	
For EPH, selection is REQUIRED: <input type="checkbox"/> Category 1 <input type="checkbox"/> Category 2	For VOC, selection is REQUIRED: <input type="checkbox"/> 1,4-Dioxane <input type="checkbox"/> 8011	Other project specific requirements/comments: Please specify Metals or TAL.		Total Bottle	
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date Time	Sample Matrix Sampler's Initials		Sample Specific Comments
<u>41090-41</u>	<u>B-2016-14-10-10.5</u>	<u>12/15/16 13:00</u>	<u>S SG</u>		<u>X</u>
<u>-42</u>	<u>Dup-1</u>	<u>12/14/16 12:00</u>	<u>S SG</u>		<u>X</u>
<u>-43</u>	<u>Dup-2</u>	<u>12/15/16 12:00</u>	<u>S SG</u>		<u>X</u>

Preservative Code:
 A = None
 B = HCl
 C = HNO₃
 D = H₂SO₄
 E = NaOH
 F = MeOH
 G = NaHSO₄
 H = Na₂S₂O₃
 K/E = Zn Ac/NaOH
 O = Other

Container Code
 P = Plastic
 A = Amber Glass
 V = Vial
 G = Glass
 B = Bacteria Cup
 C = Cube
 O = Other
 E = Encore
 D = BOD Bottle

Westboro: Certification No: MA935
 Mansfield: Certification No: MA015

Container Type A
 Preservative A

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Relinquished By:	Date/Time	Received By:	Date/Time
<u>Tom Rooper</u>	<u>13:30 12/16/16</u>	<u>Tom Rooper</u>	<u>12/16/16 13:30</u>
<u>Tom Rooper</u>	<u>12/16/16 16:17</u>	<u>Tom Rooper</u>	<u>12/16/16 1800</u>
<u>Tom Rooper</u>	<u>12-16-16 2250</u>	<u>Tom Rooper</u>	<u>12/16/16 2226</u>
<u>J.J. Johnson</u>	<u>12/17/16 12:35</u>	<u>Tom Rooper</u>	<u>12/17/16 12:35</u>



www.alphalab.com



Lab Number: L1641084

Client: Cornerstone/Cadena Co. joint acc

ATTN: Jim Tomalia

Project Name: FORD-RINGWOOD

Project Number: 140802-018

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Title Page - NJDEP

**ANALYTICAL DATA PACKAGE FOR THE
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
TRENTON NEW JERSEY 08625**

Agency/Division:		Bureau/Office:	
Project No: 140802-018		Contract No:	
Laboratory: Alpha Analytical		Laboratory Location: Westborough, Ma.	
		Laboratory Phone Number: (508) 898-9220	
SDG No: L1641084		NJDEP Certification #: MA015/MA935	
Date of First Sample Receipt: 12/16/2016		Date of Last Sample Receipt: 12/16/2016	
Agency Sample Number	Laboratory Sample Number	Sample Location	Date/Time of Collection
PW-1	L1641084-01	FORD-RINGWOOD	12/15/2016 07:30
PW-2	L1641084-02	FORD-RINGWOOD	12/15/2016 07:40

I certify that this data package is in compliance with the terms and conditions of this 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 submitted on disk or electronically has been authorized by the laboratory director or his/her designee, as verified by the following signature.

Technical Director/Representative (Typed) Sue ONeil	01/04/17
Technical Director/Representative (Signature) <i>Susan E. O'Neil</i>	

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Chain of Custody



**NEW JERSEY
CHAIN OF
CUSTODY**

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers

Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1

of 1

Date Rec'd
in Lab

12/17/16

ALPHA Job #

11691084

Project Information

Project Name: Ford - Ringwood

Project Location: Ringwood, NJ

Project # 140802-018

(Use Project name as Project #)

Project Manager: Tim. Roeper

ALPHAQuote #:

Turn-Around Time

Standard Due Date:
Rush (only if pre approved) # of Days:

Deliverables

NJ Full / Reduced
 EQuIS (1 File) EQuIS (4 File)
 Other

Billing Information

Same as Client Info
PO #

Client Information

Client: Ford - Ringwood (Cornston)

Address: Peters Mine Road
100 Crystal Run Rd, Middletown, NJ 10941

Phone: 845-695-0252

Fax:

Email: Tim.Roeper@cornstonnec.com

Regulatory Requirement

SRS Residential/Non Residential
 SRS Impact to Groundwater
 NJ Ground Water Quality Standards
 NJ IGW SPLP Leachate Criteria
 Other

Site Information

Is this site impacted by
Petroleum? Yes
Petroleum Product:

These samples have been previously analyzed by Alpha

ANALYSIS

For EPH, selection is
REQUIRED:

- Category 1
 Category 2

For VOC, selection
is REQUIRED:

- 1,4-Dioxane
 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

A2-145-SVEL-8270
A2-145-PAH-81054

Sample Filtration

- Done
 Lab to do
Preservation
 Lab to do

(Please Specify below)

Sample Specific Comments

Total Bottle

ALPHA Lab ID
(Lab Use Only)

Sample ID

Collection

Date Time

Sample
Matrix

Sampler's
Initials

41084-01
-02

PW-1
PW-2

12/15/16 7:30
12/15/16 7:40

Paint Waste
Paint Waste

JG
JG

X
X

Preservative Code:

- A = None
B = HCl
C = HNO₃
D = H₂SO₄
E = NaOH
F = MeOH
G = NaHSO₄
H = Na₂S₂O₃
K/E = Zn Ac/NaOH
O = Other

Container Code

- P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935

Mansfield: Certification No: MA015

Container Type

O

Preservative

A

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Relinquished By:

Date/Time

Received By:

Date/Time

John D... 12/16/16 13:31
Debra... 12/16/16 16:17
Tom... 12/16/16 22:50
J... 12/17/16 02:35

12/16/16 13:31
12-16-16 1800
12/16/16 22:50
12/17/16 02:35

Debra... 12/16/16 13:31
Tom... 12-16-16 1800
... 12/16/16 22:50
... 12/17/16 02:35

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Jan 04 2017, 03:05 pm

Login Number: L1641084

Account: CSTONE-CADENACO Cornerstone/Cadena Co. joint account Project: 140802-018

Sample #	Client ID	Received: 16DEC16 Mat PR Collected	Due Date: 23DEC16 Container
----------	-----------	---------------------------------------	--------------------------------

L1641084-01 PW-1 4 S0 15DEC16 07:30 1-BAG

When breaking up chunks, use center of material to run analysis NJ-RED Package Due Date: 12/23/16

A2-1,4-DIOXANE-SIM,NJ-RED,NJDEP,TS100

L1641084-02 PW-2 4 S0 15DEC16 07:40 1-BAG

When breaking up chunks, use center of material to run analysis Package Due Date: 12/23/16

A2-1,4-DIOXANE-SIM,TS100

ALPHA ANALYTICAL LABORATORIES
Container Tracking Report

Container ID Type	Status	Transaction Date	From Response	Location	To Operator	Response	Location	Operator
L1641084-01A BAG	INTACT	20-DEC-16	CUSTODY	A2-ORGANIC PREP	Tyler Snook	A2-CUSTODY-FRZ1-U1	A2-CUSTODY-FRZ1-U1	Tyler Snook
L1641084-01A BAG	INTACT	20-DEC-16	A2-CUSTODY-REFRIDGE	A2-CUSTODY-FRZ1-U1	Sarah Barr	A2-ORGANIC PREP	A2-ORGANIC PREP	Sarah Barr
L1641084-01A BAG	INTACT	17-DEC-16	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Bethany Bedard	A2-CUSTODY-FRZ1-U1	A2-CUSTODY-FRZ1-U1	Bethany Bedard
L1641084-01A BAG	INTACT	17-DEC-16	A2-LOGIN	A2-LOGIN	Michael Chang	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Michael Chang
L1641084-02A BAG	INTACT	20-DEC-16	CUSTODY	A2-ORGANIC PREP	Tyler Snook	A2-CUSTODY-FRZ1-U1	A2-CUSTODY-FRZ1-U1	Tyler Snook
L1641084-02A BAG	INTACT	20-DEC-16	A2-CUSTODY-REFRIDGE	A2-CUSTODY-FRZ1-U1	Sarah Barr	A2-ORGANIC PREP	A2-ORGANIC PREP	Sarah Barr
L1641084-02A BAG	INTACT	17-DEC-16	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Bethany Bedard	A2-CUSTODY-FRZ1-U1	A2-CUSTODY-FRZ1-U1	Bethany Bedard
L1641084-02A BAG	INTACT	17-DEC-16	A2-LOGIN	A2-LOGIN	Michael Chang	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Michael Chang

Methodology Review

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641084
Report Date: 01/04/17

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Laboratory Chronicle

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641084
Report Date: 01/04/17

Sample Receipt and Container Information

Were project specific reporting limits specified? NO

Cooler Information Custody Seal

Cooler

A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1641084-01A	Bag	A	N/A	4.3	Y	Absent	A2-1,4-DIOXANE-SIM(14)
L1641084-02A	Bag	A	N/A	4.3	Y	Absent	A2-1,4-DIOXANE-SIM(14)

*Values in parentheses indicate holding time in days



NJ DEP
Data of Known Quality Protocols
Conformance/Non-Conformance
Summary Questionnaire

**NJ DEP Data of Known Quality Protocols
 Conformance/Non-Conformance
 Summary Questionnaire**

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the NJDEP Data of Known Quality performance standards?	YES
1a	Were the method specified handling, preservation, and holding time requirements met?	YES
1b	EPH Method: Was the EPH Method conducted without significant modifications (see Section 11.3 of respective DKQ methods)?	N/A
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	YES
3	Were all samples received at an appropriate temperature ($4 \pm 2^\circ \text{C}$)?	YES
4	Were all QA/QC performance criteria specified in the NJDEP DKQP standards achieved?	YES
5a	Were reporting limits specified or referenced on the chain-of-custody or communicated to the laboratory prior to sample receipt?	NO
5b	Were these reporting limits met?	N/A
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the DKQP documents and/or site-specific QAPP?	NO
7	Are project-specific matrix spikes and/or laboratory duplicates included in this data set?	NO

Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1a or #1b is "No", the data package does not meet the requirements for "Data of Known Quality".



Conformance/Non-Conformance Summary

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641084
Report Date: 01/04/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641084
Report Date: 01/04/17

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

DKQP Related Narratives

Report Submission

In reference to question 5a:

Reporting limits were not specified.

Semi-Volatiles

In reference to question 6:

At the client's request, all submitted samples were not analyzed for the full DKQP list of constituents identified in the method specific analyte list presented in the DKQP documents.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: *Juan E. Mel* Report Date: 01/04/17
Title: Technical Director/Representative

Glossary

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Report Format: DU Report with 'J' Qualifiers



Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641084
Report Date: 01/04/17

Data Qualifiers

- reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
 - D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
 - E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
 - G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
 - H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
 - I** - The lower value for the two columns has been reported due to obvious interference.
 - M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
 - NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
 - P** - The RPD between the results for the two columns exceeds the method-specified criteria.
 - Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
 - R** - Analytical results are from sample re-analysis.
 - RE** - Analytical results are from sample re-extraction.
 - S** - Analytical results are from modified screening analysis.
 - J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
 - ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers



Organics

**GC/MS Extractable Analysis
Method 8270
Selective Ion Monitoring**

Sample Results Summary

Form 1

SemiVolatile Organics

Client : Cornerstone/Cadena Co. joint accoun	Lab Number : L1641084
Project Name : FORD-RINGWOOD	Project Number : 140802-018
Lab ID : L1641084-01	Date Collected : 12/15/16 07:30
Client ID : PW-1	Date Received : 12/16/16
Sample Location : RINGWOOD, NJ	Date Analyzed : 01/03/17 03:25
Sample Matrix : Paint	Date Extracted : 12/20/16
Analytical Method : 1,8270D-SIM	Dilution Factor : 1
Lab File ID : F601021724	Analyst : SF
Sample Amount : 5.58 g	Instrument ID : BNA6
Extraction Method : EPA 3570	GC Column : RTX-5
Extract Volume : 4000 uL	%Solids : 100
GPC Cleanup : N	Injection Volume : 1 uL

CAS NO.	Parameter	ug/Kg			Qualifier
		Results	RL	MDL	
123-91-1	1,4-Dioxane	ND	7.17	3.58	U



Form 1

SemiVolatile Organics

Client : Cornerstone/Cadena Co. joint accoun	Lab Number : L1641084
Project Name : FORD-RINGWOOD	Project Number : 140802-018
Lab ID : L1641084-02	Date Collected : 12/15/16 07:40
Client ID : PW-2	Date Received : 12/16/16
Sample Location : RINGWOOD, NJ	Date Analyzed : 01/03/17 04:08
Sample Matrix : Paint	Date Extracted : 12/20/16
Analytical Method : 1,8270D-SIM	Dilution Factor : 1
Lab File ID : F601021725	Analyst : SF
Sample Amount : 5.75 g	Instrument ID : BNA6
Extraction Method : EPA 3570	GC Column : RTX-5
Extract Volume : 4000 uL	%Solids : 100
GPC Cleanup : N	Injection Volume : 1 uL

CAS NO.	Parameter	ug/Kg			Qualifier
		Results	RL	MDL	
123-91-1	1,4-Dioxane	ND	6.96	3.48	U



Form 1

SemiVolatile Organics

Client : Cornerstone/Cadena Co. joint accoun	Lab Number : L1641084
Project Name : FORD-RINGWOOD	Project Number : 140802-018
Lab ID : WG963084-1	Date Collected : NA
Client ID : WG963084-1BLANK	Date Received : NA
Sample Location :	Date Analyzed : 01/03/17 01:18
Sample Matrix : SOLID	Date Extracted : 12/20/16
Analytical Method : 1,8270D-SIM	Dilution Factor : 1
Lab File ID : F601021721	Analyst : SF
Sample Amount : 5 g	Instrument ID : BNA6
Extraction Method : EPA 3570	GC Column : RTX-5
Extract Volume : 4000 uL	%Solids : NA
GPC Cleanup : N	Injection Volume : 1 uL

CAS NO.	Parameter	ug/Kg			Qualifier
		Results	RL	MDL	
123-91-1	1,4-Dioxane	ND	8.00	4.00	U



Tuning Results Summary

**Instrument Performance Check
Decafluorotriphenylphosphine (DFTPP)
Form 5**

Client	: Cornerstone/Cadena Co. joint account	Lab Number	: L1641084
Project Name	: FORD-RINGWOOD	Project Number	: 140802-018
Instrument ID	: BNA6	Analysis Date	: 12/29/16 12:33
Tune Standard	: R932366-9	Tune File ID	: F612291603_tune

m/e	Ion Abundance Criteria	%Relative Abundance
51	10.0 - 80.0% of Base Peak	40
68	Less than 2.0% of mass 69	0 (0)1
70	Less than 2.0% of mass 69	0.2 (.6)1
127	10.0 - 80.0% of Base Peak	49.4
197	Less than 2.0% of mass 198	0
198	Base Peak, or >50% of mass 442	100
199	5.0 - 9.0% of mass 198	6.9
275	10.0 - 60.0% of Base Peak	26.4
365	Greater than 1.0% of mass 198	3
441	Present, but less than 24% of mass 442	15.6
442	Base Peak, or >50% of mass 198	95.5
443	15.0 - 24.0% of mass 442	18.8 (19.7)2

1-Value is % of mass 69 2-Value is % of mass 442

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

Client Sample ID	Lab Sample ID	File ID	Analysis Date/Time
STD 10	R932366-1	F612291604	12/29/16 13:28
STD 50	R932366-3	F612291605	12/29/16 14:11
STD 100	R932366-5	F612291606	12/29/16 14:54
STD 500	R932366-4	F612291607	12/29/16 15:37
STD 1000	R932366-2	F612291608	12/29/16 16:21
STD 5000	R932366-6	F612291609	12/29/16 17:04
STD 10000	R932366-7	F612291610	12/29/16 17:47
ICV Quant Report STD 1000	R932366-8	F612291611	12/29/16 18:30



Instrument Performance Check

Decafluorotriphenylphosphine (DFTPP)

Form 5

Client	: Cornerstone/Cadena Co. joint account	Lab Number	: L1641084
Project Name	: FORD-RINGWOOD	Project Number	: 140802-018
Instrument ID	: BNA6	Analysis Date	: 01/02/17 20:50
Tune Standard	: WG964509-13	Tune File ID	: F601021715_tune

m/e	Ion Abundance Criteria	%Relative Abundance
51	10.0 - 80.0% of Base Peak	39.5
68	Less than 2.0% of mass 69	0 (0)1
70	Less than 2.0% of mass 69	0.2 (.6)1
127	10.0 - 80.0% of Base Peak	50
197	Less than 2.0% of mass 198	0
198	Base Peak, or >50% of mass 442	100
199	5.0 - 9.0% of mass 198	7
275	10.0 - 60.0% of Base Peak	26
365	Greater than 1.0% of mass 198	3
441	Present, but less than 24% of mass 442	15.6
442	Base Peak, or >50% of mass 198	87.1
443	15.0 - 24.0% of mass 442	17.3 (19.9)2

1-Value is % of mass 69 2-Value is % of mass 442

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

Client Sample ID	Lab Sample ID	File ID	Analysis Date/Time
WG964509-15CCAL	WG964509-15	F601021716	01/02/17 21:45
WG963084-1BLANK	WG963084-1	F601021721	01/03/17 01:18
WG963084-2LCS	WG963084-2	F601021722	01/03/17 02:00
WG963084-3LCSD	WG963084-3	F601021723	01/03/17 02:43
PW-1	L1641084-01	F601021724	01/03/17 03:25
PW-2	L1641084-02	F601021725	01/03/17 04:08



Blank Results Summary

Method Blank Summary Form 4

Client	: Cornerstone/Cadena Co. joint accoun	Lab Number	: L1641084
Project Name	: FORD-RINGWOOD	Project Number	: 140802-018
Lab Sample ID	: WG963084-1	Lab File ID	: F601021721
Instrument ID	: BNA6	Extraction Date	: 12/20/16
Matrix	: SOLID	Analysis Date	: 01/03/17 01:18
Level	: LOW		

Client Sample No.	Lab Sample ID	Analysis Date
WG963084-2LCS	WG963084-2	01/03/17 02:00
WG963084-3LCSD	WG963084-3	01/03/17 02:43
PW-1	L1641084-01	01/03/17 03:25
PW-2	L1641084-02	01/03/17 04:08



Standards Data Summary



Initial Calibration Summary Form 6

Client	: Cornerstone/Cadena Co. joint accoun	Lab Number	: L1641084
Project Name	: FORD-RINGWOOD	Project Number	: 140802-018
Instrument ID	: BNA6	Ical Ref	: ICAL13258
Calibration dates	: 12/29/16 13:28 12/29/16 17:47		

Calibration Files

10 =F612291604.D 50 =F612291605.D 100 =F612291606.D 500 =F612291607.D 1000=F612291608.D
 5000=F612291609.D 1e4 =F612291610.D

	Compound	10	50	100	500	1000	5000	1e4	Avg	%RSD
1)	1,4-Dioxane-d8 (IS)	-----ISTD-----								
2)	1,4-dioxane	1.262	1.297	1.259	1.269	1.305	1.309	1.375	1.297	3.10
3) I	1,4-Dichlorobenzene-d4	-----ISTD-----								
4) s	1,4-dioxane-d8	0.933	1.004	1.039	1.064	1.091	1.151	1.181	1.066	7.95



Continuing Calibration Form 7

Client	: Cornerstone/Cadena Co. joint accoun	Lab Number	: L1641084
Project Name	: FORD-RINGWOOD	Project Number	: 140802-018
Instrument ID	: BNA6	Calibration Date	: 01/02/17 21:45
Lab File ID	: F601021716	Init. Calib. Date(s)	: 12/29/16 12/29/16
Sample No	: WG964509-15	Init. Calib. Times	: 13:28 17:47
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,4-Dioxane-d8 (IS)	1	1	-	0	20	87	-0.8
1,4-dioxane	1.297	1.315	-	-1.4	20	88	-0.8
1,4-Dichlorobenzene-d4	1	1	-	0	20	79	-0.1
1,4-dioxane-d8	1.066	1.211	-	-13.6	20	87	-0.8

* Value outside of QC limits.



Surrogate Summary

Form 2
Surrogate Recovery
SEMIVOLATILES

Client: Cornerstone/Cadena Co. joint account
 Project Name: FORD-RINGWOOD

Lab Number: L1641084
 Project Number: 140802-018
 Matrix: Paint

CLIENT ID (LAB SAMPLE NO.)	S1 ()	S2 ()	S3 ()	S4 ()	S5 ()	S6 ()	TOT OUT
WG963084-3LCSD	99	--	--	--	--	--	0
WG963084-2LCS	100	--	--	--	--	--	0
WG963084-1BLANK	106	--	--	--	--	--	0
PW-1 (L1641084-01)	58	--	--	--	--	--	0
PW-2 (L1641084-02)	54	--	--	--	--	--	0

S1 = 1,4-DIOXANE-D8

QC LIMITS
(15-110)

* Values outside of QC limits

FORM II A2-1,4-DIOXANE-SIM



Batch QC Summary

Laboratory Control Sample Form 3

Client : Cornerstone/Cadena Co. joint accoun Lab Number : L1641084
 Project Name : FORD-RINGWOOD Project Number : 140802-018
 Matrix : SOLID
 LCS Sample ID : WG963084-2 Analysis Date : 01/03/17 02:00 File ID : F601021722
 LCSD Sample ID : WG963084-3 Analysis Date : 01/03/17 02:43 File ID : F601021723

Parameter	Laboratory Control Sample			Laboratory Control Duplicate			RPD	Recovery Limits	RPD Limit
	True (ug/kg)	Found (ug/kg)	%R	True (ug/kg)	Found (ug/kg)	%R			
1,4-Dioxane	400	384.	96	400	393.	98	2	40-140	30



Internal Standard Summary

Internal Standard Area and RT Summary Form 8

Client	: Cornerstone/Cadena Co. joint accoun	Lab Number	: L1641084
Project Name	: FORD-RINGWOOD	Project Number	: 140802-018
Instrument ID	: BNA6	Analysis Date	: 01/02/17 21:45
Sample No	: WG964509-15	Lab File ID	: F601021716

	1,4-Dichlorobenzene-d4		Area	RT	Area	RT
	Area	RT				
WG964509-15	64013	15.71				
Upper Limit	128026	16.21				
Lower Limit	32007	15.21				
<hr/>						
Sample ID						
WG963084-1 BLANK	48054	15.71				
WG963084-2 LCS	46190	15.71				
WG963084-3 LCSD	41913	15.71				
PW-1	62867	15.75				
PW-2	100418	15.78				

Area Upper Limit = +100% of internal standard area
 Area Lower Limit = - 50% of internal standard area

RT Upper Limit = +0.50 minutes of internal standard RT
 RT Lower Limit = -0.50 minutes of internal standard RT

* Values outside of QC limits



Chromatograms

Sample Raw Data

Quantitation Report (QT Reviewed)

Data Path : O:\Organics\DATA\BNA6\2017\JAN\JAN02\
 Data File : F601021724.D
 Acq On : 3 Jan 2017 3:25 am
 Operator : BNA6:SF
 Sample : L1641084-01
 Misc : WG964509,WG963084,ICAL13258
 ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jan 03 20:29:07 2017
 Quant Method : O:\Organics\DATA\BNA6\2017\JAN\JAN02\14DIOX1229BNA6.M
 Quant Title : Semivolatiles by GC/MS
 QLast Update : Thu Dec 29 20:10:25 2016
 Response via : Initial Calibration

Sub List : Default - All compounds listed

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

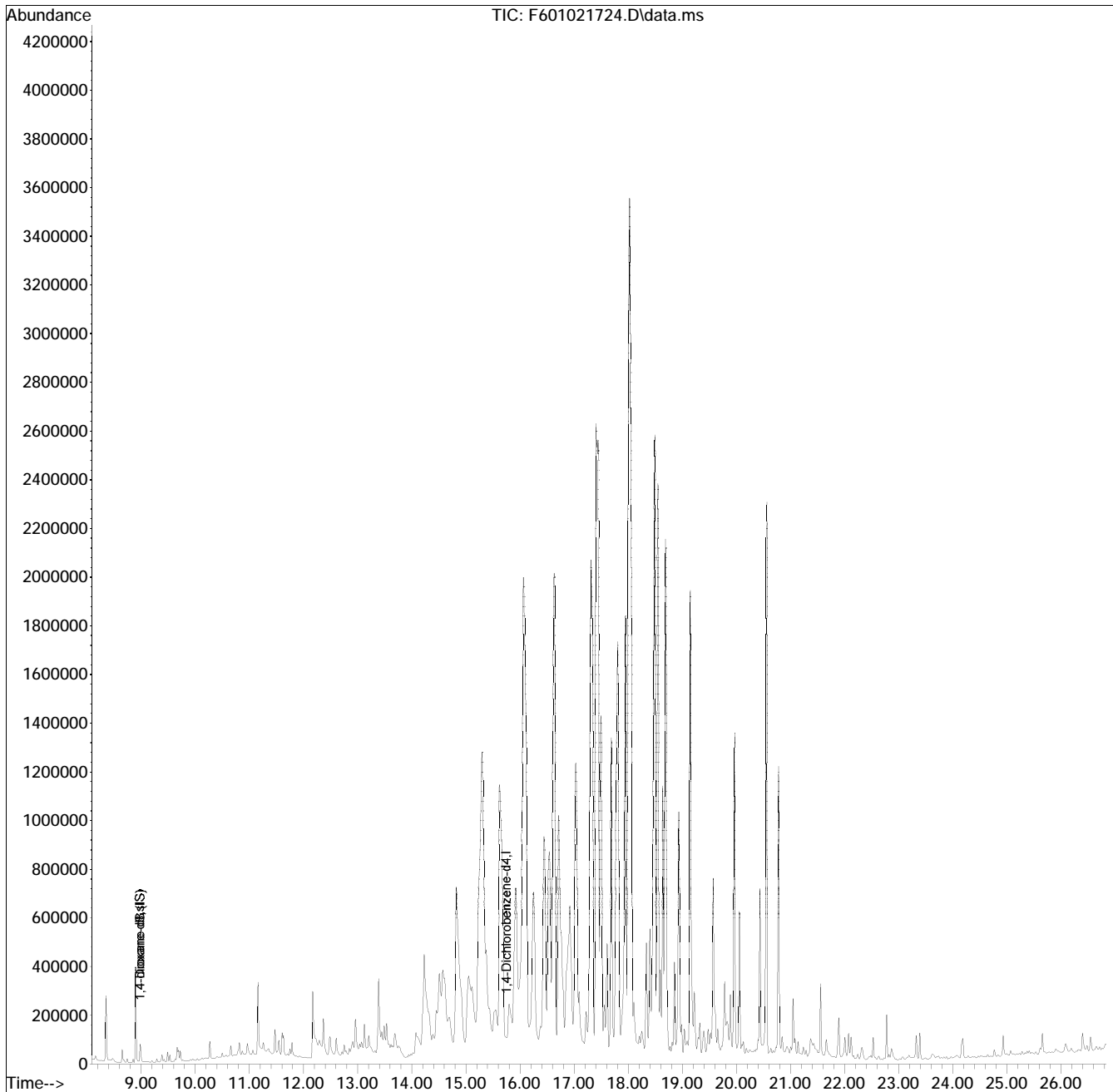
Internal Standards						
1) 1,4-Dioxane-d8 (IS)	8.980	64	39138	500.000	ng/mL	-0.12
3) 1,4-Dichlorobenzene-d4	15.752	152	62867M4	500.000	ng/mL	0.03
System Monitoring Compounds						
4) 1,4-dioxane-d8	8.980	64	39138	291.938	ng/mL	-0.12
Spiked Amount	500.000	Range	15 - 115	Recovery	=	58.39%
Target Compounds						
2) 1,4-dioxane	0.000		0	N.D.	d	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed Reviewed)

Data Path : O:\Organics\DATA\BNA6\2017\JAN\JAN02\
Data File : F601021724.D
Acq On : 3 Jan 2017 3:25 am
Operator : BNA6:SF
Sample : L1641084-01
Misc : WG964509,WG963084,ICAL13258
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jan 03 20:29:07 2017
Quant Method : O:\Organics\DATA\BNA6\2017\JAN\JAN02\14DIOX1229BNA6.M
Quant Title : Semivolatiles by GC/MS
QLast Update : Thu Dec 29 20:10:25 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : O:\Organics\DATA\BNA6\2017\JAN\JAN02\
 Data File : F601021725.D
 Acq On : 3 Jan 2017 4:08 am
 Operator : BNA6:SF
 Sample : L1641084-02
 Misc : WG964509,WG963084,ICAL13258
 ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jan 03 20:30:45 2017
 Quant Method : O:\Organics\DATA\BNA6\2017\JAN\JAN02\14DIOX1229BNA6.M
 Quant Title : Semivolatiles by GC/MS
 QLast Update : Thu Dec 29 20:10:25 2016
 Response via : Initial Calibration

Sub List : Default - All compounds listed

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

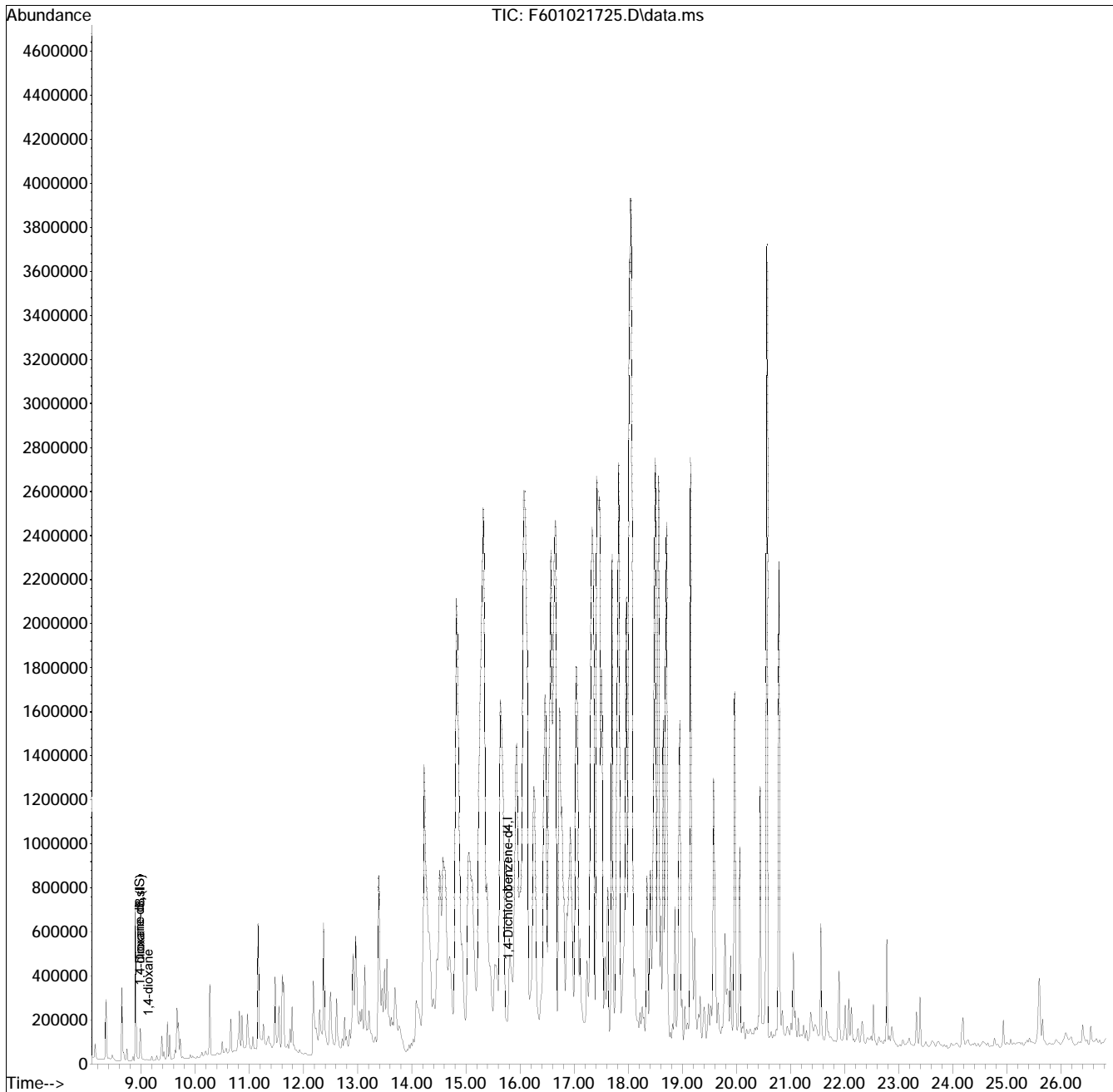
Internal Standards						
1) 1,4-Dioxane-d8 (IS)	8.980	64	57887	500.000	ng/mL	-0.12
3) 1,4-Dichlorobenzene-d4	15.784	152	100418M4	500.000	ng/mL	0.07
System Monitoring Compounds						
4) 1,4-dioxane-d8	8.980	64	57887	270.324	ng/mL	-0.12
Spiked Amount	500.000	Range	15 - 115	Recovery	=	54.06%
Target Compounds						
2) 1,4-dioxane	9.135	88	706M4	4.703	ng/mL	Qvalue

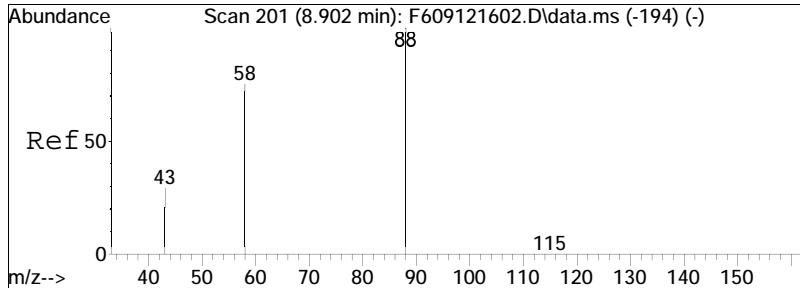
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed Reviewed)

Data Path : O:\Organics\DATA\BNA6\2017\JAN\JAN02\
Data File : F601021725.D
Acq On : 3 Jan 2017 4:08 am
Operator : BNA6:SF
Sample : L1641084-02
Misc : WG964509,WG963084,ICAL13258
ALS Vial : 23 Sample Multiplier: 1

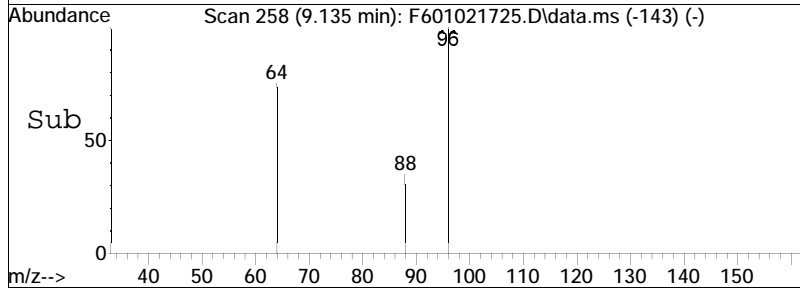
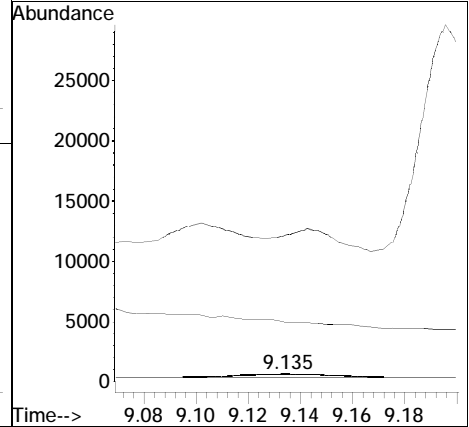
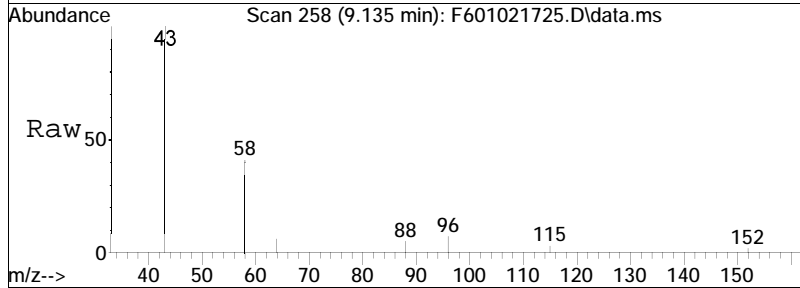
Quant Time: Jan 03 20:30:45 2017
Quant Method : O:\Organics\DATA\BNA6\2017\JAN\JAN02\14DIOX1229BNA6.M
Quant Title : Semivolatiles by GC/MS
QLast Update : Thu Dec 29 20:10:25 2016
Response via : Initial Calibration





#2
 1,4-dioxane
 Concen: 4.70 ng/mL m
 RT: 9.135 min Scan# 258
 Delta R.T. -0.033 min
 Lab File: F601021725.D
 Acq: 3 Jan 2017 4:08 am

Tgt Ion:	88	Resp:	706
Ion Ratio	100	Lower	Upper
58	0.0	60.0	90.0#
43	0.0	23.8	35.8#



Method Blank Raw Data

Quantitation Report (QT Reviewed)

Data Path : O:\Organics\DATA\BNA6\2017\JAN\JAN02\
 Data File : F601021721.D
 Acq On : 3 Jan 2017 1:18 am
 Operator : BNA6:SF
 Sample : WG963084-1
 Misc : WG964509,WG963084,ICAL13258
 ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jan 03 19:54:08 2017
 Quant Method : O:\Organics\DATA\BNA6\2017\JAN\JAN02\14DIOX1229BNA6.M
 Quant Title : Semivolatiles by GC/MS
 QLast Update : Thu Dec 29 20:10:25 2016
 Response via : Initial Calibration

Sub List : Default - All compounds listed

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

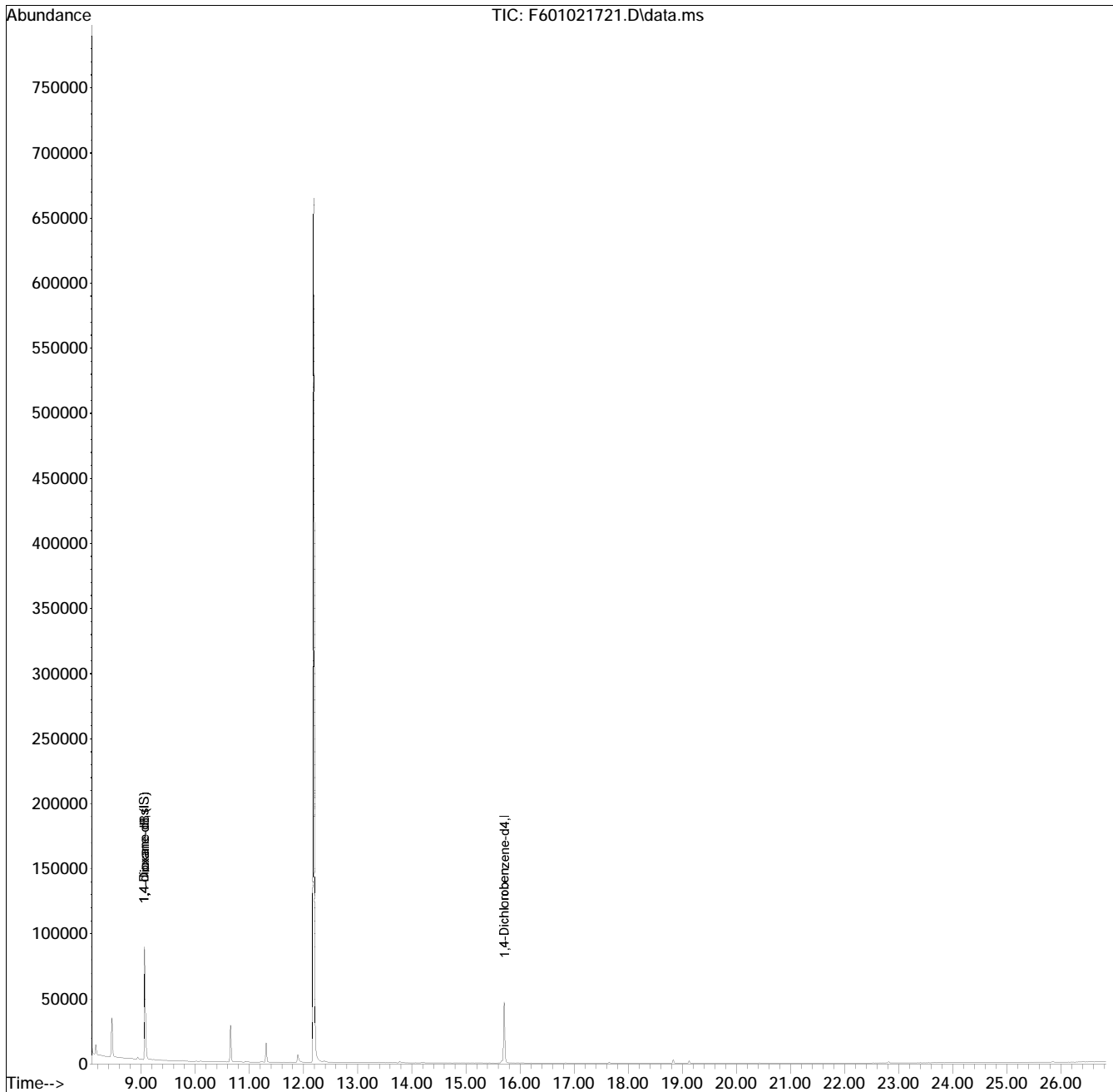
Internal Standards						
1) 1,4-Dioxane-d8 (IS)	9.065	64	54499	500.000	ng/mL	-0.04
3) 1,4-Dichlorobenzene-d4	15.707	152	48054	500.000	ng/mL	-0.01
System Monitoring Compounds						
4) 1,4-dioxane-d8	9.065	64	54499	531.831	ng/mL	-0.04
Spiked Amount	500.000	Range	15 - 115	Recovery	=	106.37%
Target Compounds						
2) 1,4-dioxane	0.000		0	N.D.	d	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed Reviewed)

Data Path : O:\Organics\DATA\BNA6\2017\JAN\JAN02\
Data File : F601021721.D
Acq On : 3 Jan 2017 1:18 am
Operator : BNA6:SF
Sample : WG963084-1
Misc : WG964509,WG963084,ICAL13258
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jan 03 19:54:08 2017
Quant Method : O:\Organics\DATA\BNA6\2017\JAN\JAN02\14DIOX1229BNA6.M
Quant Title : Semivolatiles by GC/MS
QLast Update : Thu Dec 29 20:10:25 2016
Response via : Initial Calibration



ATTACHMENT C – DATA VALIDATION REPORTS



E-Mail Date: 2017-01-11
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER – 140802-018
CADENA PROJECT E203361
SAMPLES COLLECTED DECEMBER 2016
SUBMITTAL #: L1641090

PREPARED BY:
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1099 Highland Drive
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Date: 2017-01-11
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ATTACHMENT A	LAB DELIVERABLE REFERENCES INCLUDING CHAIN OF CUSTODY DOCUMENT(S)
ATTACHMENT B	VALIDATION CHECKLIST SUMMARY GRID

1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by ALPHA Analytical Laboratory Mansfield and Westborough MA the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. The sampling and analysis summary listing sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. The summary of all of the field sample results and qualifiers associated with this submittal is presented in Appendix 3. Executive summary of qualified data only is reported in Appendix 4. Lab deliverables relevant to this submittal are included as attachments at the end of this report.

Table 1.1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	GCMS SVOC SIM
L1641090-01	B-2016-1-5-5.5	12/13/2016	X
L1641090-02	B-2016-1-9-9.5	12/13/2016	X
L1641090-03	B-2016-1-13.5-14	12/13/2016	X
L1641090-04	B-2016-1-20-20.5	12/14/2016	X
L1641090-05	B-2016-2-4.5-5	12/13/2016	X
L1641090-06	B-2016-2-11-11.5	12/13/2016	X
L1641090-07	B-2016-2-16.5-17	12/13/2016	X
L1641090-08	B-2016-2-21.5-22	12/14/2016	X
L1641090-09	B-2016-3-5.5-6	12/14/2016	X
L1641090-10	B-2016-3-9.5-10	12/14/2016	X
L1641090-11	B-2016-3-14-14.5	12/14/2016	X
L1641090-12	B-2016-4-8.5-9	12/13/2016	X
L1641090-13	B-2016-4-11.0-11.5	12/13/2016	X
L1641090-14	B-2016-4-15-15.5	12/13/2016	X
L1641090-15	B-2016-4-20-20.5	12/13/2016	X
L1641090-16	B-2016-4-23.5-24	12/13/2016	X
L1641090-17	B-2016-5-.5-1	12/14/2016	X
L1641090-18	B-2016-5-11-11.5	12/14/2016	X
L1641090-19	B-2016-5-15-15.5	12/14/2016	X
L1641090-20	B-2016-6-4.5-5	12/15/2016	X
L1641090-21	B-2016-6-1.5-2	12/15/2016	X
L1641090-22	B-2016-7-9-9.5	12/15/2016	X
L1641090-23	B-2016-7-11.5-12	12/15/2016	X
L1641090-24	B-2016-8-11-11.5	12/15/2016	X
L1641090-25	B-2016-8-9-9.5	12/15/2016	X
L1641090-26	B-2016-8-4.5-5	12/15/2016	X
L1641090-27	B-2016-9-6-6.5	12/15/2016	X

L1641090-28	B-2016-9-2-2.5	12/15/2016	X
L1641090-29	B-2016-10-4-4.5	12/14/2016	X
L1641090-30	B-2016-10-9-9.5	12/14/2016	X
L1641090-31	B-2016-10-11.5-12	12/14/2016	X
L1641090-32	B-2016-10-20-21.5	12/14/2016	X
L1641090-33	B-2016-11-5-5.5	12/15/2016	X
L1641090-34	B-2016-11-11-11.5	12/15/2016	X
L1641090-35	B-2016-12-5.5-6	12/15/2016	X
L1641090-36	B-2016-12-4-4.5	12/15/2016	X
L1641090-37	B-2016-13-5-5.5	12/14/2016	X
L1641090-38	B-2016-10-10.5	12/14/2016	X
L1641090-39	B-2016-15-15.5	12/14/2016	X
L1641090-40	B-2016-14-4-4.5	12/15/2016	X
L1641090-41	B-2016-14-10-10.5	12/15/2016	X
L1641090-42	DUP-1	12/14/2016	X
L1641090-43	DUP-2	12/15/2016	X

Table 1.2 below lists the project-specific analytes or analyte lists associated with the methods referenced in Table 1.1:

Table 1.2

<i>Parameter</i>	<i>Reference Method</i>	<i>Analyte Listing</i>
Semi-Volatile Organics	OSW-8270D/SIM - ISOTOPE DILUTION	1,4-Dioxane only

All “OSW” analytical methods were referenced from “Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods”, Third editions final update IV or latest revision (with all subsequent revisions). The “SM” analytical method was referenced from the “Standard Methods for the Examination of Water and Waste water”, latest promulgated revision. “EPA” methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis.

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where

available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

- i.) “Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review” USEPA Region 2 as identified in project QAPP.
- ii.) “Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program” as identified in the project QAPP.

The Level VI review findings are summarized in the Executive Summary section below.

Process controls for the validation review of the level 4 laboratory data package are referenced in the tables by method/analytical group within the body of this report.

Definitions for data qualifiers that may have been incorporated into the data tables for this report are noted below:

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS SVOC/SIM

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:

GCMS SVOC-SIM

GENERAL METHODOLOGY – Laboratory used GCMS SVOC method 8270D-SIM with method 3570 prep. The 1,4-dioxane analyte concentration was quantitated against the 1,4- dioxane-D8 surrogate which was also used as the internal standard. Method is considered to be isotope dilution however the “surrogate as internal standard” technique is not considered to be the industry standard quantitation approach. This would be considered to be a “results corrected for percent recovery” quantification technique so data generated using these calculations would not be comparable to field sample results generated by conventional internal standard quantification techniques (high bias of field sample results would be expected using this quantification technique).

Introducing the internal standard, 1,4-dioxane-d8 prior to sample extraction treats the internal standard as a surrogate so precludes using the 50% to 200% internal standard recovery rule as referenced. The internal standard recovery rule is therefore applied only to the surrogates associated with samples that had internal standards injected prior to analysis, and this data is provided in the Level 4, Form 8 Internal Standard and RT summary table. If the 1,4-dioxane-d8 data is to be legitimately considered to be an internal standard as well as surrogate it should, at a minimum, be subject to the 50%-200% response (recovery) criteria listed in the method. The current lower control limit for this internal standard as a surrogate is 15%. **In the case of this lab submittal the internal standard responses for ALL of the field samples were within the 50%-200% of daily CCV internal standard response criteria so the data is considered to be in compliance with method criteria.**

VERIFICATION SUMMARY

A level 2 data package was evaluated prior to receipt of the level 4 laboratory data package and the following findings were reported:

GCMS VOC samples -004, -006, -007, -011, -013, -014, -015, -016, -017, -018, -019, -021, -022, -024, -029, -031, -031, -032, -037 and all QC batch method blank and LCS SURROGATE recoveries were outliers biased high for at least 1 surrogate. Associated client sample results were non-detect so qualification was not required based on these high bias QC outliers.

2.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D -SIM analysis with ISOTOPE DILUTION– GENERAL QC REQUIREMENTS

See Attachments for submittal-specific review summary of QC requirements noted below
The target analyte list was defined by the client-project as 1,4-dioxane.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs met the method criteria for instrument sensitivity, retention time drift and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

2.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

2.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria for retention time and response. See executive summary for information concerning quantitation technique associated with internal standards.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were quantitated against the 1,4-dichlorobenzene-d4 internal standard and were within the established laboratory control limits unless noted otherwise in

verification/validation summary. Note: surrogate analyte responses (1,4-dioxane-D8) were also used as internal standards.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed for the target analyte SVOCs. The LCS recoveries and LCS/LCSD RPD were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

NOTE: MS/MSD QC samples were not analyzed as part of this QC batch.

Validator does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

All target analytes were reported based on comparison to project-specific target analyte requirements.

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

Not required for this sampling event or laboratory submittal.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

Method blanks are evaluated if detected above the MDL. Client sample results that are less than 5 times the amount found in the blank for organic analytes (10X if analyte is considered to be a common lab contaminant) or less than 10 times the amount found in the blank for inorganic/metals analysis are flagged as non-detect at the RL with a UB flag if sample result is less than RL or non-detect at the concentration reported with a B flag if sample result is above the RL. See verification/validation summary for findings specific to this submittal.

3.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using the criteria noted in the following sections.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

3.1 SAMPLE PRESERVATION AND HOLDING TIMES

Holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

- i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.
- ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

EPA Sample Holding Time and Preservation Requirements

<i>Parameter</i>	<i>Reference Method</i>	<i>Matrix</i>	<i>Preservation & Storage</i>	<i>Holding Times</i>
Semi-volatile Organics by GCMS	OSW-8270D-SIM	SOIL	Refrigeration 0-6°C	14 days Extraction 40 days Analysis

3.2 METHOD BLANK SUMMARY

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

4.0 USABILITY AND COMPARABILITY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

5.0 QC SUMMARY

All sample results were compliant with the project specific QAPP standard (if available) for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1
(Sample Analytical Summary – SAS table)

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361

Laboratory: ALPHA Laboratories-Mansfield

Laboratory Submittal: L1641090

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	GCMS SVOC SIM
L1641090-01	B-2016-1-5-5.5	12/13/2016	X
L1641090-02	B-2016-1-9-9.5	12/13/2016	X
L1641090-03	B-2016-1-13.5-14	12/13/2016	X
L1641090-04	B-2016-1-20-20.5	12/14/2016	X
L1641090-05	B-2016-2-4.5-5	12/13/2016	X
L1641090-06	B-2016-2-11-11.5	12/13/2016	X
L1641090-07	B-2016-2-16.5-17	12/13/2016	X
L1641090-08	B-2016-2-21.5-22	12/14/2016	X
L1641090-09	B-2016-3-5.5-6	12/14/2016	X
L1641090-10	B-2016-3-9.5-10	12/14/2016	X
L1641090-11	B-2016-3-14-14.5	12/14/2016	X
L1641090-12	B-2016-4-8.5-9	12/13/2016	X
L1641090-13	B-2016-4-11.0-11.5	12/13/2016	X
L1641090-14	B-2016-4-15-15.5	12/13/2016	X
L1641090-15	B-2016-4-20-20.5	12/13/2016	X
L1641090-16	B-2016-4-23.5-24	12/13/2016	X
L1641090-17	B-2016-5-5-1	12/14/2016	X
L1641090-18	B-2016-5-11-11.5	12/14/2016	X
L1641090-19	B-2016-5-15-15.5	12/14/2016	X
L1641090-20	B-2016-6-4.5-5	12/15/2016	X
L1641090-21	B-2016-6-1.5-2	12/15/2016	X
L1641090-22	B-2016-7-9-9.5	12/15/2016	X
L1641090-23	B-2016-7-11.5-12	12/15/2016	X
L1641090-24	B-2016-8-11-11.5	12/15/2016	X
L1641090-25	B-2016-8-9-9.5	12/15/2016	X
L1641090-26	B-2016-8-4.5-5	12/15/2016	X
L1641090-27	B-2016-9-6-6.5	12/15/2016	X
L1641090-28	B-2016-9-2-2.5	12/15/2016	X
L1641090-29	B-2016-10-4-4.5	12/14/2016	X
L1641090-30	B-2016-10-9-9.5	12/14/2016	X
L1641090-31	B-2016-10-11.5-12	12/14/2016	X
L1641090-32	B-2016-10-20-21.5	12/14/2016	X
L1641090-33	B-2016-11-5-5.5	12/15/2016	X
L1641090-34	B-2016-11-11-11.5	12/15/2016	X
L1641090-35	B-2016-12-5.5-6	12/15/2016	X
L1641090-36	B-2016-12-4-4.5	12/15/2016	X
L1641090-37	B-2016-13-5-5.5	12/14/2016	X
L1641090-38	B-2016-13-10-10.5	12/14/2016	X
L1641090-39	B-2016-13-15-15.5	12/14/2016	X
L1641090-40	B-2016-14-4-4.5	12/15/2016	X
L1641090-41	B-2016-14-10-10.5	12/15/2016	X
L1641090-42	DUP-1	12/14/2016	X
L1641090-43	DUP-2	12/15/2016	X

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B-2016-5-15-15.5 (L1641090-19) Analyzed: 12/24/16 05:45	133
B-2016-6-4.5-5 (L1641090-20) Analyzed: 12/24/16 06:31	135
B-2016-6-1.5-2 (L1641090-21) Analyzed: 12/24/16 07:17	137
B-2016-7-9-9.5 (L1641090-22) Analyzed: 12/24/16 08:03	139
B-2016-7-11.5-12 (L1641090-23) Analyzed: 12/24/16 08:49	141
B-2016-8-11-11.5 (L1641090-24) Analyzed: 12/24/16 09:35	143
B-2016-8-9-9.5 (L1641090-25) Analyzed: 12/24/16 10:21	145
B-2016-8-4.5-5 (L1641090-26) Analyzed: 12/24/16 12:34	148
B-2016-9-6-6.5 (L1641090-27) Analyzed: 12/24/16 13:21	150
B-2016-9-2-2.5 (L1641090-28) Analyzed: 12/24/16 14:07	152
B-2016-10-4-4.5 (L1641090-29) Analyzed: 12/24/16 14:53	154
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B-2016-11-5-5.5 (L1641090-33) Analyzed: 12/24/16 17:58	162
B-2016-11-11-11.5 (L1641090-34) Analyzed: 12/24/16 18:44	164
B-2016-12-5-5-6 (L1641090-35) Analyzed: 12/24/16 19:31	166
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B-2016-10-10.5 (L1641090-38) Analyzed: 12/25/16 01:33	172
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B-2016-1-20-20.5 (L1641090-04) Analyzed: 12/30/16 05:45	190
B-2016-2-4.5-5 (L1641090-05) Analyzed: 12/30/16 06:31	192
B-2016-2-11-11.5 (L1641090-06) Analyzed: 12/30/16 07:18	194
B-2016-2-16.5-17 (L1641090-07) Analyzed: 12/30/16 08:04	196
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B-2016-3-5.5-6 (L1641090-09) Analyzed: 12/30/16 09:37	200
B-2016-3-9.5-10 (L1641090-10) Analyzed: 12/30/16 10:23	202
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B-2016-4-8.5-9 (L1641090-12) Analyzed: 12/30/16 11:55	206
B-2016-4-11.0-11.5 (L1641090-13) Analyzed: 12/30/16 14:09	208
B-2016-4-15-15.5 (L1641090-14) Analyzed: 12/30/16 14:55	210
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APPENDIX 3
(Analytical Results Summary – ARS Table)

Analytical Results Summary

CADENA Project ID: E203361
 Laboratory: ALPHA Laboratories - Mansfield
 Laboratory Submittal: L1641090

Analyte	Cas No.	Sample Name: B-2016-1-5-5.5				Sample Name: B-2016-1-9-9.5				Sample Name: B-2016-1-13.5-14				Sample Name: B-2016-1-20-20.5				Sample Name: B-2016-2-4.5-5			
		Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier

GC/MS SVOC

<u>OSW-8270DSIM</u>																					
1,4-DIOXANE	123-91-1	ND	0.00849	mg/kg	---	ND	0.00857	mg/kg	---	ND	0.00873	mg/kg	---	ND	0.00815	mg/kg	---	ND	0.00762	mg/kg	---
		B-2016-2-11-11.5 L1641090-06 12/13/2016				B-2016-2-16.5-17 L1641090-07 12/13/2016				B-2016-2-21.5-22 L1641090-08 12/14/2016				B-2016-3-5.5-6 L1641090-09 12/14/2016				B-2016-3-9.5-10 L1641090-10 12/13/2016			
		Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier

GC/MS SVOC

<u>OSW-8270DSIM</u>																					
1,4-DIOXANE	123-91-1	ND	0.00789	mg/kg	---	ND	0.00778	mg/kg	---	ND	0.00981	mg/kg	---	ND	0.00865	mg/kg	---	ND	0.00881	mg/kg	---
		B-2016-3-14-14.5 L1641090-11 12/14/2016				B-2016-4-8.5-9 L1641090-12 12/13/2016				B-2016-4-11.0-11.5 L1641090-13 12/13/2016				B-2016-4-15-15.5 L1641090-14 12/13/2016				B-2016-4-20-20.5 L1641090-15 12/13/2016			
		Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier

GC/MS SVOC

<u>OSW-8270DSIM</u>																					
1,4-DIOXANE	123-91-1	ND	0.00996	mg/kg	---	ND	0.00819	mg/kg	---	ND	0.00863	mg/kg	---	ND	0.00881	mg/kg	---	ND	0.00819	mg/kg	---
		B-2016-4-23.5-24 L1641090-16 12/13/2016				B-2016-5-.5-1 L1641090-17 12/14/2016				B-2016-5-11-11.5 L1641090-18 12/14/2016				B-2016-5-15-15.5 L1641090-19 12/14/2016				B-2016-6-4.5-5 L1641090-20 12/15/2016			
		Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier

GC/MS SVOC

<u>OSW-8270DSIM</u>																					
1,4-DIOXANE	123-91-1	ND	0.00817	mg/kg	---	ND	0.00844	mg/kg	---	ND	0.00809	mg/kg	---	ND	0.00831	mg/kg	---	ND	0.00808	mg/kg	---
		B-2016-6-1.5-2 L1641090-21 12/15/2016				B-2016-7-9-9.5 L1641090-22 12/15/2016				B-2016-7-11.5-12 L1641090-23 12/15/2016				B-2016-8-11-11.5 L1641090-24 12/15/2016				B-2016-8-9-9.5 L1641090-25 12/15/2016			
		Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier

GC/MS SVOC

<u>OSW-8270DSIM</u>																					
1,4-DIOXANE	123-91-1	ND	0.00814	mg/kg	---	ND	0.00785	mg/kg	---	ND	0.00957	mg/kg	---	ND	0.00883	mg/kg	---	ND	0.00801	mg/kg	---
		B-2016-8-4.5-5 L1641090-26 12/15/2016				B-2016-9-6-6.5 L1641090-27 12/15/2016				B-2016-9-2-2.5 L1641090-28 12/15/2016				B-2016-10-4-4.5 L1641090-29 12/14/2016				B-2016-10-9-9.5 L1641090-30 12/14/2016			
		Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier

GC/MS SVOC

<u>OSW-8270DSIM</u>																					
1,4-DIOXANE	123-91-1	ND	0.00832	mg/kg	---	ND	0.008	mg/kg	---	ND	0.00775	mg/kg	---	ND	0.00793	mg/kg	---	ND	0.00822	mg/kg	---
		B-2016-10-11.5-12 L1641090-31 12/14/2016				B-2016-10-20-21.5 L1641090-32 12/14/2016				B-2016-11-5-5.5 L1641090-33 12/15/2016				B-2016-11-11-11.5 L1641090-34 12/15/2016				B-2016-12-5-5.6 L1641090-35 12/15/2016			
		Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier

GC/MS SVOC

<u>OSW-8270DSIM</u>																					
1,4-DIOXANE	123-91-1	ND	0.00887	mg/kg	---	ND	0.00868	mg/kg	---	ND	0.00906	mg/kg	---	ND	0.00825	mg/kg	---	ND	0.00881	mg/kg	---
		B-2016-12-4-4.5 L1641090-36 12/15/2016				B-2016-13-5-5.5 L1641090-37 12/14/2016				B-2016-13-10-10.5 L1641090-38 12/14/2016				B-2016-13-15-15.5 L1641090-39 12/14/2016				B-2016-14-4-4.5 L1641090-40 12/15/2016			
		Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier

GC/MS SVOC

<u>OSW-8270DSIM</u>																					
1,4-DIOXANE	123-91-1	ND	0.00873	mg/kg	---	ND	0.00787	mg/kg	---	ND	0.00835	mg/kg	---	ND	0.00805	mg/kg	---	ND	0.00825	mg/kg	---
		B-2016-14-10-10.5 L1641090-41 12/15/2016				DUP-1 L1641090-42 12/14/2016				DUP-2 L1641090-43 12/15/2016											
		Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier	Report Result	Report Limit	Units	Valid Qualifier

GC/MS SVOC

<u>OSW-8270DSIM</u>																					
1,4-DIOXANE	123-91-1	ND	0.008	mg/kg	---	ND	0.0076	mg/kg	---	ND	0.00778	mg/kg	---								

APPENDIX 4
(Qualified Analytical Summary table not required for this submittal)

APPENDIX 5
(Level 2 data package verification report)



January 04, 2017

Tim Roeper
Cornerstone EG
100 Crystal Run Road
Suite 101
Middletown, NY 10941

CADENA project ID: E203361
Project: Ford Ringwood Mines Project
Project number:
Client project scope reference: Sample COC only was used to define project analytical requirements.
Laboratory: ALPHA Laboratories - Mansfield
Laboratory submittal: L1641090
Sample date: 2016-12-13 2016-12-14 2016-12-15
Report received by CADENA: 2017-01-03
Initial Data Verification completed by CADENA: 2017-01-04

The following minor QC exceptions or missing information were noted:

GCMS VOC samples -004, -006, -007, -011, -013, -014, -015, -016, -017, -018, -019, -021, -022, -024, -029, -031, -031, -032, -037 and all QC batch method blank and LCS SURROGATE recoveries were outliers biased high for at least 1 surrogate. Associated client sample results were non-detect so qualification was not required based on these high bias QC outliers.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

43 Soil sample(s) were analyzed for GCMS SVOC-SIM Isotope dilution parameter(s).

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, LCS/LCD RPD, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at <http://clms.cadenaco.com/index.cfm>.

Please contact me if you have any questions.

Sincerely,


Jim Tomalia

Project Scientist

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

ATTACHMENT A
CHAIN OF CUSTODY DOCUMENT(S)



NEW JERSEY CHAIN OF CUSTODY

Service Centers
 Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
 Albany, NY 12205: 14 Walker Way
 Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1
of 5

Date Rec'd in Lab: 12/17/16

ALPHA Job #
L1641090

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Project Information

Project Name: Ford - Ringwood
 Project Location: Ringwood, NJ
 Project # 140802-018
 (Use Project name as Project #)

Deliverables

NJ Full / Reduced
 EQulS (1 File) EQulS (4 File)
 Other

Billing Information

Same as Client Info
 PO #

Client Information

Client: Cornerstone
 Address: 100 Crystal Run Rd
 Middle town NY, 10941
 Phone: 845-695-0252
 Fax:
 Email: Tim.Roeper@cornerstoneeg.com

Project Manager: Tim Roeper
ALPHAQuote #:
Turn-Around Time
 Standard Due Date:
 Rush (only if pre approved) # of Days:

Regulatory Requirement

SRS Residential/Non Residential
 SRS Impact to Groundwater
 NJ Ground Water Quality Standards
 NJ IGW SPLP Leachate Criteria
 Other

Site Information

Is this site impacted by Petroleum? Yes
 Petroleum Product:

These samples have been previously analyzed by Alpha

For EPH, selection is REQUIRED:

Category 1
 Category 2

For VOC, selection is REQUIRED:

1,4-Dioxane
 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

AZ-NS-8270 NS-VOC-8270	MS-0128-PAH-8270								
---------------------------	------------------	--	--	--	--	--	--	--	--

Sample Filtration

Done
 Lab to do
Preservation
 Lab to do
 (Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials														
		Date	Time																
41090-01	B-2016-1-5-5.5	12/13/16	14:00	S	JG	X													
-02	B-2016-1-9-9.5	12/13/16	14:15	S	JG	X													
-03	B-2016-1-13.5-14	12/13/16	14:30	S	JG	X													
-04	B-2016-1-20-20.5	12/14/16	9:45	S	JG	X													
-05	B-2016-2-4.5-5	12/13/16	15:20	S	JG	X													
-06	B-2016-2-11-11.5	12/13/16	15:35	S	JG	X													
-07	B-2016-2-16.5-17	12/13/16	16:15	S	JG	X													
-08	B-2016-2-21.5-22	12/14/16	8:00	S	JG	X													
-09	B-2016-3-5.5-6	12/14/16	11:05	S	JG	X													
-10	B-2016-3-9.5-10	12/14/16	11:15	S	JG	X													

Preservative Code:
 A = None
 B = HCl
 C = HNO₃
 D = H₂SO₄
 E = NaOH
 F = MeOH
 G = NaHSO₄
 H = Na₂S₂O₃
 K/E = Zn Ac/NaOH
 O = Other

Container Code
 P = Plastic
 A = Amber Glass
 V = Vial
 G = Glass
 B = Bacteria Cup
 C = Cube
 O = Other
 E = Encore
 D = BOD Bottle

Westboro: Certification No: MA935
 Mansfield: Certification No: MA015

Container Type A
Preservative A

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Relinquished By:	Date/Time	Received By:	Date/Time
	12/16/16 13:30		12/16/16 13:30
	12/16/16 16:17		12/16/16 18:00
	12/16/16 22:50		12/16/16 22:50
	12/17/16 02:35		12/17/16 02:35



NEW JERSEY CHAIN OF CUSTODY

Service Centers
 Mahwah, NJ 07430: 35 Whitney Rd, Suite 4
 Albany, NY 12205: 14 Walker Way
 Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Westborough, MA 01581
 8 Walkup Dr.
 TEL: 508-898-9220
 FAX: 508-898-9193

Mansfield, MA 02048
 320 Forbes Blvd
 TEL: 508-822-9300
 FAX: 508-822-3288

Page 2
 of 5

Date Rec'd
 in Lab 12/17/16

ALPHA Job #
L1641090

Client Information	Project Information	Deliverables	Billing Information
Client: <u>Cornestone</u>	Project Name: <u>Ford-Ringwood</u>	<input checked="" type="checkbox"/> NJ Full / Reduced	<input checked="" type="checkbox"/> Same as Client Info
Address: <u>100 Crystal Run Rd</u> <u>Middletown, NY 10941</u>	Project Location: <u>Ringwood, NJ</u>	<input type="checkbox"/> EQuIS (1 File) <input type="checkbox"/> EQuIS (4 File)	PO #
Phone: <u>845-695-0252</u>	Project # <u>140802-018</u>	<input type="checkbox"/> Other	
Fax:	(Use Project name as Project #) <input type="checkbox"/>	Regulatory Requirement	
Email: <u>Tim.Ropper@cornestone.com</u>	Project Manager: <u>Tim Ropper</u>	<input type="checkbox"/> SRS Residential/Non Residential	Site Information
	ALPHAQuote #:	<input type="checkbox"/> SRS Impact to Groundwater	Is this site impacted by Petroleum? Yes <input type="checkbox"/>
	Turn-Around Time	<input type="checkbox"/> NJ Ground Water Quality Standards	Petroleum Product:
	Standard <input checked="" type="checkbox"/> Due Date:	<input type="checkbox"/> NJ IGW SPLP Leachate Criteria	
	Rush (only if pre approved) <input type="checkbox"/> # of Days:	<input type="checkbox"/> Other	

These samples have been previously analyzed by Alpha <input type="checkbox"/> For EPH, selection is REQUIRED: <input type="checkbox"/> Category 1 <input type="checkbox"/> Category 2	For VOC, selection is REQUIRED: <input type="checkbox"/> 1,4-Dioxane <input type="checkbox"/> 8011	Other project specific requirements/comments: Please specify Metals or TAL.	ANALYSIS AR-US-SUC-2470 AZ-US-PAH-S22054	Sample Filtration <input type="checkbox"/> Done <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please Specify below)	Total Bottle
ALPHA Lab ID (Lab Use Only) Sample ID Collection Date Time Sample Matrix Sampler's Initials			Sample Specific Comments		

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Time	Sample Matrix	Sampler's Initials	Sample Specific Comments
41090 -11	B-2016-3-14-14.5	12/14/16	11:55	S	JG	
-12	B-2016-4-8.5-9	12/13/16	11:20	S	JG	
-13	B-2016-4-11.0-11.5	12/13/16	11:38	S	JG	
-14	B-2016-4-15-15.5	12/13/16	12:00	S	JG	
-15	B-2016-4-20-20.5	12/13/16	12:20	S	JG	
-16	B-2016-4-23.5-24	12/13/16	12:30	S	JG	
-17	B-2016-5-0.5-1	12/14/16	10:15	S	JG	
-18	B-2016-5-11-11.5	12/14/16	10:25	S	JG	
-19	B-2016-5-15-15.5	12/14/16	10:45	S	JG	
-20	B-2016-6-4.5-5	12/15/16	10:10	S	JG	

Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ K/E = Zn Ac/NaOH O = Other	Container Code: P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle	Westboro: Certification No: MA935 Mansfield: Certification No: MA015	Container Type: <u>A</u> Preservative: <u>A</u>	Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)
---	---	---	--	--

Relinquished By:	Date/Time	Received By:	Date/Time
<u>John DeLuca</u>	12/16/16 13:30	<u>Scott Apple</u>	12/16/16 13:30
<u>Tom Roper</u>	12/16/16 16:17	<u>Tom Roper</u>	12/16/16 18:00
<u>Tom Roper</u>	12-16-16 22:50	<u>Tom Roper</u>	12/16/16 22:50
<u>Tom Roper</u>	12/17/16 12:35	<u>Tom Roper</u>	12/17/16 12:35



NEW JERSEY CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page **3**
of **5**

Date Rec'd in Lab **12/17/16**

ALPHA Job # **41090**

Client Information		Project Information		Deliverables		Billing Information	
Client: Cornstone		Project Name: Ford-Ringwood		<input checked="" type="checkbox"/> NJ Full / Reduced		<input checked="" type="checkbox"/> Same as Client Info	
Address: 100 Crystal Run Rd Middletown, NY 10941		Project Location: Ringwood, NJ		<input type="checkbox"/> EQuIS (1 File) <input type="checkbox"/> EQuIS (4 File)		PO #	
Phone: 845-695-0252		Project # 140802-018		<input type="checkbox"/> Other			
Fax:		(Use Project name as Project #) <input type="checkbox"/>		Regulatory Requirement		Site Information	
Email: Tim.Roeper@cornstone.com		Project Manager: Tim Roeper		<input type="checkbox"/> SRS Residential/Non Residential		Is this site impacted by Petroleum? Yes <input type="checkbox"/>	
		ALPHAQuote #:		<input type="checkbox"/> SRS Impact to Groundwater		Petroleum Product:	
		Turn-Around Time		<input type="checkbox"/> NJ Ground Water Quality Standards			
		Standard <input checked="" type="checkbox"/> Due Date:		<input type="checkbox"/> NJ IGW SPL Leachate Criteria			
		Rush (only if pre approved) <input type="checkbox"/> # of Days:		<input type="checkbox"/> Other			

These samples have been previously analyzed by Alpha <input type="checkbox"/>			ANALYSIS			Sample Filtration			Total Bottle	
For EPH, selection is REQUIRED:	For VOC, selection is REQUIRED:	Other project specific requirements/comments:						<input type="checkbox"/> Done		
<input type="checkbox"/> Category 1	<input type="checkbox"/> 1,4-Dioxane	Please specify Metals or TAL.						<input type="checkbox"/> Lab to do		
<input type="checkbox"/> Category 2	<input type="checkbox"/> 8011							<input type="checkbox"/> Lab to do		
(Please Specify below)										

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	Analysis	Filtration	Preservation	Comments	Total Bottle
		Date	Time							
41090-21	B-2016-6-15-2	12/15/16	10:00	S	JG	X				
-22	B-2016-7-9-9.5	12/15/16	8:40	S	JG	X				
-23	B-2016-7-115-12	12/15/16	8:55	S	JG	X				
-24	B-2016-8-11-115	12/15/16	9:45	S	JG	X				
-25	B-2016-8-9-9.5	12/15/16	9:35	S	JG	X				
-26	B-2016-8-45-5	12/15/16	9:20	S	JG	X				
-27	B-2016-9-6-6.5	12/15/16	10:55	S	JG	X				
-28	B-2016-9-2-2.5	12/15/16	10:40	S	JG	X				
-29	B-2016-10-4-4.5	12/14/16	14:40	S	JG	X				
-30	B-2016-10-9-9.5	12/14/16	14:45	S	JG	X				

Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ K/E = Zn Ac/NaOH O = Other	Container Code P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle	Westboro: Certification No: MA935 Mansfield: Certification No: MA015	Container Type A	Preservative A
---	--	---	---------------------	-------------------

Relinquished By:	Date/Time	Received By:	Date/Time
<i>John Wilkin</i>	12/16/16 13:30	<i>Tom Taber</i>	12/16/16 13:30
<i>Tom Taber</i>	12/16/16 16:19	<i>Tom Taber</i>	12/16/16 18:00
<i>Tom Taber</i>	12/16/16 22:50	<i>Tom Taber</i>	12/16/16 22:50
<i>J. Jojura</i>	12/17/16 02:35	<i>Bob Burt</i>	12/17/16 02:35

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)



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 Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

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 320 Forbes Blvd
 TEL: 508-822-9300
 FAX: 508-822-3288

Page 4
 of 5

Date Rec'd in Lab 12/17/16

ALPHA Job # L1641090

Client Information		Project Information		Deliverables		Billing Information	
Client: <u>Cornerstone</u>		Project Name: <u>Ford-Ringwood</u>		<input checked="" type="checkbox"/> NJ Full / Reduced		<input checked="" type="checkbox"/> Same as Client Info	
Address: <u>100 Crystal Run Rd</u> <u>Middletown, NJ 10941</u>		Project Location: <u>Ringwood, NJ</u>		<input type="checkbox"/> EQUIS (1 File) <input type="checkbox"/> EQUIS (4 File)		PO # <u>L1641096</u>	
Phone: <u>845-645-0252</u>		Project # <u>140802-018</u>		<input type="checkbox"/> Other			
Fax:		(Use Project name as Project #) <input type="checkbox"/>		Regulatory Requirement		Site Information	
Email: <u>Tim.Rooper@cornerstone.com</u>		Project Manager: <u>Tim Rooper</u>		<input type="checkbox"/> SRS Residential/Non Residential		Is this site impacted by Petroleum? Yes <input type="checkbox"/>	
		ALPHAQuote #:		<input type="checkbox"/> SRS Impact to Groundwater		Petroleum Product:	
		Turn-Around Time		<input type="checkbox"/> NJ Ground Water Quality Standards			
		Standard <input checked="" type="checkbox"/> Due Date:		<input type="checkbox"/> NJ IGW SPLP Leachate Criteria			
		Rush (only if pre approved) <input type="checkbox"/> # of Days:		<input type="checkbox"/> Other			


These samples have been previously analyzed by Alpha

For EPH, selection is REQUIRED:	For VOC, selection is REQUIRED:	Other project specific requirements/comments:	ANALYSIS	Sample Filtration	Total Bottle
<input type="checkbox"/> Category 1 <input type="checkbox"/> Category 2	<input type="checkbox"/> 1,4-Dioxane <input type="checkbox"/> 8011	Please specify Metals or TAL.		<input type="checkbox"/> Done <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please Specify below)	

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	A2-13-Svc C - 8270 A2-13-PAH-827034											Sample Specific Comments				
		Date	Time																		
41090-31	B-2016-10-11.5-12	12/14/16	14:50	S	JG	X															
-32	B-2016-10-20-21.5	12/14/16	15:40	S	JG	X															
-33	B-2016-11-5-5.5	12/15/16	13:15	S	JG	X															
-34	B-2016-11-11-11.5	12/15/16	13:30	S	JG	X															
-35	B-2016-12-5.5-6	12/15/16	11:40	S	JG	X															
-36	B-2016-12-4-4.5	12/15/16	11:30	S	JG	X															
-37	B-2016-13-5-5.5	12/14/16	13:15	S	JG	X															
-38	B-2016-13-10-10.5	12/14/16	14:00	S	JG	X															
-39	B-2016-13-15-15.5	12/14/16	14:20	S	JG	X															
-40	B-2016-14-4-4.5	12/15/16	12:45	S	JG	X															

Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ K/E = Zn Ac/NaOH O = Other	Container Code P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle	Westboro: Certification No: MA935 Mansfield: Certification No: MA015	Container Type A	Preservative A											Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)
---	--	---	---------------------	-------------------	--	--	--	--	--	--	--	--	--	--	--

Relinquished By:	Date/Time	Received By:	Date/Time
<i>John Eileen</i>	12/16/16 13:30	<i>Tom Taylor</i>	12/16/16 13:50
<i>Tom Taylor</i>	12/16/16 16:17	<i>Tom Taylor</i>	12-16-16 1800
<i>Tom Taylor</i>	12-16-16 22:50	<i>Tom Taylor</i>	12/16/16 20:50
<i>Tom Taylor</i>	12/17/16 02:35	<i>Tom Taylor</i>	12/17/16 02:35

 NEW JERSEY CHAIN OF CUSTODY	Service Centers Mahwah, NJ 07430: 35 Whitney Rd, Suite 5 Albany, NY 12205: 14 Walker Way Tonawanda, NY 14150: 275 Cooper Ave, Suite 105	Page <u>5</u> of <u>5</u>	Date Rec'd in Lab <u>12/17/16</u>	ALPHA Job # <u>L1641090</u>							
	Westborough, MA 01581 8 Walkup Dr. TEL: 508-898-9220 FAX: 508-898-9193	Mansfield, MA 02048 320 Forbes Blvd TEL: 508-822-9300 FAX: 508-822-3288	Project Information		Deliverables	Billing Information					
Client Information Client: <u>Cornstone</u> Address: <u>100 Crystal Run Rd</u> <u>Middle town, NY 10941</u> Phone: <u>845-695-0252</u> Fax: _____ Email: <u>Tim.Rooper@cornstoneeg.com</u>		Project Name: <u>Ford-Ringwood</u> Project Location: <u>Ringwood, NJ</u> Project # <u>140802-018</u> (Use Project name as Project #) <input type="checkbox"/>		<input checked="" type="checkbox"/> NJ Full / Reduced <input type="checkbox"/> EQUIS (1 File) <input type="checkbox"/> EQUIS (4 File) <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Same as Client Info PO # _____						
Project Manager: <u>Tim Rooper</u> ALPHAQuote #: _____		Regulatory Requirement <input type="checkbox"/> SRS Residential/Non Residential <input type="checkbox"/> SRS Impact to Groundwater <input type="checkbox"/> NJ Ground Water Quality Standards <input type="checkbox"/> NJ IGW SPLP Leachate Criteria <input type="checkbox"/> Other		Site Information Is this site impacted by Petroleum? Yes <input type="checkbox"/> Petroleum Product: _____							
Turn-Around Time Standard <input checked="" type="checkbox"/> Due Date: _____ Rush (only if pre approved) <input type="checkbox"/> # of Days: _____		ANALYSIS		Sample Filtration							
These samples have been previously analyzed by Alpha <input type="checkbox"/>		For EPH, selection is REQUIRED: <input type="checkbox"/> Category 1 <input type="checkbox"/> Category 2		For VOC, selection is REQUIRED: <input type="checkbox"/> 1,4-Dioxane <input type="checkbox"/> 8011		Other project specific requirements/comments: Please specify Metals or TAL.		<input type="checkbox"/> Done <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please Specify below)		Total Bottle	
ALPHA Lab ID (Lab Use Only) Sample ID Collection Date Time Sample Matrix Sampler's Initials											Sample Specific Comments
41090 -41 B-2016-14-10-10.5 12/15/16 13:00 S JG		X									
-42 Dup-1 12/14/16 12:00 S JG		X									
-43 Dup-2 12/15/16 12:00 S JG		X									
Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ K/E = Zn Ac/NaOH O = Other		Container Code: P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle		Westboro: Certification No: MA935 Mansfield: Certification No: MA015		Container Type <u>A</u> Preservative <u>A</u>		Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)			
Relinquished By: _____ Date/Time: _____		Received By: _____ Date/Time: _____		_____ Date/Time: _____		_____ Date/Time: _____					
_____ Date/Time: _____		_____ Date/Time: _____		_____ Date/Time: _____		_____ Date/Time: _____					
_____ Date/Time: _____		_____ Date/Time: _____		_____ Date/Time: _____		_____ Date/Time: _____					

ATTACHMENT B
VALIDATION CHECKLIST SUMMARY

VALIDATED DATA	sub item	criteria reference	general observations	GCMS SVOC SIM
PROJECT SCOPE/LAB REQUIREMENTS				
SOW available?				2009
Scope validation criteria referenced				CLP-2001 organics, CLP-1992 inorganics
Lab certifications required				New Jersey NJDEP-MA015/MA935
Lab single blind PE samples completed				NOT AVAILABLE
SAMPLING ISSUES				
SAMPLE RECEIPT OBSERVATIONS				
holding times				OK
preservation				OK
temperature of cooler - degrees C				4.1
COC discrepancies				OK
sample integrity (containers, amounts)				4oz GLASS no pres
ANALYTICAL/PREP GENERAL				
prep batch		LAB		WG963086, WG963089, WG963107
prep date		LAB		20-Dec
analytical batch		LAB		WG964508, WG964509
analytical date		LAB		12/30, 12/24, 12/25
instrument ID		LAB		BNA5
Instrument Tune		METHOD	tune	OK
Instrument Performance Checks		METHOD	tailing, degradation	NA
ICAL (Initial Calibration Curve)	CURVE ID	METHOD	RRT, SPCC, CCC, CURVE FITS,	ICAL13250
ICAL (Initial Calibration Curve)	CURVE DATE	METHOD		29-Dec
ICV (Initial Calibration Verification)		METHOD	max 30%	OK
CCV (Continuing Calibration Verification)		METHOD	max 20%/50%	OK
Target Compound Lists		SCOPE/COC		1,4-dioxane
Reporting Limits (RL/PQL/LOQ) compliant		SCOPE	mdl 4ug/kg	8ug/kg
Blanks- method/calibration	method blank	NFG		OK
LCS (Laboratory Control Spikes)		lab control limits	by method	40-140%, 30%
MS/MSD (Matrix Spikes)		lab control limits	by method	NO MS IN BATCH
Sample duplicates		lab control limits	NA	NA
Internal standard reponses/RRT		METHOD	50-200%	OK
Surrogate recoveries		lab control limits	SVOC BN surrogates	15-110%
Qualitative criteria met		METHOD		OK
TICS (Tentatively Identified Compounds)		METHOD		NA
TIC blanks		NFG		NA
Trip blanks		NFG		NA
Field blanks		NFG		NA
Field duplicates		SCOPE		NA
Post Digestion Spikes (PDS)		METHOD		NA
Serial Dilution (SD)		METHOD		NA
CRQL checks performed?		SCOPE		NA
E flagging required		LAB		NA
GENERAL QC TRACKING				
Control Limits		SCOPE	see above	LABORATORY
Certificates of Analysis for primary standards		VALIDATOR		NOT PROVIDED
Working/Intermediate standard prep calculations		VALIDATOR	prep log	OK
Prep technique		not specified	VARIABLES	3570
Prep sample volumes/mass		not specified	VARIABLES	5grams target
OVERALL				
Data Reportable?				YES



E-Mail Date: 2017-01-11
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER – 140802-018
CADENA PROJECT E203361
SAMPLES COLLECTED DECEMBER 2016
SUBMITTAL #: L1641084

PREPARED BY:
CADENA, INC.
1099 Highland Drive
Ann Arbor, MI 48108
Telephone: 517-819-0356
Fax: 734-975-6709
Contact: Jim Tomalia (jtomalia@cadenaco.com)
Date: 2017-01-11
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LISTS OF APPNEDICES

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APPENDIX 1	SAMPLING AND ANALYSIS SUMMARY
APPENDIX 2	LABORATORY DOCUMENTS SUBMITTED FOR REVIEW
APPENDIX 3	ANALYTICAL RESULTS SUMMARY
APPENDIX 4	QUALFIED RESULTS SUMMARY
APPENDIX 5	INITIAL LEVEL 2 DATA PACKAGE VERIFICATION REPORT (DVR)

LIST OF ATTACHMENTS

ATTACHMENT A	LAB DELIVERABLE REFERENCES INCLUDING CHAIN OF CUSTODY DOCUMENT(S)
ATTACHMENT B	VALIDATION CHECKLIST SUMMARY GRID

1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by ALPHA Analytical Laboratory Mansfield and Westborough MA the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted. The sampling and analysis summary listing sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. The summary of all of the field sample results and qualifiers associated with this submittal is presented in Appendix 3. Executive summary of qualified data only is reported in Appendix 4. Lab deliverables relevant to this submittal are included as attachments at the end of this report.

Table 1.1

Lab Sample ID	Sample ID	Collection Date	Collection Time	GCMS SIM	SVOC
		(mm/yy/dd)	(hh:mm:ss)		
L1641084-01	PW-1	12/15/2016	7:30:00	X	
L1641084-02	PW-2	12/15/2016	7:40:00	X	

Table 1.2 below lists the project-specific analytes or analyte lists associated with the methods referenced in Table 1.1:

Table 1.2

<i>Parameter</i>	<i>Reference Method</i>	<i>Analyte Listing</i>
Semi-Volatile Organics	OSW-8270D/SIM - ISOTOPE DILUTION	1,4-Dioxane only

All "OSW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third editions final update IV or latest revision (with all subsequent revisions). The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.

Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis.

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where

available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

- i.) “Standard Operating Procedure HW-6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review” USEPA Region 2 as identified in project QAPP.
- ii.) “Standard Operating Procedure HW-2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program” as identified in the project QAPP.

The Level VI review findings are summarized in the Executive Summary section below.

Process controls for the validation review of the level 4 laboratory data package are referenced in the tables by method/analytical group within the body of this report.

Definitions for data qualifiers that may have been incorporated into the data tables for this report are noted below:

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS SVOC/SIM

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted during the validation review:

GCMS SVOC-SIM

GENERAL METHODOLOGY – Laboratory used GCMS SVOC method 8270D-SIM with method 3570 prep. The 1,4-dioxane analyte concentration was quantitated against the 1,4- dioxane-D8 surrogate which was also used as the internal standard. Method is considered to be isotope dilution however the “surrogate as internal standard” technique is not considered to be the industry standard quantitation approach. This would be considered to be a “results corrected for percent recovery” quantification technique so data generated using these calculations would not be comparable to field sample results generated by conventional internal standard quantification techniques (high bias of field sample results would be expected using this quantification technique).

Introducing the internal standard, 1,4-dioxane-d8 prior to sample extraction treats the internal standard as a surrogate so precludes using the 50% to 200% internal standard recovery rule as referenced. The internal standard recovery rule is therefore applied only to the surrogates associated with samples that had internal standards injected prior to analysis, and this data is provided in the Level 4, Form 8 Internal Standard and RT summary table. If the 1,4-dioxane-d8 data is to be legitimately considered to be an internal standard as well as surrogate it should, at a minimum, be subject to the 50%-200% response (recovery) criteria listed in the method. The current lower control limit for this internal standard as a surrogate is 15%. **In the case of this lab submittal the internal standard responses for both of the field samples were within the 50%-200% of daily CCV internal standard response criteria so the data is considered to be in compliance with method criteria.**

VERIFICATION SUMMARY

A level 2 data package was evaluated prior to receipt of the level 4 laboratory data package and the following findings were reported:

There were no significant QC anomalies or exceptions to report.

2.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D -SIM analysis with ISOTOPE DILUTION– GENERAL QC REQUIREMENTS
See Attachments for submittal-specific review summary of QC requirements noted below

The target analyte list was defined by the client-project as 1,4-dioxane.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs met the method criteria for instrument sensitivity, retention time drift and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

2.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

2.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria for retention time and response. See executive summary for information concerning quantitation technique associated with internal standards.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re-analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were quantitated against the 1,4-dichlorobenzene-d4 internal standard and were within the established laboratory control limits unless noted otherwise in verification/validation summary. Note: surrogate analyte responses (1,4-dioxane-D8) were also used as internal standards.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed for the target analyte SVOCs. The LCS recoveries and LCS/LCSD RPD were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

NOTE: MS/MSD QC samples were not analyzed as part of this QC batch.

Validator does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

All target analytes were reported based on comparison to project-specific target analyte requirements.

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

Not required for this sampling event or laboratory submittal.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

Method blanks are evaluated if detected above the MDL. Client sample results that are less than 5 times the amount found in the blank for organic analytes (10X if analyte is considered to be a common lab contaminant) or less than 10 times the amount found in the blank for inorganic/metals analysis are flagged as non-detect at the RL with a UB flag if sample result is less than RL or non-detect at the concentration reported with a B flag if sample result is above the RL. See verification/validation summary for findings specific to this submittal.

3.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using the criteria noted in the following sections.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

3.1 SAMPLE PRESERVATION AND HOLDING TIMES

Holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

- i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.
- ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

All sample extractions and/or analyses were performed within the specified holding times unless noted otherwise in verification/validation summary.

EPA Sample Holding Time and Preservation Requirements

<i>Parameter</i>	<i>Reference Method</i>	<i>Matrix</i>	<i>Preservation & Storage</i>	<i>Holding Times</i>
Semi-volatile Organics by GCMS	OSW-8270D-SIM	PAINT	Refrigeration 0-6°C	14 days Extraction 40 days Analysis

3.2 METHOD BLANK SUMMARY

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

4.0 USABILITY AND COMPARABILITY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

5.0 QC SUMMARY

All sample results were compliant with the project specific QAPP standard (if available) for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1
(Sample Analytical Summary – SAS table)

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361

Laboratory: ALPHA Laboratories-Mansfield

Laboratory Submittal: L1641084

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS SVOC SIM
L1641084-01	PW-1	12/15/2016	7:30:00	X
L1641084-02	PW-2	12/15/2016	7:40:00	X

APPENDIX 2
(Laboratory Level 4 Data Package Table of Contents)

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APPENDIX 3
(Analytical Results Summary – ARS Table)

Analytical Results Summary

CADENA Project ID: E203361

Laboratory: ALPHA Laboratories - Mansfield

Laboratory Submittal: L1641084

Sample Name:	PW-1	PW-2
Lab Sample ID:	L1641084-01	L1641084-02
Sample Date:	12/15/2016	12/15/2016

Analyte	Cas No.	Report		Units	Valid Qualifier	Report		Units	Valid Qualifier
		Result	Limit			Result	Limit		

GC/MS SVOC

OSW-8270C/D-SIM

1,4-DIOXANE	123-91-1	ND	7.17	ug/kg	---	ND	6.96	ug/kg	---
-------------	----------	----	------	-------	-----	----	------	-------	-----

APPENDIX 4
(Qualified Analytical Summary table not required for this submittal)

APPENDIX 5
(Level 2 data package verification report)



January 04, 2017

Tim Roeper
Cornerstone EG
100 Crystal Run Road
Suite 101
Middletown, NY 10941

CADENA project ID: E203361
Project: Ford Ringwood Mines Project - Paint
Project number:
Client project scope reference: Sample COC only was used to define project analytical requirements.
Laboratory: ALPHA Laboratories - Mansfield
Laboratory submittal: L1641084
Sample date: 2016-12-15
Report received by CADENA: 2017-01-04
Initial Data Verification completed by CADENA: 2017-01-04

There were no significant QC anomalies or exceptions to report.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

2 Waste sample(s) were analyzed for GCMS SVOC-SIM Isotope dilution parameter(s).

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, LCS/LCD RPD, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at <http://clms.cadenaco.com/index.cfm>.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Inc, 1099 Highland Drive, Suite E, Ann Arbor, MI 48108 517-819-0356

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

ATTACHMENT A
CHAIN OF CUSTODY DOCUMENT(S)



**NEW JERSEY
CHAIN OF
CUSTODY**

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers

Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1

of 1

Date Rec'd
in Lab 12/17/16

ALPHA Job #

11691084

Project Information

Project Name: Ford - Ringwood

Project Location: Ringwood, NJ

Project # 140802-018

(Use Project name as Project #)

Project Manager: Tim Roesper

ALPHAQuote #:

Turn-Around Time

Standard

Due Date:

Rush (only if pre approved)

of Days:

Deliverables

NJ Full / Reduced

EQuIS (1 File)

EQuIS (4 File)

Other

Billing Information

Same as Client Info

PO #

Client Information

Client: Ford - Ringwood (Cornston)

Address: Peters Mine Road

100 Crystal Run Rd, Middletown, NJ 0941

Phone: 845-695-0252

Fax:

Email: Tim.Roesper@cornstonenec.com

Regulatory Requirement

SRS Residential/Non Residential

SRS Impact to Groundwater

NJ Ground Water Quality Standards

NJ IGW SPLP Leachate Criteria

Other

Site Information

Is this site impacted by Petroleum? Yes

Petroleum Product:

These samples have been previously analyzed by Alpha

ANALYSIS

For EPH, selection is REQUIRED:

- Category 1
 Category 2

For VOC, selection is REQUIRED:

- 1,4-Dioxane
 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

A2-145-SVEL-8270
A2-145-50-105 P14H-810584

Sample Filtration

- Done
 Lab to do
Preservation
 Lab to do

(Please Specify below)

Sample Specific Comments

T
o
t
a
l
B
o
t
t
l
e

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	Analysis	Filtration	Preservation	Comments
		Date	Time						
41084-01	PW-1	12/15/16	7:30	Paint Waste	JG	X			
-02	PW-2	12/15/16	7:40	Paint Waste	JG	X			

- Preservative Code:**
A = None
B = HCl
C = HNO₃
D = H₂SO₄
E = NaOH
F = MeOH
G = NaHSO₄
H = Na₂S₂O₃
K/E = Zn Ac/NaOH
O = Other

- Container Code**
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935

Mansfield: Certification No: MA015

Container Type O

Preservative A

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Relinquished By:	Date/Time	Received By:	Date/Time
John [Signature]	12/16/16 13:31	Scott [Signature]	12/16/16 13:31
Deborah [Signature]	12/16/16 16:17	[Signature]	12-16-16 1800
[Signature]	12/16/16 22:50	[Signature]	12/16/16 22:50
[Signature]	12/17/16 02:35	[Signature]	12/17/16 02:35

Form No: 01-14 HC (rev. 30-Sept-2013)

ATTACHMENT B
VALIDATION CHECKLIST SUMMARY

VALIDATED DATA	sub item	criteria reference	general observations	GCMS SVOC SIM
PROJECT SCOPE/LAB REQUIREMENTS				
SOW available?				2009
Scope validation criteria referenced				CLP-2001 organics, CLP-1992 inorganics
Lab certifications required				New Jersey NJDEP-MA015/MA935
Lab single blind PE samples completed				NOT AVAILABLE
SAMPLING ISSUES				
SAMPLE RECEIPT OBSERVATIONS				
holding times				OK
preservation				OK
temperature of cooler - degrees C				4.3
COC discrepancies				OK
sample integrity (containers, amounts)				PLASTIC BAGS
ANALYTICAL/PREP GENERAL				
prep batch		LAB		WG963084
prep date		LAB		20-Dec
analytical batch		LAB		WG964509
analytical date		LAB		3-Jan
instrument ID		LAB		BNA6
Instrument Tune		METHOD	tune	OK
Instrument Performance Checks		METHOD	tailing, degradation	NA
ICAL (Initial Calibration Curve)	CURVE ID	METHOD	RRT, SPCC, CCC, CURVE FITS,	ICAL13258
ICAL (Initial Calibration Curve)	CURVE DATE	METHOD		29-Dec
ICV (Initial Calibration Verification)		METHOD	max 30%	OK
CCV (Continuing Calibration Verification)		METHOD	max 20%/50%	OK
Target Compound Lists		SCOPE/COC		1,4-dioxane
Reporting Limits (RL/PQL/LOQ) compliant		SCOPE	mdl 4ug/kg	8ug/kg
Blanks- method/calibration	method blank	NFG		OK
LCS (Laboratory Control Spikes)		lab control limits	by method	40-140%, 30%
MS/MSD (Matrix Spikes)		lab control limits	by method	NO MS IN BATCH
Sample duplicates		lab control limits	NA	NA
Internal standard reponses/RRT		METHOD	50-200%	OK
Surrogate recoveries		lab control limits	SVOC BN surrogates	15-110%
Qualitative criteria met		METHOD		OK
TICS (Tentatively Identified Compounds)		METHOD		NA
TIC blanks		NFG		NA
Trip blanks		NFG		NA
Field blanks		NFG		NA
Field duplicates		SCOPE		NA
Post Digestion Spikes (PDS)		METHOD		NA
Serial Dilution (SD)		METHOD		NA
CRQL checks performed?		SCOPE		NA
E flagging required		LAB		NA
GENERAL QC TRACKING				
Control Limits		SCOPE	see above	LABORATORY
Certificates of Analysis for primary standards		VALIDATOR		NOT PROVIDED
Working/Intermediate standard prep calculations		VALIDATOR	prep log	OK
Prep technique		not specified	VARIABLES	3570
Prep sample volumes/mass		not specified	VARIABLES	5grams target
OVERALL				
Data Reportable?				YES