

**APPENDIX C:
Boring Logs
Well Construction Logs**

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-101(MW)

Project: Rivers Edge Wayland

City: Wayland

State: MA

BORING INFORMATION		WELL CONSTRUCTION DETAILS		VERTEX
Start Date:	<u>03/26/2019</u>	Well Depth (ft):	<u>20.0</u>	
Completion Date:	<u>03/26/2019</u>	Boring Depth (ft):	<u>20.0</u>	
Personnel:	<u>Kristen Sarson</u>	Well Diameter (in):	<u>2.00</u>	
Drilling Co.:	<u>Geosearch</u>	Screen Length (ft):	<u>'10-20</u>	
Method:	<u>Geoprobe</u>	Slot Size (in):	<u>0.010</u>	
Refusal (Y/N):	<u>N</u>	Completion Type:	<u>Roadbox</u>	
		Casing Diameter (in):	<u>2.0</u>	
NOTES				LOCATION
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System				Lat: <u>42.3640</u>
2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.				Long: <u>-71.3811</u>
				TOC (ft): _____
				GS Elev (ft): _____

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
0	50		Sand and Silt	Dark brown and black fine SAND and SILT, some medium to coarse sand and f-c gravel, trace debris (brick, concrete).	0 feet	Dry		0.1
5	32		Coarse to Fine Sand	Tan f-c SAND.		Damp		0.1
				Tan f-c SAND, some f-c gravel, trace silt.		Damp		0.1
10	29			Tan f-c SAND, some f-c gravel.		Damp		0.1
15	46			Tan f-c SAND, some f-c gravel.		Wet		0.0
				Tan f-c SAND, some f-c gravel, trace silt.		Wet		0.0
20								

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-102(MW)

Project: Rivers Edge Wayland City: Wayland State: MA

BORING INFORMATION	WELL CONSTRUCTION DETAILS	VERTEX
Start Date: <u>03/26/2019</u>	Well Depth (ft): <u>20.0</u>	LOCATION
Completion Date: <u>03/26/2019</u>	Boring Depth (ft): <u>20.0</u>	
Personnel: <u>Kristen Sarson</u>	Well Diameter (in): <u>2.00</u>	
Drilling Co.: <u>Geosearch</u>	Screen Length (ft): <u>'10-20</u>	
Method: <u>Geoprobe</u>	Slot Size (in): <u>0.010</u>	
Refusal (Y/N): <u>N</u>	Completion Type: <u>Roadbox</u>	
NOTES 1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System 2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.		Lat: <u>42.3642</u> Long: <u>-71.3824</u> TOC (ft): _____ GS Elev (ft): _____

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
	24		Medium to Fine Sand	Dark brown fine to medium SAND, some silt, trace organics (roots).	0 feet	Damp		0.1
5	28		Sand and Silt	Dark brown fine SAND and SILT, some organics (wood and roots).		Damp		0.1
			Coarse to Fine Sand	Tan fine to coarse SAND, layer of crushed stone at 8 feet bgs.		Dry		
10	30		Sand and Gravel	Tan f-c SAND and f-c GRAVEL, trace silt.		Dry		0.0
15	60			Tan f-c SAND and f-c GRAVEL, trace silt.		Wet		0.0
20								

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-103(MW)

Project: Rivers Edge Wayland

City: Wayland

State: MA

BORING INFORMATION		WELL CONSTRUCTION DETAILS		VERTEX
Start Date:	<u>03/27/2019</u>	Well Depth (ft):	<u>35.0</u>	
Completion Date:	<u>03/27/2019</u>	Boring Depth (ft):	<u>35.0</u>	
Personnel:	<u>Kristen Sarson</u>	Well Diameter (in):	<u>2.00</u>	
Drilling Co.:	<u>Geosearch</u>	Screen Length (ft):	<u>'25-35</u>	
Method:	<u>Geoprobe</u>	Slot Size (in):	<u>0.010</u>	
Refusal (Y/N):	<u>N</u>	Completion Type:	<u>Roadbox</u>	
		Casing Diameter (in):	<u>2.0</u>	

LOCATION	
Lat:	<u>42.3636</u>
Long:	<u>-71.3825</u>
TOC (ft):	<u> </u>
GS Elev (ft):	<u> </u>

NOTES

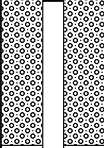


- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System
- The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
	42				0 feet			
			Fine Sands	TOPSOIL - Brown fine sand and silt, some organics (roots).		Dry		44.3
			Sand and Silt	Light brown fine to medium SAND and SILT, trace coarse gravel.		Dry		
			Sand and Gravel	Brown f-c SAND and coarse GRAVEL, some crushed stone.		Dry		
5	43		Coarse to Fine Sand	Tan f-c SAND.		Damp		2.0
10	29			Tan f-c SAND, little coarse gravels and silt.		Damp		6.3
15	60							6.2
20	55					Damp		2.2

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-103(MW)

Project: Rivers Edge Wayland City: Wayland State: MA

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
55	55		Coarse to Fine Sand	Tan f-c SAND, little coarse gravel.		Damp		2.2
25	60			Tan f-c SAND, little coarse gravel.		Damp		0.6
30	60		Medium to Fine Sand	Tan fine to medium SAND, little coarse sand.		Wet		0.1
35								
40								
45								

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-104(MW)

Project: Rivers Edge Wayland

City: Wayland

State: MA

BORING INFORMATION		WELL CONSTRUCTION DETAILS		VERTEX
Start Date:	<u>03/26/2019</u>	Well Depth (ft):	<u>36.5</u>	
Completion Date:	<u>03/26/2019</u>	Boring Depth (ft):	<u>36.5</u>	
Personnel:	<u>Kristen Sarson</u>	Well Diameter (in):	<u>2.00</u>	
Drilling Co.:	<u>Geosearch</u>	Screen Length (ft):	<u>26.5-36.5</u>	
Method:	<u>Geoprobe</u>	Slot Size (in):	<u>0.010</u>	
Refusal (Y/N):	<u>N</u>	Completion Type:	<u>Roadbox</u>	
		Casing Diameter (in):	<u>2.0</u>	

LOCATION

Lat: 42.3635
 Long: -71.3828
 TOC (ft): _____
 GS Elev (ft): _____

NOTES

- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System
- The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
	42		Sand and Silt	Grey fine SAND and SILT, trace f-c gravel.	0 feet			46.1
			Medium to Fine Sand	Tan and orange fine to medium SAND, trace f-c gravel and debris (asphalt).				
			Gravel	Crushed STONE.				
			Sand and Silt	Grey fine SAND and SILT, trace debris (asphalt).				
5	20			Tan and orange fine to medium SAND and SILT, trace f-c gravel and debris (asphalt).				5.2
10	30		Coarse to Fine Sand	Tan and grey f-c SAND.		Damp		12.6
15	15			Tan f-c SAND, some f-c gravel.		Dry		7.8
20	15		Gravel	Crushed STONE.		Dry		
						Dry		0.5

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-104(MW)

Project: Rivers Edge Wayland

City: Wayland

State: MA

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
15	15		Sand and Gravel	Tan and grey f-c SAND and f-c GRAVEL.		Dry		0.5
25	60		Coarse to Fine Sand	Tan and grey f-c SAND, trace f-c gravel and silt.		Dry		0.5
30	60		Sand and Gravel	Tan and grey f-c SAND and f-c GRAVEL.		Dry		0.1
35			Coarse to Fine Sand	Tan f-c SAND.		Wet		
40								
45								

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-105(MW)

Project: Rivers Edge Wayland

City: Wayland

State: MA

BORING INFORMATION		WELL CONSTRUCTION DETAILS		VERTEX
Start Date:	<u>03/27/2019</u>	Well Depth (ft):	<u>37.0</u>	
Completion Date:	<u>03/27/2019</u>	Boring Depth (ft):	<u>37.0</u>	
Personnel:	<u>Kristen Sarson</u>	Well Diameter (in):	<u>2.00</u>	
Drilling Co.:	<u>Geosearch</u>	Screen Length (ft):	<u>'27-37</u>	
Method:	<u>Geoprobe</u>	Slot Size (in):	<u>0.010</u>	
Refusal (Y/N):	<u>N</u>	Completion Type:	<u>Roadbox</u>	
		Casing Diameter (in):	<u>2.0</u>	

LOCATION

Lat: 42.3637

Long: -71.3829

TOC (ft): _____

GS Elev (ft): _____

NOTES

- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System
- The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
	32		Fine Sands	TOPSOIL - Brown fine SAND and SILT, trace organics (roots).	0 feet	Damp		0.4
			Coarse to Fine Sand	Light brown f-c SAND, some silt, trace f-c gravel.		Damp		
5	28			Light brown fine to medium SAND grading to f-c SAND, trace f-c gravel and silt.		Dry		0.4
10	48			Tan f-c SAND.		Dry		0.3
15	60							0.3
20	60					Dry		0.1

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-105(MW)

Project: Rivers Edge Wayland

City: Wayland

State: MA

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
0 - 25	60		Coarse to Fine Sand	Tan f-c SAND, trace f-c gravel.		Dry		0.1
25 - 30	60			Tan f-c SAND, trace f-c gravel.		Dry		0.1
30 - 31			Sand and Silt	Tan fine SAND and SILT.				
31 - 32			Gravel	Crushed STONE.		Dry		
32 - 33			Medium to Fine Sand	Tan fine to medium SAND, some silt, trace coarse gravel.		Dry		
33 - 35	49			Tan fine to medium SAND, some silt and coarse sand.		Dry		0.0
35 - 40			Coarse to Fine Sand	Tan f-c SAND, little f-c gravel, trace fine gravel.		Wet		
40 - 45								

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-106(MW)

Project: Rivers Edge Wayland

City: Wayland

State: MA

BORING INFORMATION		WELL CONSTRUCTION DETAILS		VERTEX
Start Date:	<u>03/27/2019</u>	Well Depth (ft):	<u>37.0</u>	
Completion Date:	<u>03/28/2019</u>	Boring Depth (ft):	<u>37.0</u>	
Personnel:	<u>Kristen Sarson</u>	Well Diameter (in):	<u>2.00</u>	
Drilling Co.:	<u>Geosearch</u>	Screen Length (ft):	<u>'27-37</u>	
Method:	<u>Geoprobe</u>	Slot Size (in):	<u>0.010</u>	
Refusal (Y/N):	<u>N</u>	Completion Type:	<u>Roadbox</u>	
		Casing Diameter (in):	<u>2.0</u>	

LOCATION

Lat: 42.3637
 Long: -71.3836
 TOC (ft): _____
 GS Elev (ft): _____

NOTES

- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System
- The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
	43		Asphalt Medium to Fine Sand	ASPHALT. Tan fine to medium SAND, trace coarse sand.	0 feet	Dry Damp		0.0
			Gravel Coarse to Medium Sand	Crushed STONE. Tan medium to coarse SAND, trace fine sand.		Dry Damp		
5	33			Tan medium to coarse SAND, trace fine sand.		Damp		0.7
10	60		Coarse to Fine Sand	Tan f-c SAND.		Damp		1.3
15	49			Tan f-c SAND, some coarse gravel.		Damp		0.1
20	50					Dry		0.1

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-106(MW)

Project: Rivers Edge Wayland

City: Wayland

State: MA

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
50	50		Coarse to Fine Sand	Tan f-c SAND, trace fine gravel.		Dry		0.1
25	52		Medium to Fine Sand	Orange fine to medium SAND. Orange fine to medium SAND, little coarse sand.		Damp Damp		0.0
30	60							0.0
35				Orange fine to medium SAND, little coarse sand.		Wet		
40								
45								

SOIL BORING

V-107

Project: Rivers Edge Wayland City: Wayland State: MA

BORING INFORMATION		LOCATION	
Start Date:	<u>03/27/2019</u>	Lat:	<u>-71.38259100</u>
Completion Date:	<u>03/27/2019</u>	Long:	<u>42.36362300</u>
Personnel:	<u>Kristen Sarson</u>	GS Elev (ft):	<u>0.0</u>
Drilling Co.:	<u>Geosearch</u>		
Method:	<u>Geoprobe</u>		
Refusal (Y/N):	<u>N</u>		
Boring Depth (ft):	<u>10.0</u>		



NOTES

- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System
- The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		25		Coarse to Fine Sand	Light brown f-c SAND, some f-c gravel, trace silt.	Damp		0.6
5		20		Sand and Gravel	Light brown f-c SAND and f-c GRAVEL.	Damp		2.6
10								
15								
20								

SOIL BORING


V-108

Project: Rivers Edge Wayland City: Wayland State: MA

BORING INFORMATION		LOCATION		VERTEX
Start Date:	<u>03/27/2019</u>	Lat:	<u>-71.38275400</u>	
Completion Date:	<u>03/27/2019</u>	Long:	<u>42.36333100</u>	
Personnel:	<u>Kristen Sarson</u>	GS Elev (ft):	<u>0.0</u>	
Drilling Co.:	<u>Geosearch</u>			
Method:	<u>Geoprobe</u>			
Refusal (Y/N):	<u>N</u>			
Boring Depth (ft):	<u>10.0</u>			

NOTES

- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System
- The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		38			Tan and orange fine to medium SAND, some coarse sand and coarse gravel.	Dry		2.3
5		41						1.5
10								
15								
20								

SOIL BORING

V-109

Project: Rivers Edge Wayland City: Wayland State: MA

BORING INFORMATION		LOCATION		VERTEX
Start Date:	<u>03/27/2019</u>	Lat:	<u>-71.38290300</u>	
Completion Date:	<u>03/27/2019</u>	Long:	<u>42.36342700</u>	
Personnel:	<u>Kristen Sarson</u>	GS Elev (ft):	<u>0.0</u>	
Drilling Co.:	<u>Geosearch</u>			
Method:	<u>Geoprobe</u>			
Refusal (Y/N):	<u>N</u>			
Boring Depth (ft):	<u>10.0</u>			

NOTES

- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System
- The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		20		Asphalt	ASPHALT.	Damp		1.7
5		50		Medium to Fine Sand	Tan and orange fine to medium SAND, some coarse sand, trace coarse gravel.			2.1
10								
15								
20								

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-110

BORING INFORMATION

LOCATION



Start Date: 03/27/2019
 Completion Date: 03/27/2019
 Personnel: Kristen Sarson
 Drilling Co.: Geosearch
 Method: Geoprobe
 Refusal (Y/N): N
 Boring Depth (ft): 10.0

Lat: -71.38295900
 Long: 42.36345700
 GS Elev (ft): 0.0

NOTES

- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System
- The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		60		Asphalt	ASPHALT.			0.6
0-5		20		Medium to Fine Sand	Tan and orange fine to medium SAND, some coarse sand, trace coarse gravel.	Dry		1.2
5-10								
10-15								
15-20								

SOIL BORING

V-111

Project: Rivers Edge Wayland City: Wayland State: MA



BORING INFORMATION		LOCATION	
Start Date:	<u>03/27/2019</u>	Lat:	<u>-71.38289600</u>
Completion Date:	<u>03/27/2019</u>	Long:	<u>42.36350500</u>
Personnel:	<u>Kristen Sarson</u>	GS Elev (ft):	<u>0.0</u>
Drilling Co.:	<u>Geosearch</u>		
Method:	<u>Geoprobe</u>		
Refusal (Y/N):	<u>N</u>		
Boring Depth (ft):	<u>10.0</u>		

NOTES

- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System
- The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		43		Asphalt	ASPHALT.	Dry		1.2
5		12		Medium to Fine Sand	Light brown fine to medium SAND, some coarse sand and coarse gravel.			1.1
10								
15								
20								

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-112



BORING INFORMATION		LOCATION	
Start Date:	<u>03/27/2019</u>	Lat:	<u>-71.38305600</u>
Completion Date:	<u>03/27/2019</u>	Long:	<u>42.36358200</u>
Personnel:	<u>Kristen Sarson</u>	GS Elev (ft):	<u>0.0</u>
Drilling Co.:	<u>Geosearch</u>		
Method:	<u>Geoprobe</u>		
Refusal (Y/N):	<u>N</u>		
Boring Depth (ft):	<u>10.0</u>		

NOTES

- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System
- The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		30		Medium to Fine Sand	Brown fine to medium SAND, trace coarse sand, coarse gravel, and silt.	Damp		0.8
5		60						0.7
10								
15								
20								

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-113



BORING INFORMATION		LOCATION	
Start Date:	<u>03/28/2019</u>	Lat:	<u>-71.38351400</u>
Completion Date:	<u>03/28/2019</u>	Long:	<u>42.36347400</u>
Personnel:	<u>Kristen Sarson</u>	GS Elev (ft):	<u>0.0</u>
Drilling Co.:	<u>Geosearch</u>		
Method:	<u>Geoprobe</u>		
Refusal (Y/N):	<u>N</u>		
Boring Depth (ft):	<u>10.0</u>		

NOTES

- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System
- The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		25		Sand and Silt	TOPSOIL- Brown fine SAND and SILT, some organics (roots).			0.0
1				Medium to Fine Sand	Tan fine to medium SAND, some coarse sand, trace coarse gravel.	Damp		
5		30		Coarse to Fine Sand	Tan f-c SAND, some fine gravel.	Dry		0.1
10								
15								
20								

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-114



BORING INFORMATION		LOCATION	
Start Date:	<u>03/28/2019</u>	Lat:	<u>-71.38347300</u>
Completion Date:	<u>03/28/2019</u>	Long:	<u>42.36323300</u>
Personnel:	<u>Kristen Sarson</u>	GS Elev (ft):	<u>0.0</u>
Drilling Co.:	<u>Geosearch</u>		
Method:	<u>Geoprobe</u>		
Refusal (Y/N):	<u>N</u>		
Boring Depth (ft):	<u>10.0</u>		

NOTES

- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System
- The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
		28		Silt	TOPSOIL- Dark brown SILT and organics (roots).			0.5
				Coarse to Medium Sand	Light brown and orange medium to coarse SAND, little f-c gravel and fine sand.	Damp		
5		24		Gravel	Grey coarse GRAVEL.	Dry		0.3
10								
15								
20								

SOIL BORING

V-115

Project: Rivers Edge Wayland City: Wayland State: MA

BORING INFORMATION		LOCATION	
Start Date:	<u>03/28/2019</u>	Lat:	<u>-71.38305800</u>
Completion Date:	<u>03/28/2019</u>	Long:	<u>42.36312000</u>
Personnel:	<u>Kristen Sarson</u>	GS Elev (ft):	<u>0.0</u>
Drilling Co.:	<u>Geosearch</u>		
Method:	<u>Geoprobe</u>		
Refusal (Y/N):	<u>N</u>		
Boring Depth (ft):	<u>10.0</u>		



NOTES

- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System
- The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		20		Medium to Fine Sand	Tan fine to medium SAND, trace silt and fine gravel.			0.3
5		12						0.1
10								
15								
20								

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-116



BORING INFORMATION		LOCATION	
Start Date:	<u>03/28/2019</u>	Lat:	<u>-71.38294100</u>
Completion Date:	<u>03/28/2019</u>	Long:	<u>42.36315900</u>
Personnel:	<u>Kristen Sarson</u>	GS Elev (ft):	<u>0.0</u>
Drilling Co.:	<u>Geosearch</u>		
Method:	<u>Geoprobe</u>		
Refusal (Y/N):	<u>N</u>		
Boring Depth (ft):	<u>10.0</u>		

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System


2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
4.0		40		Medium to Fine Sand	Tan fine to medium SAND, trace coarse sand and coarse gravel.	Dry		0.0
5.0		21		Gravel	Grey coarse GRAVEL and crushed stone.	Dry		
5.0				Medium to Fine Sand	Tan fine to medium SAND, trace coarse sand and coarse gravel.	Dry		0.0
10.0								
15.0								
20.0								

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-301-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION		WELL CONSTRUCTION DETAILS		 LOCATION	
Start/Completion Date: <u>09/30/2021 / 09/30/2021</u>	Well Depth (ft): <u>25.0</u>	Well Diameter (in): <u>2.0</u> Screen Length (ft): <u>25.0</u> Slot Size (in): <u>0.010</u> Completion Type: <u>Geosearch</u> Casing Diameter (in): _____		Datum: _____	_____
Personnel: <u>Shelby, Amsel</u>	Well Diameter (in): <u>2.0</u>			Datum: _____	_____
Drilling Co.: <u>Geosearch</u>	Screen Length (ft): <u>25.0</u>			Lat: _____	_____
Method: <u>Direct Push</u>	Slot Size (in): <u>0.010</u>			Long: _____	_____
Boring Depth (ft): <u>25.0</u>	Completion Type: <u>Geosearch</u>			GS Elev (ft): _____	_____
				TOC (ft): _____	_____

NOTES


Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
 PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
5								
10	60	45		Medium Sand	0"-15" Tan (Very Pale Brown) MEDIUM SAND, Some Gravel, No Odor.		Dry	16.8
					15"-45" Tan (Very Pale Brown) MEDIUM SAND, No Odor.		Dry	13.7
15	60	60		Coarse Sand	0"-36" Tan (Very Pale Brown) COARSE SAND, No Odor.		Dry	10.3
					36"-60" Brown COARSE SAND, AND Tan (Very Pale Brown) GRAVEL, No Odor.		Moist	1.8
20	60	60					Wet	1.1

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-302-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION		WELL CONSTRUCTION DETAILS			
Start/Completion Date: <u>09/30/2021 / 09/30/2021</u>	Well Depth (ft): <u>37.0</u>			LOCATION Datum: _____ Lat: _____ Long: _____ GS Elev (ft): _____ TOC (ft): _____	
Personnel: <u>Shelby, Amsel</u>	Well Diameter (in): <u>2.0</u>				
Drilling Co.: <u>Geosearch</u>	Screen Length (ft): <u>37.0</u>				
Method: <u>Direct Push</u>	Slot Size (in): <u>0.010</u>				
Boring Depth (ft): <u>37.0</u>	Completion Type: <u>Geosearch</u>				
		Casing Diameter (in): _____			

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
 PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
5								
10								
15								
20								

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-302-MW


Project: Wood Partners City: Wayland State: MA

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
25	60	45		Medium to Coarse Sand	0"-45" Tan (Very Pale Brown) MEDIUM TO COARSE SAND, No Odor.		Moist	0.4
30	60	50		Coarse Sand	0"-50" Reddish Yellow COARSE SAND, No Odor.		Wet	0.3
35	24	24			0"-24" Reddish Yellow COARSE SAND, No Odor.		Wet	0.2
40								
45								

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-303-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION		WELL CONSTRUCTION DETAILS			
Start/Completion Date: <u>09/30/2021 / 09/30/2021</u>	Well Depth (ft): <u>37.0</u>			LOCATION	
Personnel: <u>Shelby, Amsel</u>	Well Diameter (in): <u>2.0</u>			Datum: _____	
Drilling Co.: <u>Geosearch</u>	Screen Length (ft): <u>37.0</u>			Lat: _____	
Method: <u>Direct Push</u>	Slot Size (in): <u>0.010</u>			Long: _____	
Boring Depth (ft): <u>39.4</u>	Completion Type: <u>Geosearch</u>			GS Elev (ft): _____	
		Casing Diameter (in): _____	TOC (ft): _____		

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
 PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
0								
5								
10								
15								
20								

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-303-MW


Project: Wood Partners City: Wayland State: MA

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
25	60	60		Coarse Sand	0"-60" Tan (Very Pale Brown) COARSE SAND, Little Gravel, No Odor.		Moist	0.2
30	60	45			0"-30" Reddish Yellow COARSE SAND, No Odor.		Wet	0.3
35	24	24		Fine to Coarse Sand	30"-45" Light Brownish Gray FINE TO COARSE SAND, AND SILT, No Odor.		Wet	0.2
				Medium to Coarse Sand	0"-24" Light Brownish Gray MEDIUM TO COARSE SAND, AND SILT, No Odor.		Wet	0.2
40								
45								

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-304-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION		WELL CONSTRUCTION DETAILS		 LOCATION	
Start/Completion Date: <u>10/01/2021 / 10/01/2021</u>	Well Depth (ft): <u>15.0</u>	Well Diameter (in): <u>2.0</u> Screen Length (ft): <u>15.0</u> Slot Size (in): <u>0.010</u> Completion Type: <u>Geosearch</u> Casing Diameter (in): _____		Datum: _____	_____
Personnel: <u>Shelby, Amsel</u>	Well Diameter (in): <u>2.0</u>			Lat: _____	_____
Drilling Co.: <u>Geosearch</u>	Screen Length (ft): <u>15.0</u>			Long: _____	_____
Method: <u>Direct Push</u>	Slot Size (in): <u>0.010</u>			GS Elev (ft): _____	_____
Boring Depth (ft): <u>15.0</u>	Completion Type: <u>Geosearch</u>			TOC (ft): _____	_____

NOTES


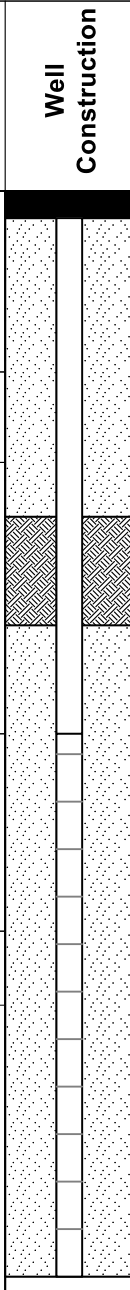
Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
 PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
0	60	60		Sand and Silt	0"-36" Light Brown SAND AND SILT, No Odor.		Dry	2.3
0				Fine Sand	36"-60" Tan (Very Pale Brown) FINE SAND, No Odor.		Dry	3.9
5	60	60		Fine to Medium Sand	0"-60" Light Redish Brown FINE TO MEDIUM SAND, No Odor.		Moist	1.1
10	60	60		Sand and Silt	0"-36" Yellowish Brown SILT AND SAND, No Odor.		Wet	1
15				Fine to Coarse Sand	36"-60" Reddish Brown FINE TO COARSE SAND, AND SILT, No Odor.		Wet	0.8
20								

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-305-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION		WELL CONSTRUCTION DETAILS			
Start/Completion Date: <u>10/01/2021 / 10/01/2021</u>	Well Depth (ft): <u>20.0</u>			LOCATION Datum: _____ Lat: _____ Long: _____ GS Elev (ft): _____ TOC (ft): _____	
Personnel: <u>Shelby, Amsel</u>	Well Diameter (in): <u>2.0</u>				
Drilling Co.: <u>Geosearch</u>	Screen Length (ft): <u>20.0</u>				
Method: <u>Direct Push</u>	Slot Size (in): <u>0.010</u>				
Boring Depth (ft): <u>20.0</u>	Completion Type: <u>Geosearch</u>				
		Casing Diameter (in): _____			

NOTES


Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
 PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
0	60	30		Fine to Medium Sand	0"-20" Brown FINE TO MEDIUM SAND, Some Gravel, Some Silt, No Odor.		Dry	16
5	60	50		Medium Sand	20"-30" Light Reddish Brown MEDIUM SAND, No Odor. 0"-50" Light Yellowish Brown MEDIUM SAND, Little Gravel, No Odor.		Dry	0.7
10	60	55		Medium to Coarse Sand	0"-40" Light Brown MEDIUM TO COARSE SAND, No Odor.		Dry to Damp	0
15	60	60		Sand and Gravel	40"-55" Light Brown SAND AND GRAVEL, No Odor.		Wet	0
20								0

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-306-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION		WELL CONSTRUCTION DETAILS			
Start/Completion Date: <u>10/01/2021 / 10/01/2021</u>	Well Depth (ft): <u>37.0</u>			LOCATION Datum: _____ Lat: _____ Long: _____ GS Elev (ft): _____ TOC (ft): _____	
Personnel: <u>Shelby, Amsel</u>	Well Diameter (in): <u>2.0</u>				
Drilling Co.: <u>Geosearch</u>	Screen Length (ft): <u>37.0</u>				
Method: <u>Direct Push</u>	Slot Size (in): <u>0.010</u>				
Boring Depth (ft): <u>39.7</u>	Completion Type: <u>Geosearch</u>				
		Casing Diameter (in): _____			

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
 PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
0								
5								
10								
15								
20								

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-306-MW

Project: Wood Partners City: Wayland State: MA

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
25	60	40		Fine to Medium Sand	0"-40" Light Brown FINE TO MEDIUM SAND, No Odor.		Dry	0.2
30	60	45		Fine to Coarse Sand	0"-45" Brown FINE TO COARSE SAND, AND CLAYEY SILT, No Odor.		Moist	0.1
35	24	24			0"-24" Brown FINE TO COARSE SAND, AND CLAYEY SILT, No Odor.		Wet	0
40								
45								

**APPENDIX D:
Laboratory Analytical Data**

December 31, 2020

Kristen Sarson
Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114

Project Location: 484 Boston Post Rd, Wayland, MA
Client Job Number:
Project Number: 67404
Laboratory Work Order Number: 20L1187

Enclosed are results of analyses for samples received by the laboratory on December 23, 2020. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Vertex Engineering - Boston
 100 North Washington St. Suite 302
 Boston, MA 02114
 ATTN: Kristen Sarson

REPORT DATE: 12/31/2020

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 67404

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 20L1187

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

PROJECT LOCATION: 484 Boston Post Rd, Wayland, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
V-102 (MW)-2020-12-22	20L1187-01	Ground Water		SM19-22 4500 NH3 C SW-846 6020B	
V-103 (MW)-2020-12-22	20L1187-02	Ground Water		SM19-22 4500 NH3 C SW-846 6020B	
V-104 (MW)-2020-12-22	20L1187-03	Ground Water		SM19-22 4500 NH3 C SW-846 6020B	
MW-3-2020-12-22	20L1187-04	Ground Water		SM19-22 4500 NH3 C SW-846 6020B	
V-105 (MW)-2020-12-22	20L1187-05	Ground Water		SM19-22 4500 NH3 C SW-846 6020B	
V-106 (MW)-2020-12-22	20L1187-06	Ground Water		SM19-22 4500 NH3 C SW-846 6020B	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 Boston Post Rd, Wayland, MA Sample Description:

Work Order: 20L1187

Date Received: 12/23/2020

Field Sample #: V-102 (MW)-2020-12-22

Sampled: 12/22/2020 09:15

Sample ID: 20L1187-01

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	30	0.80	µg/L	1		SW-846 6020B	12/30/20	12/31/20 10:59	MJH
Nickel	13	5.0	µg/L	1		SW-846 6020B	12/30/20	12/31/20 10:59	MJH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 Boston Post Rd, Wayland, MA Sample Description:

Work Order: 20L1187

Date Received: 12/23/2020

Field Sample #: V-102 (MW)-2020-12-22

Sampled: 12/22/2020 09:15

Sample ID: 20L1187-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	2.2	0.30	mg/L	1		SM19-22 4500 NH3 C	12/24/20	12/26/20 8:30	CLJ

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 Boston Post Rd, Wayland, MA Sample Description:

Work Order: 20L1187

Date Received: 12/23/2020

Field Sample #: V-103 (MW)-2020-12-22

Sampled: 12/22/2020 10:40

Sample ID: 20L1187-02

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.80	µg/L	1		SW-846 6020B	12/30/20	12/31/20 11:02	MJH
Nickel	ND	5.0	µg/L	1		SW-846 6020B	12/30/20	12/31/20 11:02	MJH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 Boston Post Rd, Wayland, MA Sample Description:

Work Order: 20L1187

Date Received: 12/23/2020

Field Sample #: V-103 (MW)-2020-12-22

Sampled: 12/22/2020 10:40

Sample ID: 20L1187-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	ND	0.30	mg/L	1		SM19-22 4500 NH3 C	12/24/20	12/26/20 8:30	CLJ

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 Boston Post Rd, Wayland, MA Sample Description:

Work Order: 20L1187

Date Received: 12/23/2020

Field Sample #: V-104 (MW)-2020-12-22

Sampled: 12/22/2020 15:30

Sample ID: 20L1187-03

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.80	µg/L	1		SW-846 6020B	12/30/20	12/31/20 11:05	MJH
Nickel	5.1	5.0	µg/L	1		SW-846 6020B	12/30/20	12/31/20 11:05	MJH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 Boston Post Rd, Wayland, MA Sample Description:

Work Order: 20L1187

Date Received: 12/23/2020

Field Sample #: V-104 (MW)-2020-12-22

Sampled: 12/22/2020 15:30

Sample ID: 20L1187-03

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	ND	0.30	mg/L	1		SM19-22 4500 NH3 C	12/24/20	12/26/20 8:30	CLJ

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 Boston Post Rd, Wayland, MA Sample Description:

Work Order: 20L1187

Date Received: 12/23/2020

Field Sample #: MW-3-2020-12-22

Sampled: 12/22/2020 11:35

Sample ID: 20L1187-04

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.80	µg/L	1		SW-846 6020B	12/30/20	12/31/20 11:09	MJH
Nickel	74	5.0	µg/L	1		SW-846 6020B	12/30/20	12/31/20 11:09	MJH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 Boston Post Rd, Wayland, MA Sample Description:

Work Order: 20L1187

Date Received: 12/23/2020

Field Sample #: MW-3-2020-12-22

Sampled: 12/22/2020 11:35

Sample ID: 20L1187-04

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	4.8	0.30	mg/L	1		SM19-22 4500 NH3 C	12/24/20	12/26/20 8:30	CLJ

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 Boston Post Rd, Wayland, MA Sample Description:

Work Order: 20L1187

Date Received: 12/23/2020

Field Sample #: V-105 (MW)-2020-12-22

Sampled: 12/22/2020 13:35

Sample ID: 20L1187-05

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.80	µg/L	1		SW-846 6020B	12/30/20	12/31/20 11:12	MJH
Nickel	29	5.0	µg/L	1		SW-846 6020B	12/30/20	12/31/20 11:12	MJH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 Boston Post Rd, Wayland, MA Sample Description:

Work Order: 20L1187

Date Received: 12/23/2020

Field Sample #: V-105 (MW)-2020-12-22

Sampled: 12/22/2020 13:35

Sample ID: 20L1187-05

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	8.5	0.30	mg/L	1		SM19-22 4500 NH3 C	12/24/20	12/26/20 8:30	CLJ

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 Boston Post Rd, Wayland, MA Sample Description:

Work Order: 20L1187

Date Received: 12/23/2020

Field Sample #: V-106 (MW)-2020-12-22

Sampled: 12/22/2020 15:45

Sample ID: 20L1187-06

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.80	µg/L	1		SW-846 6020B	12/30/20	12/31/20 11:22	MJH
Nickel	160	5.0	µg/L	1		SW-846 6020B	12/30/20	12/31/20 11:22	MJH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 Boston Post Rd, Wayland, MA Sample Description:

Work Order: 20L1187

Date Received: 12/23/2020

Field Sample #: V-106 (MW)-2020-12-22

Sampled: 12/22/2020 15:45

Sample ID: 20L1187-06

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	1.0	0.30	mg/L	1		SM19-22 4500 NH3 C	12/24/20	12/26/20 8:30	CLJ

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Sample Extraction Data
SM19-22 4500 NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20L1187-01 [V-102 (MW)-2020-12-22]	B273503	100	100	12/24/20
20L1187-02 [V-103 (MW)-2020-12-22]	B273503	100	100	12/24/20
20L1187-03 [V-104 (MW)-2020-12-22]	B273503	100	100	12/24/20
20L1187-04 [MW-3-2020-12-22]	B273503	100	100	12/24/20
20L1187-05 [V-105 (MW)-2020-12-22]	B273503	100	100	12/24/20
20L1187-06 [V-106 (MW)-2020-12-22]	B273503	100	100	12/24/20

Prep Method: SW-846 3005A Dissolved Analytical Method: SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20L1187-01 [V-102 (MW)-2020-12-22]	B273714	50.0	50.0	12/30/20
20L1187-02 [V-103 (MW)-2020-12-22]	B273714	50.0	50.0	12/30/20
20L1187-03 [V-104 (MW)-2020-12-22]	B273714	50.0	50.0	12/30/20
20L1187-04 [MW-3-2020-12-22]	B273714	50.0	50.0	12/30/20
20L1187-05 [V-105 (MW)-2020-12-22]	B273714	50.0	50.0	12/30/20
20L1187-06 [V-106 (MW)-2020-12-22]	B273714	50.0	50.0	12/30/20

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QUALITY CONTROL
Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B273714 - SW-846 3005A Dissolved										
Blank (B273714-BLK1)										
Prepared: 12/30/20 Analyzed: 12/31/20										
Arsenic	ND	0.80	µg/L							
Nickel	ND	5.0	µg/L							
LCS (B273714-BS1)										
Prepared: 12/30/20 Analyzed: 12/31/20										
Arsenic	498	8.0	µg/L	500		99.6	80-120			
Nickel	502	50	µg/L	500		100	80-120			
LCS Dup (B273714-BSD1)										
Prepared: 12/30/20 Analyzed: 12/31/20										
Arsenic	511	8.0	µg/L	500		102	80-120	2.59	20	
Nickel	508	50	µg/L	500		102	80-120	1.17	20	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL
Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B273503 - SM19-22 4500 NH3 C										
Blank (B273503-BLK1)										
				Prepared: 12/24/20 Analyzed: 12/26/20						
Ammonia as N	ND	0.30	mg/L							
LCS (B273503-BS1)										
				Prepared: 12/24/20 Analyzed: 12/26/20						
Ammonia as N	5.1	0.30	mg/L	5.00		103	86.9-110			
LCS Dup (B273503-BSD1)										
				Prepared: 12/24/20 Analyzed: 12/26/20						
Ammonia as N	5.1	0.30	mg/L	5.00		103	86.9-110	0.00	9.37	

FLAG/QUALIFIER SUMMARY

- * QC result is outside of established limits.
 - † Wide recovery limits established for difficult compound.
 - ‡ Wide RPD limits established for difficult compound.
 - # Data exceeded client recommended or regulatory level
 - ND Not Detected
 - RL Reporting Limit is at the level of quantitation (LOQ)
 - DL Detection Limit is the lower limit of detection determined by the MDL study
 - MCL Maximum Contaminant Level
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
- No results have been blank subtracted unless specified in the case narrative section.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SM19-22 4500 NH3 C in Water</i>	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
<i>SW-846 6020B in Water</i>	
Arsenic	CT,NH,NY,NC,ME,VA
Nickel	CT,NH,NY,NC,ME,VA

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2021
CT	Connecticut Department of Public Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2021
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2021
RI	Rhode Island Department of Health	LAO00112	12/30/2020
NC	North Carolina Div. of Water Quality	652	12/31/2020
NJ	New Jersey DEP	MA007 NELAP	06/30/2021
FL	Florida Department of Health	E871027 NELAP	06/30/2021
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2021
ME	State of Maine	MA00100	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2021
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2021
NC-DW	North Carolina Department of Health	25703	07/31/2021
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2021
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

2061187

Phone: 413-525-2332
 Fax: 413-525-6405
 Email: info@contestlabs.com



Address: 100 N Washington St Suite 307, Boston, MA
 Phone: 617-275-5951
 Project Location: 484 Boston Post Rd, Weyland
 Project Number: 61404
 Project Manager: K. Sarson
 Con-Test Quote Name/Number:
 Invoice Recipient: Vextex
 Sampled By: J. Golden

39 Spruce Street
 East Longmeadow, MA 01028

Page 1 of 1

CHAIN OF CUSTODY RECORD		ANALYSIS REQUESTED									
Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
C1	V-102(MW)-2020-12-22	12/22/20 09:15	12/22/20 09:15	GW	GW						
C2	V-103(MW)-2020-12-22	12/22/20 10:40	12/22/20 10:40	GW	GW						
C3	V-104(MW)-2020-12-22	12/22/20 11:30	12/22/20 11:30	Grab	GW						
C4	MW-3-2020-12-22	12/22/20 11:35	12/22/20 11:35	13:35	GW						
C5	V-105(MW)-2020-12-22	12/22/20 15:30	12/22/20 15:30	13:35	GW						
C6	V-106(MW)-2020-12-22	12/22/20 15:45	12/22/20 15:45	Grab	GW						

Relinquished by: (signature)	Date/Time: 12/23/20 11:40
Received by: (signature)	Date/Time: 12/23/20 11:40
Relinquished by: (signature)	Date/Time: 12/23/20 18:40
Received by: (signature)	Date/Time: 12/23/20 18:40
Relinquished by: (signature)	Date/Time: 12/23/20 18:40
Received by: (signature)	Date/Time: 12/23/20 18:40

Relinquished by: (signature)	Date/Time: 12/23/20 18:40
Received by: (signature)	Date/Time: 12/23/20 18:40

1 Preservation Code
 Total Number Of:
 VIALS _____
 GLASS _____
 PLASTIC _____
 BACTERIA _____
 ENCORE _____

Glassware in fridge? Y N
 Glassware in freezer? Y N
 Prepackaged Cooler? Y N
 *Contest is not responsible for missing samples from prepackaged coolers

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Field Filtered Lab to Filter	<input checked="" type="checkbox"/>	Field Filtered Lab to Filter	<input type="checkbox"/>
Format: PDF	<input checked="" type="checkbox"/>	Format: EXCEL	<input type="checkbox"/>
Other: EQUIS	<input type="checkbox"/>	Other: WRTA	<input type="checkbox"/>
CLP Like Data Pkg Required: K. Sarson@vextex.com	<input type="checkbox"/>	Municipality: 21 J	<input type="checkbox"/>
Email To: K. Sarson@vextex.com	<input type="checkbox"/>	School: MBTA	<input type="checkbox"/>
Fax To #:	<input type="checkbox"/>	City: Brownfield	<input type="checkbox"/>

Relinquished by: (signature)	Date/Time: 12/23/20 11:40
Received by: (signature)	Date/Time: 12/23/20 11:40
Relinquished by: (signature)	Date/Time: 12/23/20 18:40
Received by: (signature)	Date/Time: 12/23/20 18:40
Relinquished by: (signature)	Date/Time: 12/23/20 18:40
Received by: (signature)	Date/Time: 12/23/20 18:40

Client Comments:
 Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

Project Entity: Municipality 21 J, School MBTA, City Brownfield

Project Entity: Government Federal City

Project Entity: WRTA

Project Entity: Chromatogram ALPHA-LAP, LLC

Project Entity: PCB ONLY Soxhlet Non Soxhlet

Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Vertex

Received By PLF Date 12/23/20 Time 1840

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 3 Actual Temp - 2.5
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F

Are there Rushes? F

Are there Short Holds? F

Is there enough Volume? T

Is there Headspace where applicable? NA

Proper Media/Containers Used? T

Were trip blanks received? F

Do all samples have the proper pH? _____

Acid T Base NA

Who was notified? _____

Who was notified? _____

Who was notified? _____

MS/MSD? F

Is splitting samples required? F

On COC? F

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	<u>12</u>	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

April 5, 2021

Kristen Sarson
Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114

Project Location: Wayland, MA
Client Job Number:
Project Number: 67404
Laboratory Work Order Number: 21C1453

Enclosed are results of analyses for samples received by the laboratory on March 29, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Vertex Engineering - Boston
 100 North Washington St. Suite 302
 Boston, MA 02114
 ATTN: Kristen Sarson

REPORT DATE: 4/5/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 67404

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21C1453

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

PROJECT LOCATION: Wayland, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
V-106 (MW)	21C1453-01	Ground Water		SM 21-22 4500 P E SM21-22 4500 H B SW-846 6020B	
V-202 (MW)	21C1453-02	Ground Water		SM 21-22 4500 P E SM21-22 4500 H B SW-846 6020B	
V-201 (MW)	21C1453-03	Ground Water		SM 21-22 4500 P E SM21-22 4500 H B SW-846 6020B	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SM 21-22 4500 P E

Qualifications:**Z-01**

SM 4500 test had a point outside acceptable back calculated recoveries. Re-analysis yielded similar nonconformances.

Analyte & Samples(s) Qualified:**Phosphorus, Total**

21C1453-02[V-202 (MW)], 21C1453-03[V-201 (MW)]

SM21-22 4500 H B

Qualifications:**H-05**

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:**pH**

21C1453-01[V-106 (MW)], 21C1453-02[V-202 (MW)], 21C1453-03[V-201 (MW)]

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21C1453

Date Received: 3/29/2021

Field Sample #: V-106 (MW)

Sampled: 3/29/2021 09:45

Sample ID: 21C1453-01

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	4/4/21	4/5/21 12:18	TBC
Copper	5.3	1.0	µg/L	1		SW-846 6020B	4/4/21	4/5/21 12:18	TBC
Lead	ND	0.50	µg/L	1		SW-846 6020B	4/4/21	4/5/21 12:18	TBC

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21C1453

Date Received: 3/29/2021

Sampled: 3/29/2021 09:45

Field Sample #: V-106 (MW)

Sample ID: 21C1453-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
pH @17.9°C	5.8		pH Units	1	H-05	SM21-22 4500 H B	3/30/21	3/30/21 17:15	ALG
Phosphorus, Total	ND	0.050	mg/L	1		SM 21-22 4500 P E	3/31/21	4/1/21 15:09	EC

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21C1453

Date Received: 3/29/2021

Field Sample #: V-202 (MW)

Sampled: 3/29/2021 11:00

Sample ID: 21C1453-02

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	4/4/21	4/5/21 12:28	TBC
Copper	2.8	1.0	µg/L	1		SW-846 6020B	4/4/21	4/5/21 12:28	TBC
Lead	ND	0.50	µg/L	1		SW-846 6020B	4/4/21	4/5/21 12:28	TBC

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21C1453

Date Received: 3/29/2021

Field Sample #: V-202 (MW)

Sampled: 3/29/2021 11:00

Sample ID: 21C1453-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
pH @18.2°C	6.4		pH Units	1	H-05	SM21-22 4500 H B	3/30/21	3/30/21 17:15	ALG
Phosphorus, Total	0.067	0.050	mg/L	1	Z-01	SM 21-22 4500 P E	4/2/21	4/5/21 10:15	EC

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Project Location: Wayland, MA

Sample Description:

Work Order: 21C1453

Date Received: 3/29/2021

Field Sample #: V-201 (MW)

Sampled: 3/29/2021 12:00

Sample ID: 21C1453-03

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	4/4/21	4/5/21 12:31	TBC
Copper	7.4	1.0	µg/L	1		SW-846 6020B	4/4/21	4/5/21 12:31	TBC
Lead	ND	0.50	µg/L	1		SW-846 6020B	4/4/21	4/5/21 12:31	TBC

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21C1453

Date Received: 3/29/2021

Field Sample #: V-201 (MW)

Sampled: 3/29/2021 12:00

Sample ID: 21C1453-03

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
pH @17.7°C	6.4		pH Units	1	H-05	SM21-22 4500 H B	3/30/21	3/30/21 17:15	ALG
Phosphorus, Total	ND	0.050	mg/L	1	Z-01	SM 21-22 4500 P E	4/2/21	4/5/21 10:15	EC

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Sample Extraction Data
SM 21-22 4500 P E

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21C1453-01 [V-106 (MW)]	B279170	50.0	50.0	03/31/21

SM 21-22 4500 P E

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21C1453-02 [V-202 (MW)]	B279358	50.0	50.0	04/02/21
21C1453-03 [V-201 (MW)]	B279358	50.0	50.0	04/02/21

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
21C1453-01 [V-106 (MW)]	B279113	50.0	03/30/21
21C1453-02 [V-202 (MW)]	B279113	50.0	03/30/21
21C1453-03 [V-201 (MW)]	B279113	50.0	03/30/21

Prep Method: SW-846 3005A Dissolved Analytical Method: SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21C1453-01 [V-106 (MW)]	B279397	50.0	50.0	04/04/21
21C1453-02 [V-202 (MW)]	B279397	50.0	50.0	04/04/21
21C1453-03 [V-201 (MW)]	B279397	50.0	50.0	04/04/21

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QUALITY CONTROL
Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B279397 - SW-846 3005A Dissolved
Blank (B279397-BLK1)

Prepared: 04/04/21 Analyzed: 04/05/21

Antimony	ND	1.0	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							

LCS (B279397-BS1)

Prepared: 04/04/21 Analyzed: 04/05/21

Antimony	494	10	µg/L	500		98.8	80-120			
Copper	923	10	µg/L	1000		92.3	80-120			
Lead	468	5.0	µg/L	500		93.7	80-120			

LCS Dup (B279397-BSD1)

Prepared: 04/04/21 Analyzed: 04/05/21

Antimony	501	10	µg/L	500		100	80-120	1.34	20	
Copper	940	10	µg/L	1000		94.0	80-120	1.89	20	
Lead	478	5.0	µg/L	500		95.6	80-120	2.01	20	

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QUALITY CONTROL
Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch B279113 - SM21-22 4500 H B									
LCS (B279113-BS1)					Prepared & Analyzed: 03/30/21				
pH	6.00		pH Units	6.00		99.9	90-110		
Batch B279170 - SM 21-22 4500 P E									
Blank (B279170-BLK1)					Prepared: 03/31/21 Analyzed: 04/01/21				
Phosphorus, Total	ND	0.050	mg/L						
LCS (B279170-BS1)					Prepared: 03/31/21 Analyzed: 04/01/21				
Phosphorus, Total	0.16	0.050	mg/L	0.176		90.6	82.6-116		
LCS Dup (B279170-BSD1)					Prepared: 03/31/21 Analyzed: 04/01/21				
Phosphorus, Total	0.17	0.050	mg/L	0.176		98.3	82.6-116	8.16	20.4
Batch B279358 - SM 21-22 4500 P E									
Blank (B279358-BLK1)					Prepared: 04/02/21 Analyzed: 04/05/21				
Phosphorus, Total	ND	0.050	mg/L						
LCS (B279358-BS1)					Prepared: 04/02/21 Analyzed: 04/05/21				
Phosphorus, Total	0.15	0.050	mg/L	0.176		85.6	82.6-116		
LCS Dup (B279358-BSD1)					Prepared: 04/02/21 Analyzed: 04/05/21				
Phosphorus, Total	0.15	0.050	mg/L	0.176		83.8	82.6-116	2.16	20.4

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
Z-01	SM 4500 test had a point outside acceptable back calculated recoveries. Re-analysis yielded similar nonconformances.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SM 21-22 4500 P E in Water	
Phosphorus, Total	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 4500 H B in Water	
pH	CT,MA,RI
SW-846 6020B in Water	
Antimony	CT,NH,NY,ME,VA,NC
Copper	CT,NH,NY,NC,ME,VA
Lead	CT,NH,NY,NC,ME,VA

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2021
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2021
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2021
FL	Florida Department of Health	E871027 NELAP	06/30/2021
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2021
ME	State of Maine	MA00100	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2021
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2021
NC-DW	North Carolina Department of Health	25703	07/31/2021
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2021
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Vertex

Received By RLF Date 3/29/21 Time 1825

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 3 Actual Temp - 2
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F

Are there Rushes? F

Are there Short Holds? T

Is there enough Volume? T

Is there Headspace where applicable? NA

Proper Media/Containers Used? T

Were trip blanks received? F

Do all samples have the proper pH? _____

Who was notified? _____

Who was notified? _____

Who was notified? David

MS/MSD? F

Is splitting samples required? F

On COC? F

Acid T Base NA

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test, a Pace Analytical Laboratory	Project #: 21C1453
Project Location: Wayland, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]
21C1453-01 thru 21C1453-03

Matrices: Water

CAM Protocol (check all that below)

8260 VOC CAM II A ()	7470/7471 Hg CAM IIIB ()	MassDEP VPH CAM IV A ()	8082 PCB CAM V A ()	9014 Total Cyanide/PAC CAM VI A ()	6860 Perchlorate CAM VIII B ()
8270 SVOC CAM II B ()	7010 Metals CAM III C ()	MassDEP VPH CAM IV C ()	8081 Pesticides CAM V B ()	7196 Hex Cr CAM VI B ()	MassDEP APH CAM IX A ()
6010 Metals CAM III A ()	6020 Metals CAM III D (X)	MassDEP EPH CAM IV B ()	8151 Herbicides CAM V C ()	8330 Explosives CAM VIII A ()	TO-15 VOC CAM IX B ()

Affirmative response to Questions A through F is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	<input type="checkbox"/> Yes <input type="checkbox"/> No ¹
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No ¹
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
----------	---	--

Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹

¹All Negative responses must be addressed in an attached Environmental Laboratory case narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Lisa Worthington Position: Technical Representative
Printed Name: Lisa A. Worthington Date: 04/05/21

April 23, 2021

Kristen Sarson
Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114

Project Location: Wayland, MA
Client Job Number:
Project Number: 67404
Laboratory Work Order Number: 21D0885

Enclosed are results of analyses for samples received by the laboratory on April 16, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager

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Vertex Engineering - Boston
 100 North Washington St. Suite 302
 Boston, MA 02114
 ATTN: Kristen Sarson

REPORT DATE: 4/23/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 67404

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21D0885

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

PROJECT LOCATION: Wayland, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
V-106 (MW)	21D0885-01	Ground Water		SM 21-22 4500 P E SM21-22 4500 H B SW-846 6020B	
V-202 (MW)	21D0885-02	Ground Water		SM 21-22 4500 P E SM21-22 4500 H B SW-846 6020B	
V-201 (MW)	21D0885-03	Ground Water		SM 21-22 4500 P E SM21-22 4500 H B SW-846 6020B	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SM 21-22 4500 P E**Qualifications:**

Z-01

Calibration point outside acceptable back calculate recovery. Reanalysis yielded similar non-conformance.

Analyte & Samples(s) Qualified:**Phosphorus, Total**

21D0885-01[V-106 (MW)], 21D0885-02[V-202 (MW)], 21D0885-03[V-201 (MW)]

SM21-22 4500 H B**Qualifications:**

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:**pH**

21D0885-01[V-106 (MW)], 21D0885-02[V-202 (MW)], 21D0885-03[V-201 (MW)]

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21D0885

Date Received: 4/16/2021

Field Sample #: V-106 (MW)

Sampled: 4/16/2021 08:45

Sample ID: 21D0885-01

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	4/20/21	4/21/21 12:50	MJH
Copper	3.6	1.0	µg/L	1		SW-846 6020B	4/20/21	4/21/21 12:50	MJH
Lead	ND	0.50	µg/L	1		SW-846 6020B	4/20/21	4/21/21 12:50	MJH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21D0885

Date Received: 4/16/2021

Sampled: 4/16/2021 08:45

Field Sample #: V-106 (MW)

Sample ID: 21D0885-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
pH @16.2°C	6.0		pH Units	1	H-05	SM21-22 4500 H B	4/17/21	4/17/21 10:00	ALG
Phosphorus, Total	0.15	0.050	mg/L	1	Z-01	SM 21-22 4500 P E	4/21/21	4/22/21 11:30	EC

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21D0885

Date Received: 4/16/2021

Field Sample #: V-202 (MW)

Sampled: 4/16/2021 09:45

Sample ID: 21D0885-02

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	4/20/21	4/21/21 12:53	MJH
Copper	1.1	1.0	µg/L	1		SW-846 6020B	4/20/21	4/21/21 12:53	MJH
Lead	ND	0.50	µg/L	1		SW-846 6020B	4/20/21	4/21/21 12:53	MJH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21D0885

Date Received: 4/16/2021

Field Sample #: V-202 (MW)

Sampled: 4/16/2021 09:45

Sample ID: 21D0885-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
pH @16.7°C	6.6		pH Units	1	H-05	SM21-22 4500 H B	4/17/21	4/17/21 10:00	ALG
Phosphorus, Total	ND	0.050	mg/L	1	Z-01	SM 21-22 4500 P E	4/21/21	4/22/21 11:30	EC

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Project Location: Wayland, MA

Sample Description:

Work Order: 21D0885

Date Received: 4/16/2021

Field Sample #: V-201 (MW)

Sampled: 4/16/2021 11:00

Sample ID: 21D0885-03

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	4/20/21	4/21/21 12:57	MJH
Copper	4.6	1.0	µg/L	1		SW-846 6020B	4/20/21	4/21/21 12:57	MJH
Lead	ND	0.50	µg/L	1		SW-846 6020B	4/20/21	4/21/21 12:57	MJH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21D0885

Date Received: 4/16/2021

Field Sample #: V-201 (MW)

Sampled: 4/16/2021 11:00

Sample ID: 21D0885-03

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
pH @17.4°C	6.5		pH Units	1	H-05	SM21-22 4500 H B	4/17/21	4/17/21 10:00	ALG
Phosphorus, Total	ND	0.050	mg/L	1	Z-01	SM 21-22 4500 P E	4/21/21	4/22/21 11:30	EC

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Sample Extraction Data
SM 21-22 4500 P E

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21D0885-01 [V-106 (MW)]	B280484	50.0	50.0	04/21/21
21D0885-02 [V-202 (MW)]	B280484	50.0	50.0	04/21/21
21D0885-03 [V-201 (MW)]	B280484	50.0	50.0	04/21/21

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
21D0885-01 [V-106 (MW)]	B280356	50.0	04/17/21
21D0885-02 [V-202 (MW)]	B280356	50.0	04/17/21
21D0885-03 [V-201 (MW)]	B280356	50.0	04/17/21

Prep Method: SW-846 3005A Dissolved Analytical Method: SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21D0885-01 [V-106 (MW)]	B280540	50.0	50.0	04/20/21
21D0885-02 [V-202 (MW)]	B280540	50.0	50.0	04/20/21
21D0885-03 [V-201 (MW)]	B280540	50.0	50.0	04/20/21

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL
Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B280540 - SW-846 3005A Dissolved
Blank (B280540-BLK1)

Prepared: 04/20/21 Analyzed: 04/21/21

Antimony	ND	1.0	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							

LCS (B280540-BS1)

Prepared: 04/20/21 Analyzed: 04/21/21

Antimony	508	10	µg/L	500		102	80-120			
Copper	948	10	µg/L	1000		94.8	80-120			
Lead	474	5.0	µg/L	500		94.7	80-120			

LCS Dup (B280540-BSD1)

Prepared: 04/20/21 Analyzed: 04/21/21

Antimony	513	10	µg/L	500		103	80-120	0.981	20	
Copper	956	10	µg/L	1000		95.6	80-120	0.834	20	
Lead	475	5.0	µg/L	500		94.9	80-120	0.188	20	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL
Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B280356 - SM21-22 4500 H B										
LCS (B280356-BS1)										
Prepared & Analyzed: 04/17/21										
pH	5.97		pH Units	6.00		99.5	90-110			
LCS (B280356-BS2)										
Prepared & Analyzed: 04/17/21										
pH	5.98		pH Units	6.00		99.7	90-110			
Batch B280484 - SM 21-22 4500 P E										
Blank (B280484-BLK1)										
Prepared: 04/21/21 Analyzed: 04/22/21										
Phosphorus, Total	ND	0.050	mg/L							
LCS (B280484-BS1)										
Prepared: 04/21/21 Analyzed: 04/22/21										
Phosphorus, Total	0.15	0.050	mg/L	0.176		85.6	82.6-116			
LCS Dup (B280484-BSD1)										
Prepared: 04/21/21 Analyzed: 04/22/21										
Phosphorus, Total	0.16	0.050	mg/L	0.176		93.6	82.6-116	8.97	20.4	

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
Z-01	Calibration point outside acceptable back calculate recovery. Reanalysis yielded similar non-conformance.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SM 21-22 4500 P E in Water	
Phosphorus, Total	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 4500 H B in Water	
pH	CT,MA,RI
SW-846 6020B in Water	
Antimony	CT,NH,NY,ME,VA,NC
Copper	CT,NH,NY,NC,ME,VA
Lead	CT,NH,NY,NC,ME,VA

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2021
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2021
FL	Florida Department of Health	E871027 NELAP	06/30/2021
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2021
ME	State of Maine	MA00100	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2021
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2021
NC-DW	North Carolina Department of Health	25703	07/31/2021
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2021
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test[®]
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Vortex

Received By CU Date 4/16/21 Time 2020

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.0
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? T Who was notified? CASSIE

Is there enough Volume? T

Is there Headspace where applicable? NA MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? Acid T Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

May 28, 2021

Kristen Sarson
Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114

Project Location: 484 New Boston Rd
Client Job Number:
Project Number: 67404
Laboratory Work Order Number: 21E1391

Enclosed are results of analyses for samples received by the laboratory on May 25, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114
ATTN: Kristen Sarson

REPORT DATE: 5/28/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 67404

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21E1391

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

PROJECT LOCATION: 484 New Boston Rd

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
V-202(MW)-20210524	21E1391-01	Ground Water		SM 21-22 4500 P E SM21-22 4500 H B SW-846 6020B	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH

21E1391-01[V-202(MW)-20210524], B282806-DUP1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 New Boston Rd

Sample Description:

Work Order: 21E1391

Date Received: 5/25/2021

Field Sample #: V-202(MW)-20210524

Sampled: 5/24/2021 10:30

Sample ID: 21E1391-01

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	5/25/21	5/27/21 13:13	QNW
Lead	ND	0.50	µg/L	1		SW-846 6020B	5/25/21	5/27/21 13:13	QNW
Nickel	12	5.0	µg/L	1		SW-846 6020B	5/25/21	5/27/21 13:13	QNW

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 484 New Boston Rd

Sample Description:

Work Order: 21E1391

Date Received: 5/25/2021

Field Sample #: V-202(MW)-20210524

Sampled: 5/24/2021 10:30

Sample ID: 21E1391-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
pH @17.2°C	6.7		pH Units	1	H-05	SM21-22 4500 H B	5/25/21	5/25/21 20:30	ALG
Phosphorus, Total	0.087	0.050	mg/L	1		SM 21-22 4500 P E	5/26/21	5/26/21 11:05	EC

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data**SM 21-22 4500 P E**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21E1391-01 [V-202(MW)-20210524]	B282829	50.0	50.0	05/26/21

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
21E1391-01 [V-202(MW)-20210524]	B282806	50.0	05/25/21

Prep Method: SW-846 3005A Dissolved Analytical Method: SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21E1391-01 [V-202(MW)-20210524]	B282803	50.0	50.0	05/25/21

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL
Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B282803 - SW-846 3005A Dissolved										
Blank (B282803-BLK1)										
Prepared: 05/26/21 Analyzed: 05/27/21										
Antimony	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Nickel	ND	5.0	µg/L							
LCS (B282803-BS1)										
Prepared: 05/26/21 Analyzed: 05/27/21										
Antimony	550	10	µg/L	500		110	80-120			
Lead	514	5.0	µg/L	500		103	80-120			
Nickel	503	50	µg/L	500		101	80-120			
LCS Dup (B282803-BSD1)										
Prepared: 05/26/21 Analyzed: 05/27/21										
Antimony	559	10	µg/L	500		112	80-120	1.67	20	
Lead	518	5.0	µg/L	500		104	80-120	0.685	20	
Nickel	509	50	µg/L	500		102	80-120	1.12	20	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL
Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B282806 - SM21-22 4500 H B										
LCS (B282806-BS1)				Prepared & Analyzed: 05/25/21						
pH	5.99		pH Units	6.00		99.9	90-110			
Duplicate (B282806-DUP1)		Source: 21E1391-01			Prepared & Analyzed: 05/25/21					
pH	6.6		pH Units		6.7			2.50	5	H-05
Batch B282829 - SM 21-22 4500 P E										
Blank (B282829-BLK1)				Prepared & Analyzed: 05/26/21						
Phosphorus, Total	ND	0.050	mg/L							
LCS (B282829-BS1)				Prepared & Analyzed: 05/26/21						
Phosphorus, Total	0.19	0.050	mg/L	0.167		112	76.5-122			
LCS Dup (B282829-BSD1)				Prepared & Analyzed: 05/26/21						
Phosphorus, Total	0.20	0.050	mg/L	0.167		118	76.5-122	5.54	12.6	

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SM 21-22 4500 P E in Water	
Phosphorus, Total	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 4500 H B in Water	
pH	CT,MA,RI
SW-846 6020B in Water	
Antimony	CT,NH,NY,ME,VA,NC
Lead	CT,NH,NY,NC,ME,VA
Nickel	CT,NH,NY,NC,ME,VA

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2021
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2021
FL	Florida Department of Health	E871027 NELAP	06/30/2021
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2021
ME	State of Maine	MA00100	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2021
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2021
NC-DW	North Carolina Department of Health	25703	07/31/2021
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



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ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Vertex

Received By [Signature] Date 5/25/20 Time 1414

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 4.4
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? n/a Were Samples Tampered with? n/a
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F

Are there Rushes? F

Are there Short Holds? T

Is there enough Volume? T

Is there Headspace where applicable? n/a

Proper Media/Containers Used? T

Were trip blanks received? F

Do all samples have the proper pH? _____

Who was notified? _____

Who was notified? _____

Who was notified? Cassie

MS/MSD? F

Is splitting samples required? F

On COC? F

Acid T Base n/a

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

November 11, 2021

William Gibbons
Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114

Project Location: Wayland, MA
Client Job Number:
Project Number: 67404
Laboratory Work Order Number: 21J0574

Enclosed are results of analyses for samples as received by the laboratory on October 11, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager

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Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114
ATTN: William Gibbons

REPORT DATE: 11/11/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 67404

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J0574

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

PROJECT LOCATION: Wayland, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
V-201(MW)	21J0574-01	Ground Water		SM19-23 4500 NH3 C SW-846 6020B SW-846 8270E	
V-304(MW)	21J0574-02	Ground Water		SM19-23 4500 NH3 C SW-846 6020B SW-846 8270E	
V-305(MW)	21J0574-03	Ground Water		SM19-23 4500 NH3 C SW-846 6020B SW-846 8270E	
V-202(MW)	21J0574-04	Ground Water		SM19-23 4500 NH3 C SW-846 6020B SW-846 8270E	
V-302(MW)	21J0574-05	Ground Water		SM19-23 4500 NH3 C SW-846 6020B SW-846 8270E	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

REVISION: 11/11/2021 Project number updated per client request.

SW-846 8270E

Qualifications:

V-04

Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria. Reported result is estimated.

Analyte & Samples(s) Qualified:

2,4-Dinitrophenol

S064335-CCV1, S064420-CCV1

Benzidine

S064197-CCV1, S064314-CCV1

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

2-Methylphenol

S064197-CCV1

4-Nitrophenol

S064335-CCV1, S064420-CCV1

Benzidine

S064197-CCV1, S064314-CCV1

Bis(2-chloroethyl)ether

S064197-CCV1

Bis(2-chloroisopropyl)ether

S064197-CCV1, S064314-CCV1

Hexachlorocyclopentadiene

S064197-CCV1, S064314-CCV1

N-Nitrosodimethylamine

S064197-CCV1, S064314-CCV1

V-06

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

Analyte & Samples(s) Qualified:

2,4-Dinitrophenol

S064335-CCV1, S064420-CCV1

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

4-Chloroaniline

S064197-CCV1, S064314-CCV1, S064335-CCV1, S064420-CCV1

Pyridine

S064197-CCV1, S064314-CCV1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Jessica L. Hoffman
Project Manager

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Field Sample #: V-201(MW)

Sampled: 10/11/2021 14:37

Sample ID: 21J0574-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
N-Nitrosodimethylamine	ND	9.9	µg/L	1		SW-846 8270E	10/12/21	10/18/21 13:18	BGL
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
2-Fluorophenol	42.7		15-110					10/18/21 13:18	
Phenol-d6	28.7		15-110					10/18/21 13:18	
Nitrobenzene-d5	62.6		30-130					10/18/21 13:18	
2-Fluorobiphenyl	79.7		30-130					10/18/21 13:18	
2,4,6-Tribromophenol	102		15-110					10/18/21 13:18	
p-Terphenyl-d14	86.8		30-130					10/18/21 13:18	

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Field Sample #: V-201(MW)

Sampled: 10/11/2021 14:37

Sample ID: 21J0574-01

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	9.1	0.80	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:31	QNW
Nickel	9.7	5.0	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:31	QNW



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Field Sample #: V-201(MW)

Sampled: 10/11/2021 14:37

Sample ID: 21J0574-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	2.0	0.30	mg/L	1		SM19-23 4500 NH3 C	10/16/21	10/16/21 9:05	FAT

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Field Sample #: V-304(MW)

Sampled: 10/11/2021 09:35

Sample ID: 21J0574-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
N-Nitrosodimethylamine	ND	10	µg/L	1		SW-846 8270E	10/12/21	10/18/21 13:45	BGL
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
2-Fluorophenol	37.7		15-110					10/18/21 13:45	
Phenol-d6	25.3		15-110					10/18/21 13:45	
Nitrobenzene-d5	46.1		30-130					10/18/21 13:45	
2-Fluorobiphenyl	56.0		30-130					10/18/21 13:45	
2,4,6-Tribromophenol	79.5		15-110					10/18/21 13:45	
p-Terphenyl-d14	74.8		30-130					10/18/21 13:45	



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Sampled: 10/11/2021 09:35

Field Sample #: V-304(MW)

Sample ID: 21J0574-02

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	4.7	0.80	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:38	QNW
Nickel	ND	5.0	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:38	QNW



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Sampled: 10/11/2021 09:35

Field Sample #: V-304(MW)

Sample ID: 21J0574-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	ND	0.30	mg/L	1		SM19-23 4500 NH3 C	10/16/21	10/16/21 9:05	FAT



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Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Field Sample #: V-305(MW)

Sampled: 10/11/2021 11:30

Sample ID: 21J0574-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
N-Nitrosodimethylamine	ND	10	µg/L	1		SW-846 8270E	10/12/21	10/18/21 14:11	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual
2-Fluorophenol	36.6	15-110	
Phenol-d6	27.0	15-110	
Nitrobenzene-d5	49.3	30-130	
2-Fluorobiphenyl	65.0	30-130	
2,4,6-Tribromophenol	93.2	15-110	
p-Terphenyl-d14	86.6	30-130	



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Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Sampled: 10/11/2021 11:30

Field Sample #: V-305(MW)

Sample ID: 21J0574-03

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.80	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:40	QNW
Nickel	11	5.0	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:40	QNW



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Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Sampled: 10/11/2021 11:30

Field Sample #: V-305(MW)

Sample ID: 21J0574-03

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	ND	0.30	mg/L	1		SM19-23 4500 NH3 C	10/16/21	10/16/21 9:05	FAT

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Field Sample #: V-202(MW)

Sampled: 10/11/2021 13:35

Sample ID: 21J0574-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
N-Nitrosodimethylamine	ND	9.8	µg/L	1		SW-846 8270E	10/12/21	10/15/21 11:22	IMR
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorophenol		59.8	15-110					10/15/21 11:22	
Phenol-d6		47.8	15-110					10/15/21 11:22	
Nitrobenzene-d5		57.3	30-130					10/15/21 11:22	
2-Fluorobiphenyl		74.1	30-130					10/15/21 11:22	
2,4,6-Tribromophenol		92.4	15-110					10/15/21 11:22	
p-Terphenyl-d14		86.3	30-130					10/15/21 11:22	



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Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Sampled: 10/11/2021 13:35

Field Sample #: V-202(MW)

Sample ID: 21J0574-04

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	120	0.80	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:42	QNW
Nickel	15	5.0	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:42	QNW



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Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Sampled: 10/11/2021 13:35

Field Sample #: V-202(MW)

Sample ID: 21J0574-04

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	4.8	0.30	mg/L	1		SM19-23 4500 NH3 C	10/16/21	10/16/21 9:05	FAT

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Field Sample #: V-302(MW)

Sampled: 10/11/2021 15:55

Sample ID: 21J0574-05

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
N-Nitrosodimethylamine	ND	9.8	µg/L	1		SW-846 8270E	10/12/21	10/15/21 11:48	IMR
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
2-Fluorophenol	49.5		15-110					10/15/21 11:48	
Phenol-d6	39.6		15-110					10/15/21 11:48	
Nitrobenzene-d5	48.0		30-130					10/15/21 11:48	
2-Fluorobiphenyl	59.8		30-130					10/15/21 11:48	
2,4,6-Tribromophenol	73.2		15-110					10/15/21 11:48	
p-Terphenyl-d14	69.2		30-130					10/15/21 11:48	

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Field Sample #: V-302(MW)

Sampled: 10/11/2021 15:55

Sample ID: 21J0574-05

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	98	0.80	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:44	QNW
Nickel	14	5.0	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:44	QNW



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0574

Date Received: 10/11/2021

Sampled: 10/11/2021 15:55

Field Sample #: V-302(MW)

Sample ID: 21J0574-05

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	8.7	0.30	mg/L	1		SM19-23 4500 NH3 C	10/16/21	10/16/21 9:05	FAT

Sample Extraction Data
Prep Method: SM 4500-NH3 C Analytical Method: SM19-23 4500 NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J0574-01 [V-201(MW)]	B292431	100	100	10/16/21
21J0574-02 [V-304(MW)]	B292431	100	100	10/16/21
21J0574-03 [V-305(MW)]	B292431	100	100	10/16/21
21J0574-04 [V-202(MW)]	B292431	100	100	10/16/21
21J0574-05 [V-302(MW)]	B292431	100	100	10/16/21

Prep Method: SW-846 3005A Dissolved Analytical Method: SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J0574-01 [V-201(MW)]	B292693	10.0	10.0	10/18/21
21J0574-02 [V-304(MW)]	B292693	10.0	10.0	10/18/21
21J0574-03 [V-305(MW)]	B292693	10.0	10.0	10/18/21
21J0574-04 [V-202(MW)]	B292693	10.0	10.0	10/18/21
21J0574-05 [V-302(MW)]	B292693	10.0	10.0	10/18/21

Prep Method: SW-846 3510C Analytical Method: SW-846 8270E

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J0574-01 [V-201(MW)]	B292239	1010	1.00	10/12/21
21J0574-02 [V-304(MW)]	B292239	1000	1.00	10/12/21
21J0574-03 [V-305(MW)]	B292239	980	1.00	10/12/21
21J0574-04 [V-202(MW)]	B292239	1020	1.00	10/12/21
21J0574-05 [V-302(MW)]	B292239	1020	1.00	10/12/21

QUALITY CONTROL
Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292239 - SW-846 3510C										
Blank (B292239-BLK1)										
Prepared: 10/12/21 Analyzed: 10/18/21										
N-Nitrosodimethylamine	ND	10	µg/L							
Surrogate: 2-Fluorophenol	76.3		µg/L	200		38.1	15-110			
Surrogate: Phenol-d6	53.0		µg/L	200		26.5	15-110			
Surrogate: Nitrobenzene-d5	52.0		µg/L	100		52.0	30-130			
Surrogate: 2-Fluorobiphenyl	66.3		µg/L	100		66.3	30-130			
Surrogate: 2,4,6-Tribromophenol	206		µg/L	200		103	15-110			
Surrogate: p-Terphenyl-d14	96.6		µg/L	100		96.6	30-130			
LCS (B292239-BS1)										
Prepared: 10/12/21 Analyzed: 10/18/21										
N-Nitrosodimethylamine	22.5	10	µg/L	50.0		45.1	40-140			
Surrogate: 2-Fluorophenol	91.2		µg/L	200		45.6	15-110			
Surrogate: Phenol-d6	62.5		µg/L	200		31.3	15-110			
Surrogate: Nitrobenzene-d5	58.2		µg/L	100		58.2	30-130			
Surrogate: 2-Fluorobiphenyl	70.1		µg/L	100		70.1	30-130			
Surrogate: 2,4,6-Tribromophenol	193		µg/L	200		96.7	15-110			
Surrogate: p-Terphenyl-d14	80.7		µg/L	100		80.7	30-130			
LCS Dup (B292239-BSD1)										
Prepared: 10/12/21 Analyzed: 10/18/21										
N-Nitrosodimethylamine	24.5	10	µg/L	50.0		48.9	40-140	8.17	20	
Surrogate: 2-Fluorophenol	93.0		µg/L	200		46.5	15-110			
Surrogate: Phenol-d6	62.3		µg/L	200		31.2	15-110			
Surrogate: Nitrobenzene-d5	61.2		µg/L	100		61.2	30-130			
Surrogate: 2-Fluorobiphenyl	73.1		µg/L	100		73.1	30-130			
Surrogate: 2,4,6-Tribromophenol	202		µg/L	200		101	15-110			
Surrogate: p-Terphenyl-d14	88.8		µg/L	100		88.8	30-130			

QUALITY CONTROL
Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292693 - SW-846 3005A Dissolved
Blank (B292693-BLK1)

Prepared: 10/18/21 Analyzed: 10/19/21

Arsenic	ND	0.80	µg/L							
Nickel	ND	5.0	µg/L							

LCS (B292693-BS1)

Prepared: 10/18/21 Analyzed: 10/19/21

Arsenic	105	0.80	µg/L	100		105	80-120			
Nickel	108	5.0	µg/L	100		108	80-120			

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
V-04	Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria. Reported result is estimated.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
V-06	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.
V-34	Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
SM19-23 4500 NH3 C in Water	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
SW-846 6020B in Water	
Arsenic	CT,NH,NY,NC,ME,VA
Nickel	CT,NH,NY,NC,ME,VA
SW-846 8270E in Soil	
N-Nitrosodimethylamine	CT,NY,NH,ME,NC,VA
2-Fluorophenol	NC
SW-846 8270E in Water	
N-Nitrosodimethylamine	CT,NY,NC,ME,NH,VA
2-Fluorophenol	NC

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Vertex
 Received By OM Date 10/10/21 Time 1850
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 3 Actual Temp - 2.0
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? Na Were Samples Tampered with? Na
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? na MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? Acid T Base na

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.	10	1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	10	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

November 1, 2021

William Gibbons
Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114

Project Location: Wayland, MA
Client Job Number:
Project Number: 61404
Laboratory Work Order Number: 21J0579

Enclosed are results of analyses for samples as received by the laboratory on October 11, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114
ATTN: William Gibbons

REPORT DATE: 11/1/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 61404

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J0579

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

PROJECT LOCATION: Wayland, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
V-201(MW)	21J0579-01	Ground Water		SOP-454 PFAS	
V-304(MW)	21J0579-02	Ground Water		SOP-454 PFAS	
V-305(MW)	21J0579-03	Ground Water		SOP-454 PFAS	
V-202(MW)	21J0579-04	Ground Water		SOP-454 PFAS	
V-302(MW)	21J0579-05	Ground Water		SOP-454 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SOP-454 PFAS**Qualifications:****L-07**

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

N-EtFOSAA
B292238-BS1

PF-17

Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.

Analyte & Samples(s) Qualified:

M3HFPO-DA
B292776-BLK1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

Perfluorotridecanoic acid (PFTrDA)
B292776-BSD1

S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

M2-8:2FTS
B292776-BS1, S064378-CCV3

M3HFPO-DA
B292776-BS1, B292776-BSD1

MPFBA
B292776-BS1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

6:2 Fluorotelomersulfonic acid (6:2)
S064378-CCV3

Z-01

Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects. Original results reported.

Analyte & Samples(s) Qualified:

d5-NEtFOSAA
21J0579-01[V-201(MW)]

M2PFTA
21J0579-01[V-201(MW)], 21J0579-02[V-304(MW)], 21J0579-04[V-202(MW)]

M7PFUnA
21J0579-01[V-201(MW)], 21J0579-02[V-304(MW)], 21J0579-04[V-202(MW)]

MPFDoA
21J0579-01[V-201(MW)], 21J0579-02[V-304(MW)], 21J0579-04[V-202(MW)]

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0579

Date Received: 10/11/2021

Field Sample #: V-201(MW)

Sampled: 10/11/2021 14:37

Sample ID: 21J0579-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	13	1.9	0.27	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC
Perfluorohexanoic acid (PFHxA)	34	1.9	0.37	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC
Perfluorodecanoic acid (PFDA)	0.96	1.9	0.47	ng/L	1	J	SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.42	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC
N-EtFOSAA	0.71	1.9	0.60	ng/L	1	J	SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC
N-MeFOSAA	ND	1.9	0.72	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC
Perfluorohexanesulfonic acid (PFHxS)	120	1.9	0.32	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC
Perfluoroheptanoic acid (PFHpA)	21	1.9	0.33	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC
Perfluorooctanoic acid (PFOA)	47	1.9	0.65	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC
Perfluorooctanesulfonic acid (PFOS)	26	1.9	0.57	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC
Perfluorononanoic acid (PFNA)	3.1	1.9	0.33	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:43	JFC

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Project Location: Wayland, MA

Sample Description:

Work Order: 21J0579

Date Received: 10/11/2021

Field Sample #: V-304(MW)

Sampled: 10/11/2021 09:35

Sample ID: 21J0579-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	1.7	1.8	0.26	ng/L	1	J	SOP-454 PFAS	10/13/21	10/18/21 18:50	JFC
Perfluorohexanoic acid (PFHxA)	5.9	1.8	0.35	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:50	JFC
Perfluorodecanoic acid (PFDA)	ND	1.8	0.45	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:50	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.40	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:50	JFC
N-EtFOSAA	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	10/21/21	10/28/21 17:50	BLH
N-MeFOSAA	ND	1.8	0.69	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:50	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.8	0.33	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:50	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:50	JFC
Perfluorohexanesulfonic acid (PFHxS)	4.7	1.8	0.31	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:50	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:50	JFC
Perfluoroheptanoic acid (PFHpA)	1.9	1.8	0.31	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:50	JFC
Perfluorooctanoic acid (PFOA)	3.4	1.8	0.62	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:50	JFC
Perfluorooctanesulfonic acid (PFOS)	1.0	1.8	0.55	ng/L	1	J	SOP-454 PFAS	10/13/21	10/18/21 18:50	JFC
Perfluorononanoic acid (PFNA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:50	JFC

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Project Location: Wayland, MA

Sample Description:

Work Order: 21J0579

Date Received: 10/11/2021

Field Sample #: V-305(MW)

Sampled: 10/11/2021 11:30

Sample ID: 21J0579-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	2.8	1.9	0.26	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC
Perfluorohexanoic acid (PFHxA)	5.2	1.9	0.36	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC
Perfluorodecanoic acid (PFDA)	0.46	1.9	0.46	ng/L	1	J	SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC
N-EtFOSAA	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC
N-MeFOSAA	ND	1.9	0.71	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC
Perfluorohexanesulfonic acid (PFHxS)	8.6	1.9	0.32	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC
Perfluoroheptanoic acid (PFHpA)	5.5	1.9	0.32	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC
Perfluorooctanoic acid (PFOA)	23	1.9	0.64	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC
Perfluorooctanesulfonic acid (PFOS)	8.9	1.9	0.56	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC
Perfluorononanoic acid (PFNA)	1.2	1.9	0.32	ng/L	1	J	SOP-454 PFAS	10/13/21	10/18/21 18:57	JFC

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Project Location: Wayland, MA

Sample Description:

Work Order: 21J0579

Date Received: 10/11/2021

Field Sample #: V-202(MW)

Sampled: 10/11/2021 13:35

Sample ID: 21J0579-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	7.1	1.8	0.26	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:04	JFC
Perfluorohexanoic acid (PFHxA)	22	1.8	0.35	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:04	JFC
Perfluorodecanoic acid (PFDA)	0.85	1.8	0.44	ng/L	1	J	SOP-454 PFAS	10/13/21	10/18/21 19:04	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.40	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:04	JFC
N-EtFOSAA	0.99	1.9	0.61	ng/L	1	J	SOP-454 PFAS	10/21/21	10/28/21 17:57	BLH
N-MeFOSAA	ND	1.9	0.74	ng/L	1		SOP-454 PFAS	10/21/21	10/28/21 17:57	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.8	0.33	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:04	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:04	JFC
Perfluorohexanesulfonic acid (PFHxS)	33	1.8	0.31	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:04	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.33	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:04	JFC
Perfluoroheptanoic acid (PFHpA)	11	1.8	0.31	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:04	JFC
Perfluorooctanoic acid (PFOA)	70	1.8	0.62	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:04	JFC
Perfluorooctanesulfonic acid (PFOS)	22	1.8	0.55	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:04	JFC
Perfluorononanoic acid (PFNA)	2.4	1.8	0.31	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:04	JFC

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Project Location: Wayland, MA

Sample Description:

Work Order: 21J0579

Date Received: 10/11/2021

Field Sample #: V-302(MW)

Sampled: 10/11/2021 15:55

Sample ID: 21J0579-05

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	4.8	1.9	0.26	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC
Perfluorohexanoic acid (PFHxA)	24	1.9	0.36	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC
Perfluorodecanoic acid (PFDA)	1.2	1.9	0.46	ng/L	1	J	SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC
N-EtFOSAA	4.2	1.9	0.59	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC
N-MeFOSAA	ND	1.9	0.71	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC
Perfluorohexanesulfonic acid (PFHxS)	16	1.9	0.32	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC
Perfluoroheptanoic acid (PFHpA)	11	1.9	0.32	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC
Perfluorooctanoic acid (PFOA)	73	1.9	0.64	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC
Perfluorooctanesulfonic acid (PFOS)	24	1.9	0.56	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC
Perfluorononanoic acid (PFNA)	3.4	1.9	0.32	ng/L	1		SOP-454 PFAS	10/13/21	10/18/21 19:11	JFC

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Sample Extraction Data**Prep Method: SOP 454-PFAAS Analytical Method: SOP-454 PFAS**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J0579-01 [V-201(MW)]	B292238	264	1.00	10/13/21
21J0579-02 [V-304(MW)]	B292238	274	1.00	10/13/21
21J0579-03 [V-305(MW)]	B292238	268	1.00	10/13/21
21J0579-04 [V-202(MW)]	B292238	276	1.00	10/13/21
21J0579-05 [V-302(MW)]	B292238	267	1.00	10/13/21

Prep Method: SOP 454-PFAAS Analytical Method: SOP-454 PFAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J0579-02RE1 [V-304(MW)]	B292776	263	1.00	10/21/21
21J0579-04RE1 [V-202(MW)]	B292776	258	1.00	10/21/21

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QUALITY CONTROL
Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292238 - SOP 454-PFAAS										
Blank (B292238-BLK1)										
Prepared: 10/13/21 Analyzed: 10/15/21										
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
N-EtFOSAA	ND	2.0	ng/L							
N-MeFOSAA	ND	2.0	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L							
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L							
LCS (B292238-BS1)										
Prepared: 10/13/21 Analyzed: 10/15/21										
Perfluorobutanesulfonic acid (PFBS)	9.67	2.0	ng/L	8.84		109	72-130			
Perfluorohexanoic acid (PFHxA)	10.9	2.0	ng/L	9.99		109	72-129			
Perfluorodecanoic acid (PFDA)	11.4	2.0	ng/L	9.99		114	71-129			
Perfluorododecanoic acid (PFDoA)	11.2	2.0	ng/L	9.99		112	72-134			
N-EtFOSAA	15.1	2.0	ng/L	9.99		152	* 61-135			L-07
N-MeFOSAA	12.2	2.0	ng/L	9.99		122	65-136			
Perfluorotetradecanoic acid (PFTA)	10.5	2.0	ng/L	9.99		106	71-132			
Perfluorotridecanoic acid (PFTrDA)	12.0	2.0	ng/L	9.99		120	65-144			
Perfluorohexanesulfonic acid (PFHxS)	10.3	2.0	ng/L	9.09		114	68-131			
Perfluoroundecanoic acid (PFUnA)	10.4	2.0	ng/L	9.99		104	69-133			
Perfluoroheptanoic acid (PFHpA)	12.6	2.0	ng/L	9.99		126	72-130			
Perfluorooctanoic acid (PFOA)	12.9	2.0	ng/L	9.99		129	71-133			
Perfluorooctanesulfonic acid (PFOS)	10.8	2.0	ng/L	9.24		117	65-140			
Perfluorononanoic acid (PFNA)	11.9	2.0	ng/L	9.99		119	69-130			
LCS Dup (B292238-BS1)										
Prepared: 10/13/21 Analyzed: 10/15/21										
Perfluorobutanesulfonic acid (PFBS)	9.22	2.0	ng/L	8.94		103	72-130	4.74	30	
Perfluorohexanoic acid (PFHxA)	10.2	2.0	ng/L	10.1		101	72-129	6.72	30	
Perfluorodecanoic acid (PFDA)	9.96	2.0	ng/L	10.1		98.5	71-129	13.4	30	
Perfluorododecanoic acid (PFDoA)	10.5	2.0	ng/L	10.1		104	72-134	6.19	30	
N-EtFOSAA	13.4	2.0	ng/L	10.1		133	61-135	12.3	30	
N-MeFOSAA	10.8	2.0	ng/L	10.1		107	65-136	12.2	30	
Perfluorotetradecanoic acid (PFTA)	10.3	2.0	ng/L	10.1		102	71-132	2.29	30	
Perfluorotridecanoic acid (PFTrDA)	12.1	2.0	ng/L	10.1		120	65-144	1.20	30	
Perfluorohexanesulfonic acid (PFHxS)	9.39	2.0	ng/L	9.19		102	68-131	9.54	30	
Perfluoroundecanoic acid (PFUnA)	9.53	2.0	ng/L	10.1		94.3	69-133	8.33	30	
Perfluoroheptanoic acid (PFHpA)	11.4	2.0	ng/L	10.1		113	72-130	10.0	30	
Perfluorooctanoic acid (PFOA)	11.9	2.0	ng/L	10.1		118	71-133	7.99	30	
Perfluorooctanesulfonic acid (PFOS)	10.2	2.0	ng/L	9.35		109	65-140	6.02	30	
Perfluorononanoic acid (PFNA)	11.7	2.0	ng/L	10.1		116	69-130	1.94	30	

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QUALITY CONTROL
Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292776 - SOP 454-PFAAS										
Blank (B292776-BLK1)										
				Prepared: 10/21/21 Analyzed: 10/28/21						
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
LCS (B292776-BS1)										
				Prepared: 10/21/21 Analyzed: 10/28/21						
Perfluorobutanesulfonic acid (PFBS)	7.63	1.9	ng/L	8.61		88.6	72-130			
Perfluorohexanoic acid (PFHxA)	8.70	1.9	ng/L	9.73		89.3	72-129			
Perfluorodecanoic acid (PFDA)	8.20	1.9	ng/L	9.73		84.2	71-129			
Perfluorododecanoic acid (PFDoA)	8.16	1.9	ng/L	9.73		83.9	72-134			
N-EtFOSAA	10.8	1.9	ng/L	9.73		111	61-135			
N-MeFOSAA	11.3	1.9	ng/L	9.73		116	65-136			
Perfluorotetradecanoic acid (PFTA)	7.37	1.9	ng/L	9.73		75.8	71-132			
Perfluorotridecanoic acid (PFTrDA)	7.73	1.9	ng/L	9.73		79.4	65-144			
Perfluorohexanesulfonic acid (PFHxS)	7.66	1.9	ng/L	8.86		86.5	68-131			
Perfluoroundecanoic acid (PFUnA)	8.26	1.9	ng/L	9.73		84.9	69-133			
Perfluoroheptanoic acid (PFHpA)	8.16	1.9	ng/L	9.73		83.8	72-130			
Perfluorooctanoic acid (PFOA)	8.41	1.9	ng/L	9.73		86.4	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.91	1.9	ng/L	9.00		87.8	65-140			
Perfluorononanoic acid (PFNA)	8.33	1.9	ng/L	9.73		85.6	69-130			
LCS Dup (B292776-BS1)										
				Prepared: 10/21/21 Analyzed: 10/28/21						
Perfluorobutanesulfonic acid (PFBS)	7.99	1.9	ng/L	8.62		92.6	72-130	4.55	30	
Perfluorohexanoic acid (PFHxA)	8.70	1.9	ng/L	9.74		89.4	72-129	0.110	30	
Perfluorodecanoic acid (PFDA)	8.60	1.9	ng/L	9.74		88.2	71-129	4.78	30	
Perfluorododecanoic acid (PFDoA)	8.07	1.9	ng/L	9.74		82.8	72-134	1.14	30	
N-EtFOSAA	9.66	1.9	ng/L	9.74		99.1	61-135	10.9	30	
N-MeFOSAA	11.5	1.9	ng/L	9.74		118	65-136	1.30	30	
Perfluorotetradecanoic acid (PFTA)	9.12	1.9	ng/L	9.74		93.6	71-132	21.2	30	
Perfluorotridecanoic acid (PFTrDA)	12.7	1.9	ng/L	9.74		130	65-144	48.4	30	R-05
Perfluorohexanesulfonic acid (PFHxS)	8.51	1.9	ng/L	8.86		96.0	68-131	10.5	30	
Perfluoroundecanoic acid (PFUnA)	8.49	1.9	ng/L	9.74		87.1	69-133	2.70	30	
Perfluoroheptanoic acid (PFHpA)	7.99	1.9	ng/L	9.74		82.0	72-130	2.10	30	
Perfluorooctanoic acid (PFOA)	8.43	1.9	ng/L	9.74		86.5	71-133	0.171	30	
Perfluorooctanesulfonic acid (PFOS)	8.33	1.9	ng/L	9.01		92.4	65-140	5.18	30	
Perfluorononanoic acid (PFNA)	8.66	1.9	ng/L	9.74		88.9	69-130	3.96	30	

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
PF-17	Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
S-29	Extracted Internal Standard is outside of control limits.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Z-01	Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects. Original results reported.

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INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
V-201(MW) (21J0579-01)									
			Lab File ID: 21J0579-01.d			Analyzed: 10/18/21 18:43			
M2PFTA	37362.34	4.402783	1,542,819.00	4.402783	02	50 - 150	0.0000	+/-0.50	*
M6PFDA	628180.9	3.867333	740,879.00	3.867333	85	50 - 150	0.0000	+/-0.50	
M3PFBS	178614.3	1.986217	174,621.00	2.019367	102	50 - 150	-0.0332	+/-0.50	
M7PFUnA	470366.5	4.017983	1,052,808.00	4.017967	45	50 - 150	0.0000	+/-0.50	*
M5PFHxA	872242.7	2.706317	837,823.00	2.730867	104	50 - 150	-0.0246	+/-0.50	
M3PFHxS	122859.4	3.28425	120,293.00	3.2923	102	50 - 150	-0.0080	+/-0.50	
M4PFHpA	843975.2	3.251867	814,528.00	3.25995	104	50 - 150	-0.0081	+/-0.50	
M8PFOA	737232.7	3.52615	795,828.00	3.526133	93	50 - 150	0.0000	+/-0.50	
M8PFOS	107833.8	3.7083	134,156.00	3.708283	80	50 - 150	0.0000	+/-0.50	
M9PFNA	620697.8	3.709283	697,010.00	3.709283	89	50 - 150	0.0000	+/-0.50	
MPFDoA	162795.5	4.1612	1,102,909.00	4.1612	15	50 - 150	0.0000	+/-0.50	*
d5-NEtFOSAA	118874.3	4.02545	244,531.00	4.025434	49	50 - 150	0.0000	+/-0.50	*
d3-NMeFOSAA	194417.6	3.945867	311,300.00	3.945867	62	50 - 150	0.0000	+/-0.50	
V-304(MW) (21J0579-02)									
			Lab File ID: 21J0579-02.d			Analyzed: 10/18/21 18:50			
M2PFTA	6348.067	4.402783	1,542,819.00	4.402783	00	50 - 150	0.0000	+/-0.50	*
M6PFDA	559529.3	3.867333	740,879.00	3.867333	76	50 - 150	0.0000	+/-0.50	
M3PFBS	183514.7	2.011067	174,621.00	2.019367	105	50 - 150	-0.0083	+/-0.50	
M7PFUnA	376085.9	4.017967	1,052,808.00	4.017967	36	50 - 150	0.0000	+/-0.50	*
M5PFHxA	915920.5	2.722683	837,823.00	2.730867	109	50 - 150	-0.0082	+/-0.50	
M3PFHxS	130219.6	3.2923	120,293.00	3.2923	108	50 - 150	0.0000	+/-0.50	
M4PFHpA	911317.4	3.25995	814,528.00	3.25995	112	50 - 150	0.0000	+/-0.50	
M8PFOA	852313.4	3.526133	795,828.00	3.526133	107	50 - 150	0.0000	+/-0.50	
M8PFOS	107994	3.708283	134,156.00	3.708283	80	50 - 150	0.0000	+/-0.50	
M9PFNA	635876.6	3.709283	697,010.00	3.709283	91	50 - 150	0.0000	+/-0.50	
MPFDoA	121254.4	4.1612	1,102,909.00	4.1612	11	50 - 150	0.0000	+/-0.50	*
d3-NMeFOSAA	160810.5	3.945867	311,300.00	3.945867	52	50 - 150	0.0000	+/-0.50	
V-304(MW) (21J0579-02RE1)									
			Lab File ID: 21J0579-02RE1.d			Analyzed: 10/28/21 17:50			
d5-NEtFOSAA	127656.3	3.993483	229,719.00	4.01745	56	50 - 150	-0.0240	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
V-305(MW) (21J0579-03)									
			Lab File ID: 21J0579-03.d			Analyzed: 10/18/21 18:57			
M2PFTA	1532760	4.402783	1,542,819.00	4.402783	99	50 - 150	0.0000	+/-0.50	
M6PFDA	905968.8	3.867333	740,879.00	3.867333	122	50 - 150	0.0000	+/-0.50	
M3PFBS	192126.8	2.011067	174,621.00	2.019367	110	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1120884	4.017967	1,052,808.00	4.017967	106	50 - 150	0.0000	+/-0.50	
M5PFHxA	968805.3	2.722683	837,823.00	2.730867	116	50 - 150	-0.0082	+/-0.50	
M3PFHxS	136975.6	3.2923	120,293.00	3.2923	114	50 - 150	0.0000	+/-0.50	
M4PFHpA	946653.4	3.25995	814,528.00	3.25995	116	50 - 150	0.0000	+/-0.50	
M8PFOA	852981.9	3.526133	795,828.00	3.526133	107	50 - 150	0.0000	+/-0.50	
M8PFOS	140818.6	3.708283	134,156.00	3.708283	105	50 - 150	0.0000	+/-0.50	
M9PFNA	748510.8	3.71725	697,010.00	3.709283	107	50 - 150	0.0080	+/-0.50	
MPFDoA	1072115	4.1612	1,102,909.00	4.1612	97	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	253061.3	4.02545	244,531.00	4.025434	103	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	325023.6	3.945867	311,300.00	3.945867	104	50 - 150	0.0000	+/-0.50	
V-202(MW) (21J0579-04)									
			Lab File ID: 21J0579-04.d			Analyzed: 10/18/21 19:04			
M2PFTA	8363.246	4.402783	1,542,819.00	4.402783	01	50 - 150	0.0000	+/-0.50	*
M6PFDA	666401.8	3.867333	740,879.00	3.867333	90	50 - 150	0.0000	+/-0.50	
M3PFBS	179534.5	2.002783	174,621.00	2.019367	103	50 - 150	-0.0166	+/-0.50	
M7PFUnA	511904.6	4.017983	1,052,808.00	4.017967	49	50 - 150	0.0000	+/-0.50	*
M5PFHxA	892604.6	2.7145	837,823.00	2.730867	107	50 - 150	-0.0164	+/-0.50	
M3PFHxS	121993.4	3.2923	120,293.00	3.2923	101	50 - 150	0.0000	+/-0.50	
M4PFHpA	839813.1	3.25995	814,528.00	3.25995	103	50 - 150	0.0000	+/-0.50	
M8PFOA	668808.5	3.526133	795,828.00	3.526133	84	50 - 150	0.0000	+/-0.50	
M8PFOS	122272.9	3.7083	134,156.00	3.708283	91	50 - 150	0.0000	+/-0.50	
M9PFNA	636166.3	3.709283	697,010.00	3.709283	91	50 - 150	0.0000	+/-0.50	
MPFDoA	133473.5	4.1612	1,102,909.00	4.1612	12	50 - 150	0.0000	+/-0.50	*
V-202(MW) (21J0579-04RE1)									
			Lab File ID: 21J0579-04RE1.d			Analyzed: 10/28/21 17:57			
d5-NEtFOSAA	118084.5	3.993467	229,719.00	4.01745	51	50 - 150	-0.0240	+/-0.50	
d3-NMeFOSAA	142048.9	3.9139	269,307.00	3.937883	53	50 - 150	-0.0240	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
V-302(MW) (21J0579-05)									
			Lab File ID: 21J0579-05.d			Analyzed: 10/18/21 19:11			
M2PFTA	999297.6	4.402783	1,542,819.00	4.402783	65	50 - 150	0.0000	+/-0.50	
M6PFDA	789557.7	3.867333	740,879.00	3.867333	107	50 - 150	0.0000	+/-0.50	
M3PFBS	171975.8	2.002783	174,621.00	2.019367	98	50 - 150	-0.0166	+/-0.50	
M7PFUnA	939462.9	4.017983	1,052,808.00	4.017967	89	50 - 150	0.0000	+/-0.50	
M5PFHxA	866792.4	2.7145	837,823.00	2.730867	103	50 - 150	-0.0164	+/-0.50	
M3PFHxS	119026	3.2923	120,293.00	3.2923	99	50 - 150	0.0000	+/-0.50	
M4PFHpA	827046	3.25995	814,528.00	3.25995	102	50 - 150	0.0000	+/-0.50	
M8PFOA	685133.8	3.52615	795,828.00	3.526133	86	50 - 150	0.0000	+/-0.50	
M8PFOS	110706.5	3.7083	134,156.00	3.708283	83	50 - 150	0.0000	+/-0.50	
M9PFNA	574296.1	3.709283	697,010.00	3.709283	82	50 - 150	0.0000	+/-0.50	
MPFDoA	944030.1	4.1612	1,102,909.00	4.1612	86	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	227862.4	4.02545	244,531.00	4.025434	93	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	254971.1	3.945867	311,300.00	3.945867	82	50 - 150	0.0000	+/-0.50	
Blank (B292238-BLK1)									
			Lab File ID: B292238-BLK1.d			Analyzed: 10/15/21 17:24			
M8FOSA	315474.5	4.052516	323,342.00	4.0685	98	50 - 150	-0.0160	+/-0.50	
M2-4:2FTS	165771.9	2.628217	181,988.00	2.661333	91	50 - 150	-0.0331	+/-0.50	
M2PFTA	1280189	4.4109	1,311,614.00	4.427217	98	50 - 150	-0.0163	+/-0.50	
M2-8:2FTS	153785.8	3.875067	167,918.00	3.891033	92	50 - 150	-0.0160	+/-0.50	
MPFBA	646453.8	1.116633	533,665.00	1.12495	121	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	203891.8	2.945967	185,086.00	2.978433	110	50 - 150	-0.0325	+/-0.50	
M6PFDA	729809.1	3.875583	764,052.00	3.89155	96	50 - 150	-0.0160	+/-0.50	
M3PFBS	151322.5	2.011067	144,334.00	2.035933	105	50 - 150	-0.0249	+/-0.50	
M7PFUnA	1006105	4.025967	984,395.00	4.04195	102	50 - 150	-0.0160	+/-0.50	
M2-6:2FTS	102727.6	3.5176	113,344.00	3.5336	91	50 - 150	-0.0160	+/-0.50	
M5PFPeA	615071.1	1.824517	544,543.00	1.8411	113	50 - 150	-0.0166	+/-0.50	
M5PFHxA	882484.1	2.722683	843,905.00	2.755417	105	50 - 150	-0.0327	+/-0.50	
M3PFHxS	106439.3	3.2923	108,327.00	3.308383	98	50 - 150	-0.0161	+/-0.50	
M4PFHpA	866041.6	3.25995	802,162.00	3.27725	108	50 - 150	-0.0173	+/-0.50	
M8PFOA	798533.9	3.526133	716,659.00	3.542117	111	50 - 150	-0.0160	+/-0.50	
M8PFOS	117716	3.708283	110,358.00	3.724233	107	50 - 150	-0.0159	+/-0.50	
M9PFNA	714736.8	3.709283	628,513.00	3.733183	114	50 - 150	-0.0239	+/-0.50	
MPFDoA	967992.1	4.169267	1,097,360.00	4.1854	88	50 - 150	-0.0161	+/-0.50	
d5-NEtFOSAA	230975.3	4.033433	235,740.00	4.049417	98	50 - 150	-0.0160	+/-0.50	
d3-NMeFOSAA	281039.3	3.95385	269,685.00	3.96985	104	50 - 150	-0.0160	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B292238-BS1)			Lab File ID: B292238-BS1.d			Analyzed: 10/15/21 17:10			
M8FOSA	319892.6	4.052516	323,342.00	4.0685	99	50 - 150	-0.0160	+/-0.50	
M2-4:2FTS	164889.1	2.628217	181,988.00	2.661333	91	50 - 150	-0.0331	+/-0.50	
M2PF _{TA}	1318702	4.4109	1,311,614.00	4.427217	101	50 - 150	-0.0163	+/-0.50	
M2-8:2FTS	151027.4	3.875067	167,918.00	3.891033	90	50 - 150	-0.0160	+/-0.50	
MPFBA	659549.6	1.116633	533,665.00	1.12495	124	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	211765.3	2.945967	185,086.00	2.978433	114	50 - 150	-0.0325	+/-0.50	
M6PFDA	775021.8	3.875583	764,052.00	3.89155	101	50 - 150	-0.0160	+/-0.50	
M3PFBS	150165.3	2.011067	144,334.00	2.035933	104	50 - 150	-0.0249	+/-0.50	
M7PFU _{nA}	1015861	4.025967	984,395.00	4.04195	103	50 - 150	-0.0160	+/-0.50	
M2-6:2FTS	91460.26	3.509617	113,344.00	3.5336	81	50 - 150	-0.0240	+/-0.50	
M5PFPeA	630607.9	1.824517	544,543.00	1.8411	116	50 - 150	-0.0166	+/-0.50	
M5PFH _{xA}	917396	2.722683	843,905.00	2.755417	109	50 - 150	-0.0327	+/-0.50	
M3PFH _{xS}	106967.7	3.28425	108,327.00	3.308383	99	50 - 150	-0.0241	+/-0.50	
M4PFH _{pA}	866254.1	3.25995	802,162.00	3.27725	108	50 - 150	-0.0173	+/-0.50	
M8PFOA	844152.5	3.526133	716,659.00	3.542117	118	50 - 150	-0.0160	+/-0.50	
M8PFOS	117897.4	3.708283	110,358.00	3.724233	107	50 - 150	-0.0159	+/-0.50	
M9PFNA	739552.5	3.709283	628,513.00	3.733183	118	50 - 150	-0.0239	+/-0.50	
MPFDoA	992206.1	4.169267	1,097,360.00	4.1854	90	50 - 150	-0.0161	+/-0.50	
d5-NEtFOSAA	217414.1	4.033433	235,740.00	4.049417	92	50 - 150	-0.0160	+/-0.50	
d3-NMeFOSAA	291085.1	3.953867	269,685.00	3.96985	108	50 - 150	-0.0160	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B292238-BSD1)			Lab File ID: B292238-BSD1.d			Analyzed: 10/15/21 17:17			
M8FOSA	362894.6	4.052516	323,342.00	4.0685	112	50 - 150	-0.0160	+/-0.50	
M2-4:2FTS	185274.5	2.628217	181,988.00	2.661333	102	50 - 150	-0.0331	+/-0.50	
M2PF _T A	1441816	4.4109	1,311,614.00	4.427217	110	50 - 150	-0.0163	+/-0.50	
M2-8:2FTS	179998.8	3.875067	167,918.00	3.891033	107	50 - 150	-0.0160	+/-0.50	
MPFBA	753728.8	1.116633	533,665.00	1.12495	141	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	218149.6	2.945967	185,086.00	2.978433	118	50 - 150	-0.0325	+/-0.50	
M6PFDA	939879.2	3.875583	764,052.00	3.89155	123	50 - 150	-0.0160	+/-0.50	
M3PFBS	173335.3	2.011067	144,334.00	2.035933	120	50 - 150	-0.0249	+/-0.50	
M7PF _U nA	1149405	4.025967	984,395.00	4.04195	117	50 - 150	-0.0160	+/-0.50	
M2-6:2FTS	114084.1	3.509617	113,344.00	3.5336	101	50 - 150	-0.0240	+/-0.50	
M5PF _P eA	722935.8	1.824517	544,543.00	1.8411	133	50 - 150	-0.0166	+/-0.50	
M5PF _H xA	1044559	2.722683	843,905.00	2.755417	124	50 - 150	-0.0327	+/-0.50	
M3PF _H xS	125406.1	3.28425	108,327.00	3.308383	116	50 - 150	-0.0241	+/-0.50	
M4PF _H pA	1001357	3.25995	802,162.00	3.27725	125	50 - 150	-0.0173	+/-0.50	
M8PFOA	932903	3.526133	716,659.00	3.542117	130	50 - 150	-0.0160	+/-0.50	
M8PFOS	134885.3	3.708283	110,358.00	3.724233	122	50 - 150	-0.0159	+/-0.50	
M9PFNA	797260.8	3.709283	628,513.00	3.733183	127	50 - 150	-0.0239	+/-0.50	
MPF _D oA	1112676	4.169267	1,097,360.00	4.1854	101	50 - 150	-0.0161	+/-0.50	
d5-NEtFOSAA	253159.4	4.033433	235,740.00	4.049417	107	50 - 150	-0.0160	+/-0.50	
d3-NMeFOSAA	341129.7	3.95385	269,685.00	3.96985	126	50 - 150	-0.0160	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B292776-BLK1)			Lab File ID: B292776-BLK1.d			Analyzed: 10/28/21 17:35			
M8FOSA	395254.6	4.060517	362,634.00	4.052516	109	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	184346.4	2.595367	159,245.00	2.628217	116	50 - 150	-0.0328	+/-0.50	
M2PFTA	1458412	4.378417	1,333,856.00	4.38655	109	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	201915.4	3.850933	172,307.00	3.858883	117	50 - 150	-0.0080	+/-0.50	
MPFBA	882235.9	1.100017	602,130.00	1.116633	147	50 - 150	-0.0166	+/-0.50	
M3HFPO-DA	365268.5	2.921133	233,032.00	2.945967	157	50 - 150	-0.0248	+/-0.50	*
M6PFDA	1131086	3.843467	866,885.00	3.859383	130	50 - 150	-0.0159	+/-0.50	
M3PFBS	188343.5	1.978033	140,103.00	2.011067	134	50 - 150	-0.0330	+/-0.50	
M7PFUnA	1363944	3.994	1,171,547.00	4.009984	116	50 - 150	-0.0160	+/-0.50	
M2-6:2FTS	123851.8	3.493333	105,518.00	3.509617	117	50 - 150	-0.0163	+/-0.50	
M5PFPeA	832112.3	1.791367	605,473.00	1.816233	137	50 - 150	-0.0249	+/-0.50	
M5PFHxA	1092066	2.68875	822,147.00	2.7145	133	50 - 150	-0.0257	+/-0.50	
M3PFHxS	133671.5	3.266817	106,348.00	3.284267	126	50 - 150	-0.0174	+/-0.50	
M4PFHpA	1118438	3.2357	792,703.00	3.251867	141	50 - 150	-0.0162	+/-0.50	
M8PFOA	1035399	3.51015	827,978.00	3.51815	125	50 - 150	-0.0080	+/-0.50	
M8PFOS	147597.8	3.692083	124,628.00	3.700067	118	50 - 150	-0.0080	+/-0.50	
M9PFNA	983139.9	3.693117	806,227.00	3.7011	122	50 - 150	-0.0080	+/-0.50	
MPFDoA	1265436	4.136817	1,177,447.00	4.14485	107	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	265433.8	4.001467	229,719.00	4.01745	116	50 - 150	-0.0160	+/-0.50	
d3-NMeFOSAA	333307.2	3.921883	269,307.00	3.937883	124	50 - 150	-0.0160	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B292776-BS1)			Lab File ID: B292776-BS1.d			Analyzed: 10/28/21 17:21			
M8FOSA	447778.4	4.060517	362,634.00	4.052516	123	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	197203.9	2.603583	159,245.00	2.628217	124	50 - 150	-0.0246	+/-0.50	
M2PF _T A	1624355	4.378433	1,333,856.00	4.38655	122	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	267761.6	3.850933	172,307.00	3.858883	155	50 - 150	-0.0080	+/-0.50	*
MPF _B A	910219.2	1.108317	602,130.00	1.116633	151	50 - 150	-0.0083	+/-0.50	*
M3HFPO-DA	460844.8	2.921133	233,032.00	2.945967	198	50 - 150	-0.0248	+/-0.50	*
M6PF _D A	1191580	3.851433	866,885.00	3.859383	137	50 - 150	-0.0079	+/-0.50	
M3PF _B S	200717.6	1.986217	140,103.00	2.011067	143	50 - 150	-0.0249	+/-0.50	
M7PF _U nA	1529532	3.994	1,171,547.00	4.009984	131	50 - 150	-0.0160	+/-0.50	
M2-6:2FTS	123953.2	3.49335	105,518.00	3.509617	117	50 - 150	-0.0163	+/-0.50	
M5PF _P eA	894052.3	1.799667	605,473.00	1.816233	148	50 - 150	-0.0166	+/-0.50	
M5PF _H xA	1153812	2.68875	822,147.00	2.7145	140	50 - 150	-0.0257	+/-0.50	
M3PF _H xS	148183.4	3.276217	106,348.00	3.284267	139	50 - 150	-0.0080	+/-0.50	
M4PF _H pA	1185512	3.243783	792,703.00	3.251867	150	50 - 150	-0.0081	+/-0.50	
M8PFOA	1115525	3.510167	827,978.00	3.51815	135	50 - 150	-0.0080	+/-0.50	
M8PFOS	169266.1	3.692083	124,628.00	3.700067	136	50 - 150	-0.0080	+/-0.50	
M9PFNA	1139241	3.693117	806,227.00	3.7011	141	50 - 150	-0.0080	+/-0.50	
MPF _D oA	1422099	4.136833	1,177,447.00	4.14485	121	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	287680.6	4.001467	229,719.00	4.01745	125	50 - 150	-0.0160	+/-0.50	
d3-NMeFOSAA	361738.6	3.929883	269,307.00	3.937883	134	50 - 150	-0.0080	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B292776-BSD1)			Lab File ID: B292776-BSD1.d			Analyzed: 10/28/21 17:28			
M8FOSA	402681.7	4.0605	362,634.00	4.052516	111	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	189394.4	2.595367	159,245.00	2.628217	119	50 - 150	-0.0328	+/-0.50	
M2PF _{TA}	988897.2	4.378417	1,333,856.00	4.38655	74	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	228014.9	3.842967	172,307.00	3.858883	132	50 - 150	-0.0159	+/-0.50	
MPF _{BA}	891124.4	1.108317	602,130.00	1.116633	148	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	406620	2.921133	233,032.00	2.945967	174	50 - 150	-0.0248	+/-0.50	*
M6PF _{DA}	1134098	3.843467	866,885.00	3.859383	131	50 - 150	-0.0159	+/-0.50	
M3PF _{BS}	187245.1	1.986217	140,103.00	2.011067	134	50 - 150	-0.0249	+/-0.50	
M7PF _{UnA}	1462053	3.993983	1,171,547.00	4.009984	125	50 - 150	-0.0160	+/-0.50	
M2-6:2FTS	121338.1	3.493333	105,518.00	3.509617	115	50 - 150	-0.0163	+/-0.50	
M5PF _{PeA}	864865.6	1.791367	605,473.00	1.816233	143	50 - 150	-0.0249	+/-0.50	
M5PF _{HxA}	1099883	2.68875	822,147.00	2.7145	134	50 - 150	-0.0257	+/-0.50	
M3PF _{HxS}	131214.7	3.266833	106,348.00	3.284267	123	50 - 150	-0.0174	+/-0.50	
M4PF _{HpA}	1132938	3.2357	792,703.00	3.251867	143	50 - 150	-0.0162	+/-0.50	
M8PFOA	1050543	3.50185	827,978.00	3.51815	127	50 - 150	-0.0163	+/-0.50	
M8PFOS	155073.5	3.692083	124,628.00	3.700067	124	50 - 150	-0.0080	+/-0.50	
M9PF _{NA}	944048.4	3.693117	806,227.00	3.7011	117	50 - 150	-0.0080	+/-0.50	
MPF _{DoA}	1478462	4.128783	1,177,447.00	4.14485	126	50 - 150	-0.0161	+/-0.50	
d5-NEtFOSAA	258106.2	4.001467	229,719.00	4.01745	112	50 - 150	-0.0160	+/-0.50	
d3-NMeFOSAA	318394.2	3.921883	269,307.00	3.937883	118	50 - 150	-0.0160	+/-0.50	

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-454 PFAS in Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Vertex

Received By [Signature] Date 10/11/21 Time 1850

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 3 Actual Temp - 20
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? Na Were Samples Tampered with? Na

Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F

Are there Rushes? F

Are there Short Holds? F

Is there enough Volume? T

Is there Headspace where applicable? Na

Proper Media/Containers Used? T

Were trip blanks received? F

Do all samples have the proper pH? F

Who was notified? _____

Who was notified? _____

Who was notified? _____

MS/MSD? F

Is splitting samples required? F

On COC? F

Acid Na Base Na

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	<u>15</u>	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

November 11, 2021

William Gibbons
Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114

Project Location: Wayland, MA
Client Job Number:
Project Number: 67404
Laboratory Work Order Number: 21J0748

Enclosed are results of analyses for samples as received by the laboratory on October 13, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager

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Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114
ATTN: William Gibbons

REPORT DATE: 11/11/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 67404

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J0748

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

PROJECT LOCATION: Wayland, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
V-303 (MW)	21J0748-01	Ground Water		SM19-23 4500 NH3 C SW-846 6020B SW-846 8270E	
V-306 (MW)	21J0748-02	Ground Water		SM19-23 4500 NH3 C SW-846 6020B SW-846 8270E	
V-301 (MW)	21J0748-03	Ground Water		SM19-23 4500 NH3 C SW-846 6020B SW-846 8270E	
V-301 (MW)-D	21J0748-04	Ground Water		SM19-23 4500 NH3 C SW-846 6020B SW-846 8270E	
Equipment Blank	21J0748-05	Ground Water		SM19-23 4500 NH3 C SW-846 6020B SW-846 8270E	
Trip Blank	21J0748-06	Ground Water		SW-846 8270E	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

REVISION: 11/11/2021 project number updated per client request.

SW-846 8270E

Qualifications:

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

N-Nitrosodimethylamine
B292712-BSD1

V-04

Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria. Reported result is estimated.

Analyte & Samples(s) Qualified:

2,4-Dinitrophenol
S064690-CCV1

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

Aniline
S064690-CCV1

Hexachlorocyclopentadiene
S064690-CCV1

V-06

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

Analyte & Samples(s) Qualified:

2,4-Dinitrophenol
S064690-CCV1

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

4-Chloroaniline
S064690-CCV1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Jessica L. Hoffman
Project Manager

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Field Sample #: V-303 (MW)

Sampled: 10/12/2021 09:10

Sample ID: 21J0748-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
N-Nitrosodimethylamine	ND	10	µg/L	1		SW-846 8270E	10/19/21	10/26/21 13:42	BGL
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
2-Fluorophenol	37.3		15-110					10/26/21 13:42	
Phenol-d6	23.8		15-110					10/26/21 13:42	
Nitrobenzene-d5	55.3		30-130					10/26/21 13:42	
2-Fluorobiphenyl	71.4		30-130					10/26/21 13:42	
2,4,6-Tribromophenol	90.6		15-110					10/26/21 13:42	
p-Terphenyl-d14	83.3		30-130					10/26/21 13:42	

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Field Sample #: V-303 (MW)

Sampled: 10/12/2021 09:10

Sample ID: 21J0748-01

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	160	0.80	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:46	QNW
Nickel	22	5.0	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:46	QNW

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Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Field Sample #: V-303 (MW)

Sampled: 10/12/2021 09:10

Sample ID: 21J0748-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	12	0.30	mg/L	1		SM19-23 4500 NH3 C	10/25/21	10/26/21 9:30	EC

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Field Sample #: V-306 (MW)

Sampled: 10/12/2021 11:10

Sample ID: 21J0748-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
N-Nitrosodimethylamine	ND	10	µg/L	1		SW-846 8270E	10/19/21	10/26/21 14:12	BGL
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
2-Fluorophenol	40.9		15-110					10/26/21 14:12	
Phenol-d6	25.5		15-110					10/26/21 14:12	
Nitrobenzene-d5	62.9		30-130					10/26/21 14:12	
2-Fluorobiphenyl	74.9		30-130					10/26/21 14:12	
2,4,6-Tribromophenol	93.6		15-110					10/26/21 14:12	
p-Terphenyl-d14	85.4		30-130					10/26/21 14:12	

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Field Sample #: V-306 (MW)

Sampled: 10/12/2021 11:10

Sample ID: 21J0748-02

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.80	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:48	QNW
Nickel	44	5.0	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:48	QNW



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Sampled: 10/12/2021 11:10

Field Sample #: V-306 (MW)

Sample ID: 21J0748-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	3.9	0.30	mg/L	1		SM19-23 4500 NH3 C	10/25/21	10/26/21 9:30	EC

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Field Sample #: V-301 (MW)

Sampled: 10/12/2021 13:50

Sample ID: 21J0748-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
N-Nitrosodimethylamine	ND	9.7	µg/L	1		SW-846 8270E	10/19/21	10/26/21 14:36	BGL
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
2-Fluorophenol	33.6		15-110					10/26/21 14:36	
Phenol-d6	21.6		15-110					10/26/21 14:36	
Nitrobenzene-d5	53.6		30-130					10/26/21 14:36	
2-Fluorobiphenyl	68.0		30-130					10/26/21 14:36	
2,4,6-Tribromophenol	84.6		15-110					10/26/21 14:36	
p-Terphenyl-d14	77.8		30-130					10/26/21 14:36	

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Field Sample #: V-301 (MW)

Sampled: 10/12/2021 13:50

Sample ID: 21J0748-03

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	1.2	0.80	µg/L	1		SW-846 6020B	10/18/21	10/19/21 14:55	QNW
Nickel	29	5.0	µg/L	1		SW-846 6020B	10/18/21	10/19/21 14:55	QNW

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Sampled: 10/12/2021 13:50

Field Sample #: V-301 (MW)

Sample ID: 21J0748-03

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	5.7	0.30	mg/L	1		SM19-23 4500 NH3 C	10/16/21	10/16/21 9:05	FAT

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Field Sample #: V-301 (MW)-D

Sampled: 10/12/2021 13:51

Sample ID: 21J0748-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
N-Nitrosodimethylamine	ND	9.9	µg/L	1		SW-846 8270E	10/19/21	10/26/21 16:11	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorophenol		26.9	15-110					10/26/21 16:11	
Phenol-d6		20.8	15-110					10/26/21 16:11	
Nitrobenzene-d5		44.0	30-130					10/26/21 16:11	
2-Fluorobiphenyl		64.4	30-130					10/26/21 16:11	
2,4,6-Tribromophenol		96.2	15-110					10/26/21 16:11	
p-Terphenyl-d14		89.1	30-130					10/26/21 16:11	

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Field Sample #: V-301 (MW)-D

Sampled: 10/12/2021 13:51

Sample ID: 21J0748-04

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	1.2	0.80	µg/L	1		SW-846 6020B	10/18/21	10/19/21 15:01	QNW
Nickel	30	5.0	µg/L	1		SW-846 6020B	10/18/21	10/19/21 15:01	QNW



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Sampled: 10/12/2021 13:51

Field Sample #: V-301 (MW)-D

Sample ID: 21J0748-04

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	5.9	0.30	mg/L	1		SM19-23 4500 NH3 C	10/16/21	10/16/21 9:05	FAT

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Field Sample #: Equipment Blank

Sampled: 10/12/2021 14:30

Sample ID: 21J0748-05

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
N-Nitrosodimethylamine	ND	9.7	µg/L	1		SW-846 8270E	10/19/21	10/26/21 16:37	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorophenol		33.1	15-110					10/26/21 16:37	
Phenol-d6		21.7	15-110					10/26/21 16:37	
Nitrobenzene-d5		50.9	30-130					10/26/21 16:37	
2-Fluorobiphenyl		63.4	30-130					10/26/21 16:37	
2,4,6-Tribromophenol		83.1	15-110					10/26/21 16:37	
p-Terphenyl-d14		77.2	30-130					10/26/21 16:37	

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Field Sample #: Equipment Blank

Sampled: 10/12/2021 14:30

Sample ID: 21J0748-05

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.80	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:51	QNW
Nickel	ND	5.0	µg/L	1		SW-846 6020B	10/18/21	10/19/21 13:51	QNW



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Field Sample #: Equipment Blank

Sampled: 10/12/2021 14:30

Sample ID: 21J0748-05

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	ND	0.30	mg/L	1		SM19-23 4500 NH3 C	10/16/21	10/16/21 9:05	FAT

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0748

Date Received: 10/13/2021

Field Sample #: Trip Blank

Sampled: 10/12/2021 14:40

Sample ID: 21J0748-06

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
N-Nitrosodimethylamine	ND	10	µg/L	1		SW-846 8270E	10/19/21	10/26/21 17:04	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual
2-Fluorophenol	38.2	15-110	
Phenol-d6	25.0	15-110	
Nitrobenzene-d5	56.9	30-130	
2-Fluorobiphenyl	69.9	30-130	
2,4,6-Tribromophenol	87.2	15-110	
p-Terphenyl-d14	81.9	30-130	

Sample Extraction Data
Prep Method: SM 4500-NH3 C Analytical Method: SM19-23 4500 NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J0748-03 [V-301 (MW)]	B292431	100	100	10/16/21
21J0748-04 [V-301 (MW)-D]	B292431	100	100	10/16/21
21J0748-05 [Equipment Blank]	B292431	100	100	10/16/21

Prep Method: SM 4500-NH3 C Analytical Method: SM19-23 4500 NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J0748-01 [V-303 (MW)]	B293119	100	100	10/25/21
21J0748-02 [V-306 (MW)]	B293119	100	100	10/25/21

Prep Method: SW-846 3005A Dissolved Analytical Method: SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J0748-01 [V-303 (MW)]	B292693	10.0	10.0	10/18/21
21J0748-02 [V-306 (MW)]	B292693	10.0	10.0	10/18/21
21J0748-05 [Equipment Blank]	B292693	10.0	10.0	10/18/21

Prep Method: SW-846 3005A Dissolved Analytical Method: SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J0748-03 [V-301 (MW)]	B292695	50.0	50.0	10/18/21
21J0748-04 [V-301 (MW)-D]	B292695	50.0	50.0	10/18/21

Prep Method: SW-846 3510C Analytical Method: SW-846 8270E

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J0748-01 [V-303 (MW)]	B292712	960	1.00	10/19/21
21J0748-02 [V-306 (MW)]	B292712	995	1.00	10/19/21
21J0748-03 [V-301 (MW)]	B292712	1040	1.00	10/19/21
21J0748-04 [V-301 (MW)-D]	B292712	1010	1.00	10/19/21
21J0748-05 [Equipment Blank]	B292712	975	0.950	10/19/21
21J0748-06 [Trip Blank]	B292712	1000	1.00	10/19/21

QUALITY CONTROL
Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292712 - SW-846 3510C										
Blank (B292712-BLK1)					Prepared: 10/19/21 Analyzed: 10/26/21					
N-Nitrosodimethylamine	ND	10	µg/L							
Surrogate: 2-Fluorophenol	81.4		µg/L	200		40.7	15-110			
Surrogate: Phenol-d6	51.2		µg/L	200		25.6	15-110			
Surrogate: Nitrobenzene-d5	63.1		µg/L	100		63.1	30-130			
Surrogate: 2-Fluorobiphenyl	72.8		µg/L	100		72.8	30-130			
Surrogate: 2,4,6-Tribromophenol	188		µg/L	200		94.0	15-110			
Surrogate: p-Terphenyl-d14	85.2		µg/L	100		85.2	30-130			
LCS (B292712-BS1)					Prepared: 10/19/21 Analyzed: 10/26/21					
N-Nitrosodimethylamine	22.3	10	µg/L	50.0		44.6	40-140			
Surrogate: 2-Fluorophenol	89.8		µg/L	200		44.9	15-110			
Surrogate: Phenol-d6	58.5		µg/L	200		29.3	15-110			
Surrogate: Nitrobenzene-d5	66.0		µg/L	100		66.0	30-130			
Surrogate: 2-Fluorobiphenyl	77.2		µg/L	100		77.2	30-130			
Surrogate: 2,4,6-Tribromophenol	187		µg/L	200		93.4	15-110			
Surrogate: p-Terphenyl-d14	82.0		µg/L	100		82.0	30-130			
LCS Dup (B292712-BSD1)					Prepared: 10/19/21 Analyzed: 10/26/21					
N-Nitrosodimethylamine	18.6	10	µg/L	50.0		37.3 *	40-140	17.8	20	L-07
Surrogate: 2-Fluorophenol	74.1		µg/L	200		37.1	15-110			
Surrogate: Phenol-d6	49.5		µg/L	200		24.7	15-110			
Surrogate: Nitrobenzene-d5	54.9		µg/L	100		54.9	30-130			
Surrogate: 2-Fluorobiphenyl	67.2		µg/L	100		67.2	30-130			
Surrogate: 2,4,6-Tribromophenol	155		µg/L	200		77.7	15-110			
Surrogate: p-Terphenyl-d14	70.9		µg/L	100		70.9	30-130			

QUALITY CONTROL
Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch B292693 - SW-846 3005A Dissolved									
Blank (B292693-BLK1)				Prepared: 10/18/21 Analyzed: 10/19/21					
Arsenic	ND	0.80	µg/L						
Nickel	ND	5.0	µg/L						
LCS (B292693-BS1)				Prepared: 10/18/21 Analyzed: 10/19/21					
Arsenic	105	0.80	µg/L	100		105	80-120		
Nickel	108	5.0	µg/L	100		108	80-120		
Batch B292695 - SW-846 3005A Dissolved									
Blank (B292695-BLK1)				Prepared: 10/18/21 Analyzed: 10/19/21					
Arsenic	ND	0.80	µg/L						
Nickel	ND	5.0	µg/L						
LCS (B292695-BS1)				Prepared: 10/18/21 Analyzed: 10/19/21					
Arsenic	511	8.0	µg/L	500		102	80-120		
Nickel	516	50	µg/L	500		103	80-120		
LCS Dup (B292695-BSD1)				Prepared: 10/18/21 Analyzed: 10/19/21					
Arsenic	507	8.0	µg/L	500		101	80-120	0.760	20
Nickel	511	50	µg/L	500		102	80-120	1.03	20

QUALITY CONTROL
Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292431 - SM 4500-NH3 C										
Blank (B292431-BLK1)				Prepared & Analyzed: 10/16/21						
Ammonia as N	ND	0.30	mg/L							
LCS (B292431-BS1)				Prepared & Analyzed: 10/16/21						
Ammonia as N	4.6	0.30	mg/L	5.00		92.4	86.2-110			
LCS Dup (B292431-BSD1)				Prepared & Analyzed: 10/16/21						
Ammonia as N	4.8	0.30	mg/L	5.00		95.2	86.2-110	2.99	10	
Batch B293119 - SM 4500-NH3 C										
Blank (B293119-BLK1)				Prepared: 10/25/21 Analyzed: 10/26/21						
Ammonia as N	ND	0.30	mg/L							
LCS (B293119-BS1)				Prepared: 10/25/21 Analyzed: 10/26/21						
Ammonia as N	4.8	0.30	mg/L	5.00		95.2	86.2-110			
LCS Dup (B293119-BSD1)				Prepared: 10/25/21 Analyzed: 10/26/21						
Ammonia as N	4.8	0.30	mg/L	5.00		95.2	86.2-110	0.00	10	

FLAG/QUALIFIER SUMMARY

- * QC result is outside of established limits.
 - † Wide recovery limits established for difficult compound.
 - ‡ Wide RPD limits established for difficult compound.
 - # Data exceeded client recommended or regulatory level
 - ND Not Detected
 - RL Reporting Limit is at the level of quantitation (LOQ)
 - DL Detection Limit is the lower limit of detection determined by the MDL study
 - MCL Maximum Contaminant Level
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
- No results have been blank subtracted unless specified in the case narrative section.
- L-07 Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
 - V-04 Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria. Reported result is estimated.
 - V-05 Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
 - V-06 Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.
 - V-34 Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
SM19-23 4500 NH3 C in Water	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
SW-846 6020B in Water	
Arsenic	CT,NH,NY,NC,ME,VA
Nickel	CT,NH,NY,NC,ME,VA
SW-846 8270E in Water	
N-Nitrosodimethylamine	CT,NY,NC,ME,NH,VA
2-Fluorophenol	NC

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Vertex

Received By AL Date 10/13/11 Time 2030

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 20.5.7
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F Were samples received within holding time? T

Is COC in ink/ Legible? T Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T Who was notified? _____
Are there Lab to Filters? F Who was notified? _____
Are there Rushes? F Who was notified? _____
Are there Short Holds? F

Is there enough Volume? T MS/MSD? F
Is there Headspace where applicable? NA Is splitting samples required? F
Proper Media/Containers Used? T On COC? T
Were trip blanks received? T Acid T Base _____

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.	11	1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	10	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

November 2, 2021

William Gibbons
Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114

Project Location: Wayland, MA
Client Job Number:
Project Number: 61404
Laboratory Work Order Number: 21J0750

Enclosed are results of analyses for samples as received by the laboratory on October 13, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114
ATTN: William Gibbons

REPORT DATE: 11/2/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 61404

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J0750

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

PROJECT LOCATION: Wayland, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
V-303 (MW)	21J0750-01	Ground Water		SOP-454 PFAS	
V-306 (MW)	21J0750-02	Ground Water		SOP-454 PFAS	
V-301 (MW)	21J0750-03	Ground Water		SOP-454 PFAS	
V-301 (MW)-D	21J0750-04	Ground Water		SOP-454 PFAS	
Equipment Blank	21J0750-05	Ground Water		SOP-454 PFAS	
Trip Blank	21J0750-06	Ground Water		SOP-454 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SOP-454 PFAS

Qualifications:

R-05
Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

Perfluorotridecanoic acid (PFTrDA)
B293508-BSD1

S-29
Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

M2-8:2FTS
B292464-BS1

M2PFTA
B293508-BSD1

Z-01
Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects. Original results reported.

Analyte & Samples(s) Qualified:

M2PFTA
21J0750-01[V-303 (MW)], 21J0750-04[V-301 (MW)-D]

MPFDoA
21J0750-04[V-301 (MW)-D]

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing. I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0750

Date Received: 10/13/2021

Field Sample #: V-303 (MW)

Sampled: 10/12/2021 09:10

Sample ID: 21J0750-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	3.0	2.0	0.28	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 12:57	BLH
Perfluorohexanoic acid (PFHxA)	16	2.0	0.38	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 12:57	BLH
Perfluorodecanoic acid (PFDA)	1.3	2.0	0.49	ng/L	1	J	SOP-454 PFAS	10/15/21	10/28/21 12:57	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.43	ng/L	1		SOP-454 PFAS	10/29/21	11/1/21 18:09	BLH
N-EtFOSAA	3.6	2.0	0.62	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 12:57	BLH
N-MeFOSAA	ND	2.0	0.75	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 12:57	BLH
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 12:57	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 12:57	BLH
Perfluorohexanesulfonic acid (PFHxS)	8.2	2.0	0.34	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 12:57	BLH
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 12:57	BLH
Perfluoroheptanoic acid (PFHpA)	8.6	2.0	0.34	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 12:57	BLH
Perfluorooctanoic acid (PFOA)	28	2.0	0.68	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 12:57	BLH
Perfluorooctanesulfonic acid (PFOS)	20	2.0	0.60	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 12:57	BLH
Perfluorononanoic acid (PFNA)	4.3	2.0	0.34	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 12:57	BLH

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Project Location: Wayland, MA

Sample Description:

Work Order: 21J0750

Date Received: 10/13/2021

Field Sample #: V-306 (MW)

Sampled: 10/12/2021 11:10

Sample ID: 21J0750-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	0.55	1.8	0.26	ng/L	1	J	SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH
Perfluorohexanoic acid (PFHxA)	1.9	1.8	0.36	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH
Perfluorodecanoic acid (PFDA)	2.1	1.8	0.45	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.41	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH
N-EtFOSAA	0.78	1.8	0.58	ng/L	1	J	SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH
N-MeFOSAA	ND	1.8	0.70	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	0.26	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH
Perfluorohexanesulfonic acid (PFHxS)	1.2	1.8	0.31	ng/L	1	J	SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH
Perfluoroheptanoic acid (PFHpA)	1.3	1.8	0.32	ng/L	1	J	SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH
Perfluorooctanoic acid (PFOA)	6.8	1.8	0.63	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH
Perfluorooctanesulfonic acid (PFOS)	26	1.8	0.56	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH
Perfluorononanoic acid (PFNA)	1.0	1.8	0.32	ng/L	1	J	SOP-454 PFAS	10/15/21	10/28/21 13:04	BLH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0750

Date Received: 10/13/2021

Field Sample #: V-301 (MW)

Sampled: 10/12/2021 13:50

Sample ID: 21J0750-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	4.0	1.9	0.27	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH
Perfluorohexanoic acid (PFHxA)	13	1.9	0.37	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH
Perfluorodecanoic acid (PFDA)	0.89	1.9	0.47	ng/L	1	J	SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.43	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH
N-EtFOSAA	2.2	1.9	0.61	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH
N-MeFOSAA	ND	1.9	0.73	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH
Perfluorohexanesulfonic acid (PFHxS)	7.5	1.9	0.33	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH
Perfluoroheptanoic acid (PFHpA)	7.3	1.9	0.33	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH
Perfluorooctanoic acid (PFOA)	23	1.9	0.66	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH
Perfluorooctanesulfonic acid (PFOS)	18	1.9	0.58	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH
Perfluorononanoic acid (PFNA)	3.1	1.9	0.33	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:11	BLH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 21J0750

Date Received: 10/13/2021

Field Sample #: V-301 (MW)-D

Sampled: 10/12/2021 13:51

Sample ID: 21J0750-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	3.8	2.0	0.28	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH
Perfluorohexanoic acid (PFHxA)	13	2.0	0.38	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH
Perfluorodecanoic acid (PFDA)	0.73	2.0	0.49	ng/L	1	J	SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH
N-EtFOSAA	3.1	2.0	0.63	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH
N-MeFOSAA	ND	2.0	0.76	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH
Perfluorohexanesulfonic acid (PFHxS)	6.9	2.0	0.34	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH
Perfluoroheptanoic acid (PFHpA)	7.8	2.0	0.34	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH
Perfluorooctanoic acid (PFOA)	24	2.0	0.68	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH
Perfluorooctanesulfonic acid (PFOS)	20	2.0	0.60	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH
Perfluorononanoic acid (PFNA)	2.9	2.0	0.35	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 13:18	BLH

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Project Location: Wayland, MA

Sample Description:

Work Order: 21J0750

Date Received: 10/13/2021

Field Sample #: Equipment Blank

Sampled: 10/12/2021 14:30

Sample ID: 21J0750-05

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	0.26	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.8	0.35	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH
Perfluorodecanoic acid (PFDA)	ND	1.8	0.45	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.41	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH
N-EtFOSAA	ND	1.8	0.58	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH
N-MeFOSAA	ND	1.8	0.70	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	0.31	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH
Perfluorooctanoic acid (PFOA)	ND	1.8	0.63	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	0.55	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH
Perfluorononanoic acid (PFNA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:24	BLH

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Project Location: Wayland, MA

Sample Description:

Work Order: 21J0750

Date Received: 10/13/2021

Field Sample #: Trip Blank

Sampled: 10/12/2021 14:40

Sample ID: 21J0750-06

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH
Perfluorohexanoic acid (PFHxA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH
Perfluorodecanoic acid (PFDA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH
N-EtFOSAA	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH
N-MeFOSAA	ND	2.0	0.75	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH
Perfluoroheptanoic acid (PFHpA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH
Perfluorooctanoic acid (PFOA)	ND	2.0	0.67	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	0.59	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH
Perfluorononanoic acid (PFNA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	10/15/21	10/28/21 14:31	BLH

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Sample Extraction Data**Prep Method: SOP 454-PFAAS Analytical Method: SOP-454 PFAS**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J0750-01 [V-303 (MW)]	B292464	252	1.00	10/15/21
21J0750-02 [V-306 (MW)]	B292464	271	1.00	10/15/21
21J0750-03 [V-301 (MW)]	B292464	259	1.00	10/15/21
21J0750-04 [V-301 (MW)-D]	B292464	251	1.00	10/15/21
21J0750-05 [Equipment Blank]	B292464	272	1.00	10/15/21
21J0750-06 [Trip Blank]	B292464	253	1.00	10/15/21

Prep Method: SOP 454-PFAAS Analytical Method: SOP-454 PFAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21J0750-01RE1 [V-303 (MW)]	B293508	260	1.00	10/29/21

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QUALITY CONTROL
Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292464 - SOP 454-PFAAS										
Blank (B292464-BLK1)										
Prepared: 10/15/21 Analyzed: 10/28/21										
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
LCS (B292464-BS1)										
Prepared: 10/15/21 Analyzed: 10/28/21										
Perfluorobutanesulfonic acid (PFBS)	6.97	1.9	ng/L	8.42		82.7	72-130			
Perfluorohexanoic acid (PFHxA)	7.71	1.9	ng/L	9.52		81.0	72-129			
Perfluorodecanoic acid (PFDA)	7.81	1.9	ng/L	9.52		82.1	71-129			
Perfluorododecanoic acid (PFDoA)	7.31	1.9	ng/L	9.52		76.8	72-134			
N-EtFOSAA	9.03	1.9	ng/L	9.52		94.8	61-135			
N-MeFOSAA	10.2	1.9	ng/L	9.52		107	65-136			
Perfluorotetradecanoic acid (PFTA)	6.94	1.9	ng/L	9.52		73.0	71-132			
Perfluorotridecanoic acid (PFTrDA)	6.93	1.9	ng/L	9.52		72.8	65-144			
Perfluorohexanesulfonic acid (PFHxS)	7.18	1.9	ng/L	8.66		82.9	68-131			
Perfluoroundecanoic acid (PFUnA)	7.48	1.9	ng/L	9.52		78.5	69-133			
Perfluoroheptanoic acid (PFHpA)	7.23	1.9	ng/L	9.52		76.0	72-130			
Perfluorooctanoic acid (PFOA)	7.50	1.9	ng/L	9.52		78.8	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.16	1.9	ng/L	8.80		81.3	65-140			
Perfluorononanoic acid (PFNA)	7.38	1.9	ng/L	9.52		77.5	69-130			
LCS Dup (B292464-BSD1)										
Prepared: 10/15/21 Analyzed: 10/28/21										
Perfluorobutanesulfonic acid (PFBS)	7.20	1.9	ng/L	8.45		85.2	72-130	3.29	30	
Perfluorohexanoic acid (PFHxA)	7.87	1.9	ng/L	9.55		82.4	72-129	2.06	30	
Perfluorodecanoic acid (PFDA)	7.48	1.9	ng/L	9.55		78.4	71-129	4.35	30	
Perfluorododecanoic acid (PFDoA)	7.70	1.9	ng/L	9.55		80.6	72-134	5.14	30	
N-EtFOSAA	9.04	1.9	ng/L	9.55		94.7	61-135	0.193	30	
N-MeFOSAA	9.77	1.9	ng/L	9.55		102	65-136	4.55	30	
Perfluorotetradecanoic acid (PFTA)	7.02	1.9	ng/L	9.55		73.6	71-132	1.11	30	
Perfluorotridecanoic acid (PFTrDA)	6.39	1.9	ng/L	9.55		66.9	65-144	8.16	30	
Perfluorohexanesulfonic acid (PFHxS)	7.44	1.9	ng/L	8.69		85.6	68-131	3.49	30	
Perfluoroundecanoic acid (PFUnA)	7.74	1.9	ng/L	9.55		81.1	69-133	3.48	30	
Perfluoroheptanoic acid (PFHpA)	7.46	1.9	ng/L	9.55		78.1	72-130	3.08	30	
Perfluorooctanoic acid (PFOA)	7.97	1.9	ng/L	9.55		83.5	71-133	6.15	30	
Perfluorooctanesulfonic acid (PFOS)	7.42	1.9	ng/L	8.83		84.1	65-140	3.58	30	
Perfluorononanoic acid (PFNA)	7.73	1.9	ng/L	9.55		81.0	69-130	4.74	30	

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B293508 - SOP 454-PFAAS										
Blank (B293508-BLK1)										
Prepared: 10/29/21 Analyzed: 11/01/21										
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
N-EtFOSAA	ND	2.0	ng/L							
N-MeFOSAA	ND	2.0	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L							
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L							
LCS (B293508-BS1)										
Prepared: 10/29/21 Analyzed: 11/01/21										
Perfluorobutanesulfonic acid (PFBS)	7.28	1.9	ng/L	8.55		85.1	72-130			
Perfluorohexanoic acid (PFHxA)	8.27	1.9	ng/L	9.66		85.6	72-129			
Perfluorodecanoic acid (PFDA)	7.95	1.9	ng/L	9.66		82.3	71-129			
Perfluorododecanoic acid (PFDoA)	8.14	1.9	ng/L	9.66		84.3	72-134			
N-EtFOSAA	9.76	1.9	ng/L	9.66		101	61-135			
N-MeFOSAA	11.2	1.9	ng/L	9.66		116	65-136			
Perfluorotetradecanoic acid (PFTA)	7.20	1.9	ng/L	9.66		74.5	71-132			
Perfluorotridecanoic acid (PFTrDA)	7.69	1.9	ng/L	9.66		79.6	65-144			
Perfluorohexanesulfonic acid (PFHxS)	7.31	1.9	ng/L	8.79		83.2	68-131			
Perfluoroundecanoic acid (PFUnA)	7.73	1.9	ng/L	9.66		80.1	69-133			
Perfluoroheptanoic acid (PFHpA)	7.37	1.9	ng/L	9.66		76.4	72-130			
Perfluorooctanoic acid (PFOA)	7.75	1.9	ng/L	9.66		80.3	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.49	1.9	ng/L	8.93		83.9	65-140			
Perfluorononanoic acid (PFNA)	8.30	1.9	ng/L	9.66		86.0	69-130			
LCS Dup (B293508-BS1)										
Prepared: 10/29/21 Analyzed: 11/01/21										
Perfluorobutanesulfonic acid (PFBS)	7.68	1.9	ng/L	8.61		89.2	72-130	5.36	30	
Perfluorohexanoic acid (PFHxA)	8.71	1.9	ng/L	9.73		89.5	72-129	5.16	30	
Perfluorodecanoic acid (PFDA)	8.50	1.9	ng/L	9.73		87.3	71-129	6.69	30	
Perfluorododecanoic acid (PFDoA)	8.74	1.9	ng/L	9.73		89.8	72-134	7.05	30	
N-EtFOSAA	10.4	1.9	ng/L	9.73		107	61-135	6.07	30	
N-MeFOSAA	11.5	1.9	ng/L	9.73		118	65-136	2.56	30	
Perfluorotetradecanoic acid (PFTA)	7.38	1.9	ng/L	9.73		75.8	71-132	2.47	30	
Perfluorotridecanoic acid (PFTrDA)	12.3	1.9	ng/L	9.73		126	65-144	45.9 *	30	R-05
Perfluorohexanesulfonic acid (PFHxS)	7.96	1.9	ng/L	8.85		89.9	68-131	8.49	30	
Perfluoroundecanoic acid (PFUnA)	8.26	1.9	ng/L	9.73		84.9	69-133	6.60	30	
Perfluoroheptanoic acid (PFHpA)	8.14	1.9	ng/L	9.73		83.7	72-130	9.89	30	
Perfluorooctanoic acid (PFOA)	8.74	1.9	ng/L	9.73		89.8	71-133	11.9	30	
Perfluorooctanesulfonic acid (PFOS)	8.14	1.9	ng/L	9.00		90.4	65-140	8.29	30	
Perfluorononanoic acid (PFNA)	8.58	1.9	ng/L	9.73		88.2	69-130	3.32	30	

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
S-29	Extracted Internal Standard is outside of control limits.
Z-01	Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects. Original results reported.

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
V-303 (MW) (21J0750-01)									
			Lab File ID: 21J0750-01.d			Analyzed: 10/28/21 12:57			
M2PFTA	164927.1	4.402783	1,333,856.00	4.4028	12	50 - 150	0.0000	+/-0.50	*
M6PFDA	783458.6	3.867333	866,885.00	3.867333	90	50 - 150	0.0000	+/-0.50	
M3PFBS	150091.2	2.011067	140,103.00	2.019367	107	50 - 150	-0.0083	+/-0.50	
M7PFUnA	814246.1	4.017983	1,171,547.00	4.017983	70	50 - 150	0.0000	+/-0.50	
M5PFHxA	907976.9	2.722683	822,147.00	2.73905	110	50 - 150	-0.0164	+/-0.50	
M3PFHxS	113908.1	3.2923	106,348.00	3.2923	107	50 - 150	0.0000	+/-0.50	
M4PFHpA	875834.6	3.25995	792,703.00	3.25995	110	50 - 150	0.0000	+/-0.50	
M8PFOA	744766.4	3.52615	827,978.00	3.52615	90	50 - 150	0.0000	+/-0.50	
M8PFOS	101232.5	3.7083	124,628.00	3.7083	81	50 - 150	0.0000	+/-0.50	
M9PFNA	721585.9	3.709283	806,227.00	3.709283	90	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	160990.8	4.02545	229,719.00	4.02545	70	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	188644.2	3.945867	269,307.00	3.945883	70	50 - 150	0.0000	+/-0.50	
V-303 (MW) (21J0750-01RE1)									
			Lab File ID: 21J0750-01RE1.d			Analyzed: 11/01/21 18:09			
MPPDoA	951565.6	4.153133	1,287,625.00	4.153117	74	50 - 150	0.0000	+/-0.50	
V-306 (MW) (21J0750-02)									
			Lab File ID: 21J0750-02.d			Analyzed: 10/28/21 13:04			
M2PFTA	1501038	4.394683	1,333,856.00	4.4028	113	50 - 150	-0.0081	+/-0.50	
M6PFDA	1024129	3.86735	866,885.00	3.867333	118	50 - 150	0.0000	+/-0.50	
M3PFBS	170006	2.019367	140,103.00	2.019367	121	50 - 150	0.0000	+/-0.50	
M7PFUnA	1305191	4.017983	1,171,547.00	4.017983	111	50 - 150	0.0000	+/-0.50	
M5PFHxA	997686.4	2.73905	822,147.00	2.73905	121	50 - 150	0.0000	+/-0.50	
M3PFHxS	129840.8	3.2923	106,348.00	3.2923	122	50 - 150	0.0000	+/-0.50	
M4PFHpA	1018220	3.25995	792,703.00	3.25995	128	50 - 150	0.0000	+/-0.50	
M8PFOA	991442.1	3.52615	827,978.00	3.52615	120	50 - 150	0.0000	+/-0.50	
M8PFOS	145337.7	3.7083	124,628.00	3.7083	117	50 - 150	0.0000	+/-0.50	
M9PFNA	972620.3	3.7093	806,227.00	3.709283	121	50 - 150	0.0000	+/-0.50	
MPPDoA	1299062	4.153133	1,177,447.00	4.153133	110	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	224641.9	4.02545	229,719.00	4.02545	98	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	268028.4	3.945883	269,307.00	3.945883	100	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
V-301 (MW) (21J0750-03)			Lab File ID: 21J0750-03.d			Analyzed: 10/28/21 13:11			
M2PFTA	1292926	4.394683	1,333,856.00	4.4028	97	50 - 150	-0.0081	+/-0.50	
M6PFDA	1060046	3.86735	866,885.00	3.867333	122	50 - 150	0.0000	+/-0.50	
M3PFBS	172617.9	2.019367	140,103.00	2.019367	123	50 - 150	0.0000	+/-0.50	
M7PFUnA	1386024	4.017983	1,171,547.00	4.017983	118	50 - 150	0.0000	+/-0.50	
M5PFHxA	1036203	2.730867	822,147.00	2.73905	126	50 - 150	-0.0082	+/-0.50	
M3PFHxS	123507.2	3.2923	106,348.00	3.2923	116	50 - 150	0.0000	+/-0.50	
M4PFHpA	1043351	3.25995	792,703.00	3.25995	132	50 - 150	0.0000	+/-0.50	
M8PFOA	968243.6	3.52615	827,978.00	3.52615	117	50 - 150	0.0000	+/-0.50	
M8PFOS	145506.2	3.7083	124,628.00	3.7083	117	50 - 150	0.0000	+/-0.50	
M9PFNA	933368.8	3.7093	806,227.00	3.709283	116	50 - 150	0.0000	+/-0.50	
MPFDoA	1153324	4.153133	1,177,447.00	4.153133	98	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	238284.6	4.02545	229,719.00	4.02545	104	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	289335.7	3.945883	269,307.00	3.945883	107	50 - 150	0.0000	+/-0.50	
V-301 (MW)-D (21J0750-04)			Lab File ID: 21J0750-04.d			Analyzed: 10/28/21 13:18			
M2PFTA	57691.8	4.402783	1,333,856.00	4.4028	04	50 - 150	0.0000	+/-0.50	*
M6PFDA	801395.9	3.867333	866,885.00	3.867333	92	50 - 150	0.0000	+/-0.50	
M3PFBS	175814.4	2.019367	140,103.00	2.019367	125	50 - 150	0.0000	+/-0.50	
M7PFUnA	599297	4.017983	1,171,547.00	4.017983	51	50 - 150	0.0000	+/-0.50	
M5PFHxA	1061940	2.730867	822,147.00	2.73905	129	50 - 150	-0.0082	+/-0.50	
M3PFHxS	127213.3	3.2923	106,348.00	3.2923	120	50 - 150	0.0000	+/-0.50	
M4PFHpA	1038342	3.25995	792,703.00	3.25995	131	50 - 150	0.0000	+/-0.50	
M8PFOA	934088.8	3.52615	827,978.00	3.52615	113	50 - 150	0.0000	+/-0.50	
M8PFOS	108384	3.7083	124,628.00	3.7083	87	50 - 150	0.0000	+/-0.50	
M9PFNA	865694.6	3.709283	806,227.00	3.709283	107	50 - 150	0.0000	+/-0.50	
MPFDoA	207217.8	4.153133	1,177,447.00	4.153133	18	50 - 150	0.0000	+/-0.50	*
d5-NEtFOSAA	118276.7	4.02545	229,719.00	4.02545	51	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	175888.1	3.945867	269,307.00	3.945883	65	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Equipment Blank (21J0750-05)									
			Lab File ID: 21J0750-05.d			Analyzed: 10/28/21 14:24			
M2PFTA	1275782	4.39465	1,333,856.00	4.394667	96	50 - 150	0.0000	+/-0.50	
M6PFDA	985013.9	3.867333	866,885.00	3.867333	114	50 - 150	0.0000	+/-0.50	
M3PFBS	151383.6	2.019367	140,103.00	2.019367	108	50 - 150	0.0000	+/-0.50	
M7PFUnA	1246636	4.017967	1,171,547.00	4.017983	106	50 - 150	0.0000	+/-0.50	
M5PFHxA	892401.1	2.730867	822,147.00	2.730867	109	50 - 150	0.0000	+/-0.50	
M3PFHxS	117561.5	3.2923	106,348.00	3.2923	111	50 - 150	0.0000	+/-0.50	
M4PFHpA	886659.1	3.25995	792,703.00	3.25995	112	50 - 150	0.0000	+/-0.50	
M8PFOA	887612.8	3.526133	827,978.00	3.52615	107	50 - 150	0.0000	+/-0.50	
M8PFOS	120708.3	3.708283	124,628.00	3.7083	97	50 - 150	0.0000	+/-0.50	
M9PFNA	773649.6	3.709283	806,227.00	3.709283	96	50 - 150	0.0000	+/-0.50	
MPFDoA	1209862	4.153117	1,177,447.00	4.153133	103	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	235420	4.025434	229,719.00	4.02545	102	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	273712	3.945867	269,307.00	3.945867	102	50 - 150	0.0000	+/-0.50	
Trip Blank (21J0750-06)									
			Lab File ID: 21J0750-06.d			Analyzed: 10/28/21 14:31			
M2PFTA	1548064	4.394667	1,333,856.00	4.394667	116	50 - 150	0.0000	+/-0.50	
M6PFDA	1121087	3.867333	866,885.00	3.867333	129	50 - 150	0.0000	+/-0.50	
M3PFBS	181303.5	2.019367	140,103.00	2.019367	129	50 - 150	0.0000	+/-0.50	
M7PFUnA	1335114	4.009984	1,171,547.00	4.017983	114	50 - 150	-0.0080	+/-0.50	
M5PFHxA	1079293	2.730867	822,147.00	2.730867	131	50 - 150	0.0000	+/-0.50	
M3PFHxS	138433.7	3.2923	106,348.00	3.2923	130	50 - 150	0.0000	+/-0.50	
M4PFHpA	1052408	3.25995	792,703.00	3.25995	133	50 - 150	0.0000	+/-0.50	
M8PFOA	1074339	3.52615	827,978.00	3.52615	130	50 - 150	0.0000	+/-0.50	
M8PFOS	154639	3.7083	124,628.00	3.7083	124	50 - 150	0.0000	+/-0.50	
M9PFNA	1047873	3.7093	806,227.00	3.709283	130	50 - 150	0.0000	+/-0.50	
MPFDoA	1196102	4.153133	1,177,447.00	4.153133	102	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	231235.2	4.01745	229,719.00	4.02545	101	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	279321	3.937883	269,307.00	3.945867	104	50 - 150	-0.0080	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B292464-BLK1)			Lab File ID: B292464-BLK1.d			Analyzed: 10/28/21 12:06			
M8FOSA	406213	4.052533	362,634.00	4.052516	112	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	181002.9	2.644867	159,245.00	2.644867	114	50 - 150	0.0000	+/-0.50	
M2PFTA	1651911	4.394683	1,333,856.00	4.4028	124	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	210512.9	3.86685	172,307.00	3.86685	122	50 - 150	0.0000	+/-0.50	
MPFBA	783219.9	1.12495	602,130.00	1.12495	130	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	246194.8	2.954083	233,032.00	2.954083	106	50 - 150	0.0000	+/-0.50	
M6PFDA	1065381	3.86735	866,885.00	3.867333	123	50 - 150	0.0000	+/-0.50	
M3PFBS	174608.3	2.019367	140,103.00	2.019367	125	50 - 150	0.0000	+/-0.50	
M7PFUnA	1387102	4.018	1,171,547.00	4.017983	118	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	127727	3.517633	105,518.00	3.517617	121	50 - 150	0.0000	+/-0.50	
M5PFPeA	775168.5	1.832817	605,473.00	1.8328	128	50 - 150	0.0000	+/-0.50	
M5PFHxA	1042794	2.73905	822,147.00	2.73905	127	50 - 150	0.0000	+/-0.50	
M3PFHxS	131515.7	3.292317	106,348.00	3.2923	124	50 - 150	0.0000	+/-0.50	
M4PFHpA	1015282	3.259967	792,703.00	3.25995	128	50 - 150	0.0000	+/-0.50	
M8PFOA	977110.5	3.52615	827,978.00	3.52615	118	50 - 150	0.0000	+/-0.50	
M8PFOS	150811.9	3.7083	124,628.00	3.7083	121	50 - 150	0.0000	+/-0.50	
M9PFNA	1039147	3.7093	806,227.00	3.709283	129	50 - 150	0.0000	+/-0.50	
MPFDoA	1328486	4.15315	1,177,447.00	4.153133	113	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	270056.7	4.025466	229,719.00	4.02545	118	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	306636.2	3.945883	269,307.00	3.945883	114	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B292464-BS1)			Lab File ID: B292464-BS1.d			Analyzed: 10/28/21 11:52			
M8FOSA	434245.3	4.052533	362,634.00	4.052516	120	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	209104.9	2.6531	159,245.00	2.644867	131	50 - 150	0.0082	+/-0.50	
M2PF _T A	1869577	4.402817	1,333,856.00	4.4028	140	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	284754.3	3.866867	172,307.00	3.86685	165	50 - 150	0.0000	+/-0.50	*
MPFBA	885280.7	1.12495	602,130.00	1.12495	147	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	245180.2	2.9622	233,032.00	2.954083	105	50 - 150	0.0081	+/-0.50	
M6PFDA	1250004	3.867367	866,885.00	3.867333	144	50 - 150	0.0000	+/-0.50	
M3PFBS	198601	2.02765	140,103.00	2.019367	142	50 - 150	0.0083	+/-0.50	
M7PFU _n A	1587752	4.018	1,171,547.00	4.017983	136	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	152276.9	3.517633	105,518.00	3.517617	144	50 - 150	0.0000	+/-0.50	
M5PFPeA	883887.4	1.8411	605,473.00	1.8328	146	50 - 150	0.0083	+/-0.50	
M5PFH _x A	1213245	2.73905	822,147.00	2.73905	148	50 - 150	0.0000	+/-0.50	
M3PFH _x S	150942.2	3.292317	106,348.00	3.2923	142	50 - 150	0.0000	+/-0.50	
M4PFH _p A	1178626	3.259967	792,703.00	3.25995	149	50 - 150	0.0000	+/-0.50	
M8PFOA	1177895	3.52615	827,978.00	3.52615	142	50 - 150	0.0000	+/-0.50	
M8PFOS	173995.3	3.708317	124,628.00	3.7083	140	50 - 150	0.0000	+/-0.50	
M9PFNA	1168450	3.709317	806,227.00	3.709283	145	50 - 150	0.0000	+/-0.50	
MPFDoA	1546602	4.161217	1,177,447.00	4.153133	131	50 - 150	0.0081	+/-0.50	
d5-NEtFOSAA	304073.7	4.025466	229,719.00	4.02545	132	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	347387.3	3.9459	269,307.00	3.945883	129	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY
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Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B292464-BSD1)			Lab File ID: B292464-BSD1.d			Analyzed: 10/28/21 11:59			
M8FOSA	445472	4.052516	362,634.00	4.052516	123	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	210484.5	2.644867	159,245.00	2.644867	132	50 - 150	0.0000	+/-0.50	
M2PF _T A	1906005	4.394667	1,333,856.00	4.4028	143	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	247456.7	3.86685	172,307.00	3.86685	144	50 - 150	0.0000	+/-0.50	
MPF _B A	885156.3	1.12495	602,130.00	1.12495	147	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	256910.4	2.954083	233,032.00	2.954083	110	50 - 150	0.0000	+/-0.50	
M6PF _D A	1272841	3.867333	866,885.00	3.867333	147	50 - 150	0.0000	+/-0.50	
M3PF _B S	200256.3	2.019367	140,103.00	2.019367	143	50 - 150	0.0000	+/-0.50	
M7PF _U nA	1592839	4.017983	1,171,547.00	4.017983	136	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	148379.6	3.5176	105,518.00	3.517617	141	50 - 150	0.0000	+/-0.50	
M5PF _P eA	873793.6	1.8328	605,473.00	1.8328	144	50 - 150	0.0000	+/-0.50	
M5PF _H xA	1200108	2.73905	822,147.00	2.73905	146	50 - 150	0.0000	+/-0.50	
M3PF _H xS	149695.8	3.2923	106,348.00	3.2923	141	50 - 150	0.0000	+/-0.50	
M4PF _H pA	1177535	3.25995	792,703.00	3.25995	149	50 - 150	0.0000	+/-0.50	
M8PFOA	1152844	3.526133	827,978.00	3.52615	139	50 - 150	0.0000	+/-0.50	
M8PFOS	183466.1	3.708283	124,628.00	3.7083	147	50 - 150	0.0000	+/-0.50	
M9PF _N A	1200650	3.709283	806,227.00	3.709283	149	50 - 150	0.0000	+/-0.50	
MPF _D oA	1478008	4.153133	1,177,447.00	4.153133	126	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	305510.3	4.02545	229,719.00	4.02545	133	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	355842.6	3.945867	269,307.00	3.945883	132	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

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Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B293508-BLK1)			Lab File ID: B293508-BLK1.d			Analyzed: 11/01/21 17:47			
M8FOSA	393540	4.052533	394,416.00	4.052516	100	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	183706.1	2.636617	179,777.00	2.636633	102	50 - 150	0.0000	+/-0.50	
M2PFTA	1413892	4.394667	1,473,937.00	4.39465	96	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	206865.3	3.86685	195,335.00	3.866833	106	50 - 150	0.0000	+/-0.50	
MPFBA	814100	1.116633	675,141.00	1.116633	121	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	320093.9	2.945967	216,892.00	2.945967	148	50 - 150	0.0000	+/-0.50	
M6PFDA	1042778	3.859383	910,041.00	3.867333	115	50 - 150	-0.0080	+/-0.50	
M3PFBS	175530.7	2.011067	157,533.00	2.011067	111	50 - 150	0.0000	+/-0.50	
M7PFUnA	1368516	4.01	1,259,770.00	4.009984	109	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	118836.2	3.509633	118,091.00	3.509617	101	50 - 150	0.0000	+/-0.50	
M5PFPeA	780288.4	1.824517	695,738.00	1.824517	112	50 - 150	0.0000	+/-0.50	
M5PFHxA	1052113	2.722683	932,093.00	2.722683	113	50 - 150	0.0000	+/-0.50	
M3PFHxS	137235.8	3.284267	119,148.00	3.28425	115	50 - 150	0.0000	+/-0.50	
M4PFHpA	1042342	3.25995	892,821.00	3.251867	117	50 - 150	0.0081	+/-0.50	
M8PFOA	1072445	3.518167	879,861.00	3.51815	122	50 - 150	0.0000	+/-0.50	
M8PFOS	147889.6	3.7083	131,152.00	3.708283	113	50 - 150	0.0000	+/-0.50	
M9PFNA	1016907	3.7093	866,941.00	3.709283	117	50 - 150	0.0000	+/-0.50	
MPFDoA	1320273	4.153133	1,287,625.00	4.153117	103	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	253410.4	4.017467	247,192.00	4.01745	103	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	306868.1	3.937883	277,531.00	3.937867	111	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B293508-BS1)			Lab File ID: B293508-BS1.d			Analyzed: 11/01/21 17:33			
M8FOSA	418769	4.052516	394,416.00	4.052516	106	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	177511.3	2.636633	179,777.00	2.636633	99	50 - 150	0.0000	+/-0.50	
M2PF _T A	1642184	4.394667	1,473,937.00	4.39465	111	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	205961.1	3.86685	195,335.00	3.866833	105	50 - 150	0.0000	+/-0.50	
MPFBA	827189.2	1.116633	675,141.00	1.116633	123	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	290326.5	2.945967	216,892.00	2.945967	134	50 - 150	0.0000	+/-0.50	
M6PFDA	1118194	3.867333	910,041.00	3.867333	123	50 - 150	0.0000	+/-0.50	
M3PFBS	178099.1	2.011067	157,533.00	2.011067	113	50 - 150	0.0000	+/-0.50	
M7PFUnA	1386478	4.009984	1,259,770.00	4.009984	110	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	123636.7	3.509617	118,091.00	3.509617	105	50 - 150	0.0000	+/-0.50	
M5PFPeA	793791.7	1.824517	695,738.00	1.824517	114	50 - 150	0.0000	+/-0.50	
M5PFHxA	1066834	2.722683	932,093.00	2.722683	114	50 - 150	0.0000	+/-0.50	
M3PFHxS	135937.1	3.28425	119,148.00	3.28425	114	50 - 150	0.0000	+/-0.50	
M4PFHpA	1089052	3.25995	892,821.00	3.251867	122	50 - 150	0.0081	+/-0.50	
M8PFOA	1074399	3.51815	879,861.00	3.51815	122	50 - 150	0.0000	+/-0.50	
M8PFOS	155595.9	3.7083	131,152.00	3.708283	119	50 - 150	0.0000	+/-0.50	
M9PFNA	1011057	3.709283	866,941.00	3.709283	117	50 - 150	0.0000	+/-0.50	
MPFDoA	1407601	4.153133	1,287,625.00	4.153117	109	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	263252.9	4.01745	247,192.00	4.01745	106	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	294112.8	3.937883	277,531.00	3.937867	106	50 - 150	0.0000	+/-0.50	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B293508-BSD1)			Lab File ID: B293508-BSD1.d			Analyzed: 11/01/21 17:40			
M8FOSA	238871.4	4.052516	394,416.00	4.052516	61	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	168163.8	2.636617	179,777.00	2.636633	94	50 - 150	0.0000	+/-0.50	
M2PF _T A	633531.4	4.394667	1,473,937.00	4.39465	43	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	183921.7	3.866833	195,335.00	3.866833	94	50 - 150	0.0000	+/-0.50	
MPF _B A	781559.1	1.12495	675,141.00	1.116633	116	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	310957.9	2.954083	216,892.00	2.945967	143	50 - 150	0.0081	+/-0.50	
M6PF _D A	1011075	3.867333	910,041.00	3.867333	111	50 - 150	0.0000	+/-0.50	
M3PF _B S	167694.5	2.019367	157,533.00	2.011067	106	50 - 150	0.0083	+/-0.50	
M7PF _U nA	1240531	4.009984	1,259,770.00	4.009984	98	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	121230.1	3.509617	118,091.00	3.509617	103	50 - 150	0.0000	+/-0.50	
M5PF _P eA	751941.8	1.824517	695,738.00	1.824517	108	50 - 150	0.0000	+/-0.50	
M5PF _H xA	1023749	2.730867	932,093.00	2.722683	110	50 - 150	0.0082	+/-0.50	
M3PF _H xS	130536	3.28425	119,148.00	3.28425	110	50 - 150	0.0000	+/-0.50	
M4PF _H pA	1010477	3.25995	892,821.00	3.251867	113	50 - 150	0.0081	+/-0.50	
M8PFOA	1030234	3.51815	879,861.00	3.51815	117	50 - 150	0.0000	+/-0.50	
M8PFOS	139035.8	3.708283	131,152.00	3.708283	106	50 - 150	0.0000	+/-0.50	
M9PFNA	940601	3.709283	866,941.00	3.709283	108	50 - 150	0.0000	+/-0.50	
MPF _D oA	1043192	4.153117	1,287,625.00	4.153117	81	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	231753.8	4.01745	247,192.00	4.01745	94	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	285616.8	3.937867	277,531.00	3.937867	103	50 - 150	0.0000	+/-0.50	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-454 PFAS in Water</i>	
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

0520512



Phone: 413-525-2332
 Fax: 413-525-6405
 Access COC's and Support Requests

Company Name: **VERTEX**
 Address: **100 Washington St, Ste 302, Boston**
 Phone: **781-698-7654**
 Project Name: **River's Edge, Weyland**
 Project Location: **Weyland, MA**
 Project Number: **62404**
 Project Manager: **Bill G. Woods**
 Pace Quote Name/Number:
 Invoice Recipient: **gabibens@vercelabs.com**
 Sampled By: **E. Cox**

http://www.pacelabs.com

39 Spruce Street
 East Longmeadow, MA 01028

Doc # 381 Rev 5_07/13/2021

CHAIN OF CUSTODY RECORD

Request Turnaround Time: 7-Day 10-Day 14-Day

PFAS 10-Day (std): 10-Day 14-Day

Due Date: _____

Request Approval Required: 1-Day 3-Day 4-Day

Field Filtered: Lab to Filter:

Orthophosphate Samples: Field Filtered: Lab to Filter:

Format: PDF EXCEL

Other: **SOXHLET**

CLP Like Data Pkg Required:

Email To: **gabibens@vercelabs.com**

Fax To #:

ANALYSIS REQUESTED

ANALYSIS REQUESTED	Field Filtered	Lab to Filter	Orthophosphate Samples	Field Filtered	Lab to Filter
Dissolved As, N, 6020	X	X	X	X	X
Ammonia by 4500	X	X	X	X	X
8270 (NDMA only)	X	X	X	X	X
PFAS 537.1 (14 Analytes)	X	X	X	X	X

Preservation Code: _____

Courier Use Only: _____

Total Number Of: _____

VIALS: _____

GLASS: _____

PLASTIC: _____

BACTERIA: _____

ENCORE: _____

Glassware in the fridge? N

Glassware in freezer? Y / N N

Prepackaged Cooler? N

*Pace Analytical is not responsible for missing samples from prepacked coolers

Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Client Comments: 8270 (NDMA) samples are in DI water bottles. Ran out of labels, so some sample I.D's and times are written on the caps.
 28 PFAS: MCFOSAA, NMEFOSAA, PFBS, PFDA, PFDOA, PFHxA, PFHxO, PFHxA, PFHxO, PFNA, PFOS, PFOA, PFTA, PFTDA, DEVA.

Client Sample ID / Description	Sampling Date / Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
V-303 (MW)	10-12-21	Grab	GW		2	4			
V-304 (MW)	11:10	Grab	GW		2	4			
V-301 (MW)	13:50	Grab	GW		2	4			
V-301 (MW) - D	13:51	Grab	GW		2	4			
EQUIPMENT BLANK	14:30	Grab	GW		2	4			
TRIP BLANK	14:40	Grab	GW		1	1			

Relinquished by: (signature) **E. Cox** Date/Time: 10/12/21/11:29

Received by: (signature) **Paul Chantry** Date/Time: 10-9-21 11:28

Relinquished by: (signature) **Paul Chantry** Date/Time: 10-9-21 14:00

Received by: (signature) **Paul Chantry** Date/Time: 10-13-21 6:30

Relinquished by: (signature) **Paul Chantry** Date/Time: 10-13-21 5:30

Received by: (signature) **Paul Chantry** Date/Time: 10/13/21 7:00

Relinquished by: (signature) **Paul Chantry** Date/Time: 10/13/21 7:00

Received by: (signature) **Paul Chantry** Date/Time: 10/13/21 7:00

Project Entity: Government Federal City Municipality 21 J Brownfield WRTA MWRA School MBTA Other Chromatogram AIHA-LAP, LLC

Special Requirements: MA MCP Required MCP Certification Form Required CT RCP Required RCP Certification Form Required MA State DW Required PWSID # _____

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. Chain of Custody is a legal document that must be complete and accurate and is used to determine if analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but it not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Vertex
 Received By M Date 10/13/21 Time 2030
 How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 20.5.7
 By Blank # _____ Actual Temp - _____
 Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? F
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name F
 Project T ID's T Collection Dates/Times T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? E Who was notified? _____
 Are there Short Holds? F Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? NA MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? T On COC? T
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

April 8, 2019

Kristen Sarson
Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114

Project Location: Wayland, MA
Client Job Number:
Project Number: 46047
Laboratory Work Order Number: 19D0030

Enclosed are results of analyses for samples received by the laboratory on April 1, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Jessica Hoffman", is displayed on a light blue rectangular background. The signature is written in a cursive, flowing style.

Jessica L. Hoffman
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Vertex Engineering - Boston
 100 North Washington St. Suite 302
 Boston, MA 02114
 ATTN: Kristen Sarson

REPORT DATE: 4/8/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 46047

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19D0030

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

PROJECT LOCATION: Wayland, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
V-101 (MW)	19D0030-02	Ground Water		EPA 300.0 SM 21-22 4500 P E SM19-22 4500 NH3 C SM19-22 4500-N Org B,C-NH3 C SW-846 6020B SW-846 7470A SW-846 8082A SW-846 8260C SW-846 8270D	
V-102 (MW)	19D0030-03	Ground Water		EPA 300.0 SM 21-22 4500 P E SM19-22 4500 NH3 C SM19-22 4500-N Org B,C-NH3 C SW-846 6020B SW-846 7470A SW-846 8082A SW-846 8260C SW-846 8270D	
V-105 (MW)	19D0030-04	Ground Water		EPA 300.0 SM 21-22 4500 P E SM19-22 4500 NH3 C SM19-22 4500-N Org B,C-NH3 C SW-846 6020B SW-846 7470A SW-846 8082A SW-846 8260C SW-846 8270D	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

EPA 300.0

Qualifications:**MS-07**

Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:**Nitrate as N**

19D0030-04[V-105 (MW)], B227319-MS1

SM 21-22 4500 P E

Qualifications:**R-05**

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:**Orthophosphate as P**

B227187-BSD1

Phosphorus, Total

B227249-BSD1

W-17

Samples analyzed for Ortho phosphate were not filtered within 15 minutes of sampling.

Analyte & Samples(s) Qualified:**Orthophosphate as P**

19D0030-02[V-101 (MW)], 19D0030-03[V-102 (MW)], 19D0030-04[V-105 (MW)]

SW-846 6020B

Qualifications:**MS-19**

Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.

Analyte & Samples(s) Qualified:**Manganese**

19D0030-02[V-101 (MW)], B227365-MS1

SW-846 8260C

Qualifications:**R-05**

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:**Acetone**

19D0030-02[V-101 (MW)], 19D0030-03[V-102 (MW)], 19D0030-04[V-105 (MW)], B227205-BLK1, B227205-BS1, B227205-BSD1, S034302-CCV1

RL-07

Elevated reporting limit based on lowest point in calibration.

MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:**1,2,3-Trichlorobenzene**

19D0030-02[V-101 (MW)], 19D0030-03[V-102 (MW)], 19D0030-04[V-105 (MW)]

1,2,4-Trichlorobenzene

19D0030-02[V-101 (MW)], 19D0030-03[V-102 (MW)], 19D0030-04[V-105 (MW)]

1,2-Dibromo-3-chloropropane (DBP)

19D0030-02[V-101 (MW)], 19D0030-03[V-102 (MW)], 19D0030-04[V-105 (MW)]

Carbon Disulfide

19D0030-02[V-101 (MW)], 19D0030-03[V-102 (MW)], 19D0030-04[V-105 (MW)]

Methylene Chloride

19D0030-02[V-101 (MW)], 19D0030-03[V-102 (MW)], 19D0030-04[V-105 (MW)]

Naphthalene

19D0030-02[V-101 (MW)], 19D0030-03[V-102 (MW)], 19D0030-04[V-105 (MW)]

V-16

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:**1,4-Dioxane**

19D0030-02[V-101 (MW)], 19D0030-03[V-102 (MW)], 19D0030-04[V-105 (MW)], B227205-BLK1, B227205-BS1, B227205-BSD1, S034302-CCV1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:**Styrene**

B227205-BS1, B227205-BSD1, S034302-CCV1

SW-846 8270D**Qualifications:****V-34**

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:**4-Chloroaniline**

19D0030-02[V-101 (MW)], 19D0030-03[V-102 (MW)], 19D0030-04[V-105 (MW)], B227556-BLK1, B227556-BS1, B227556-BSD1, S034392-CCV1

Aniline

19D0030-02[V-101 (MW)], 19D0030-03[V-102 (MW)], 19D0030-04[V-105 (MW)], B227556-BLK1, B227556-BS1, B227556-BSD1, S034392-CCV1

SW-846 8260C

Laboratory control sample recoveries for required MCP Data Enhancement 8260 compounds were all within limits specified by the method except for "difficult analytes" where recovery control limits of 40-160% are used and/or unless otherwise listed in this narrative. Difficult analytes: MIBK, MEK, acetone, 1,4-dioxane, chloromethane, dichlorodifluoromethane, 2-hexanone, and bromomethane.

SW-846 8270D

Laboratory control sample recoveries for required MCP Data Enhancement 8270 compounds were all within control limits specified by the method, 40-140% for base/neutrals and 30-130% for acids except for "difficult analytes" listed below and/or otherwise listed in this narrative. Difficult analytes limits are 15 and 140%: 2,4-dinitrophenol, 4-chloroaniline, 4-nitrophenol, and phenol.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-101 (MW)

Sampled: 4/1/2019 09:15

Sample ID: 19D0030-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1	R-05	SW-846 8260C	4/3/19	4/3/19 16:06	EEH
tert-Amyl Methyl Ether (TAME)	4.5	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Bromoform	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
2-Butanone (MEK)	ND	10	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-101 (MW)

Sampled: 4/1/2019 09:15

Sample ID: 19D0030-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.60	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Methyl tert-Butyl Ether (MTBE)	8.2	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 16:06	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Naphthalene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 16:06	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,2,4-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:06	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	88.3	70-130	4/3/19 16:06
Toluene-d8	97.0	70-130	4/3/19 16:06
4-Bromofluorobenzene	98.0	70-130	4/3/19 16:06

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-101 (MW)

Sampled: 4/1/2019 09:15

Sample ID: 19D0030-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Acenaphthylene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Acetophenone	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Aniline	ND	5.5	µg/L	1	V-34	SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Anthracene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Benzo(a)anthracene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Benzo(a)pyrene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Benzo(b)fluoranthene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Benzo(g,h,i)perylene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Benzo(k)fluoranthene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Bis(2-chloroethoxy)methane	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Bis(2-chloroethyl)ether	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Bis(2-chloroisopropyl)ether	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Bis(2-Ethylhexyl)phthalate	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
4-Bromophenylphenylether	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Butylbenzylphthalate	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
4-Chloroaniline	ND	11	µg/L	1	V-34	SW-846 8270D	4/5/19	4/6/19 15:02	BGL
2-Chloronaphthalene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
2-Chlorophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Chrysene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Dibenz(a,h)anthracene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Dibenzofuran	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Di-n-butylphthalate	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
1,2-Dichlorobenzene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
1,3-Dichlorobenzene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
1,4-Dichlorobenzene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
3,3-Dichlorobenzidine	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
2,4-Dichlorophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Diethylphthalate	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
2,4-Dimethylphenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Dimethylphthalate	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
2,4-Dinitrophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
2,4-Dinitrotoluene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
2,6-Dinitrotoluene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Di-n-octylphthalate	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
1,2-Diphenylhydrazine/Azobenzene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Fluoranthene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Fluorene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Hexachlorobenzene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Hexachlorobutadiene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Hexachloroethane	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Indeno(1,2,3-cd)pyrene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Isophorone	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
2-Methylnaphthalene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-101 (MW)

Sampled: 4/1/2019 09:15

Sample ID: 19D0030-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
3/4-Methylphenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Naphthalene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Nitrobenzene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
2-Nitrophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
4-Nitrophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Pentachlorophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Phenanthrene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Phenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
Pyrene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
1,2,4-Trichlorobenzene	ND	5.5	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
2,4,5-Trichlorophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL
2,4,6-Trichlorophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:02	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual
2-Fluorophenol	43.5	15-110	
Phenol-d6	32.8	15-110	
Nitrobenzene-d5	73.3	30-130	
2-Fluorobiphenyl	76.5	30-130	
2,4,6-Tribromophenol	80.3	15-110	
p-Terphenyl-d14	88.7	30-130	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-101 (MW)

Sampled: 4/1/2019 09:15

Sample ID: 19D0030-02

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.15	µg/L	1		SW-846 8082A	4/5/19	4/6/19 17:52	JMB
Aroclor-1221 [1]	ND	0.15	µg/L	1		SW-846 8082A	4/5/19	4/6/19 17:52	JMB
Aroclor-1232 [1]	ND	0.15	µg/L	1		SW-846 8082A	4/5/19	4/6/19 17:52	JMB
Aroclor-1242 [1]	ND	0.15	µg/L	1		SW-846 8082A	4/5/19	4/6/19 17:52	JMB
Aroclor-1248 [1]	ND	0.15	µg/L	1		SW-846 8082A	4/5/19	4/6/19 17:52	JMB
Aroclor-1254 [1]	ND	0.15	µg/L	1		SW-846 8082A	4/5/19	4/6/19 17:52	JMB
Aroclor-1260 [1]	ND	0.15	µg/L	1		SW-846 8082A	4/5/19	4/6/19 17:52	JMB
Aroclor-1262 [1]	ND	0.15	µg/L	1		SW-846 8082A	4/5/19	4/6/19 17:52	JMB
Aroclor-1268 [1]	ND	0.15	µg/L	1		SW-846 8082A	4/5/19	4/6/19 17:52	JMB
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		82.2	30-150					4/6/19 17:52	
Decachlorobiphenyl [2]		84.6	30-150					4/6/19 17:52	
Tetrachloro-m-xylene [1]		73.8	30-150					4/6/19 17:52	
Tetrachloro-m-xylene [2]		78.5	30-150					4/6/19 17:52	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-101 (MW)

Sampled: 4/1/2019 09:15

Sample ID: 19D0030-02

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW
Arsenic	ND	0.40	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW
Barium	93	10	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW
Beryllium	ND	0.40	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW
Cadmium	0.52	0.50	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW
Chromium	ND	1.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW
Copper	5.1	5.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW
Lead	ND	1.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW
Manganese	4400	100	µg/L	100	MS-19	SW-846 6020B	4/3/19	4/5/19 10:53	QNW
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	4/8/19	4/8/19 14:29	EJB
Nickel	17	5.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW
Selenium	ND	5.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW
Silver	ND	0.50	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW
Thallium	ND	0.20	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW
Vanadium	ND	5.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW
Zinc	ND	10	µg/L	1		SW-846 6020B	4/3/19	4/4/19 13:39	QNW

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-101 (MW)

Sampled: 4/1/2019 09:15

Sample ID: 19D0030-02

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	0.98	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 10:53	QNW

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-101 (MW)

Sampled: 4/1/2019 09:15

Sample ID: 19D0030-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	1.5	0.30	mg/L	1		SM19-22 4500 NH3 C	4/2/19	4/3/19 10:00	EC
Chloride	260	10	mg/L	10		EPA 300.0	4/5/19	4/5/19 10:48	IS
Nitrate as N	2.7	0.10	mg/L	1		EPA 300.0	4/2/19	4/2/19 6:24	IS
Nitrite as N	0.400	0.100	mg/L	1		EPA 300.0	4/2/19	4/2/19 6:24	IS
Orthophosphate as P	ND	0.050	mg/L	1	W-17	SM 21-22 4500 P E	4/1/19	4/1/19 21:30	IS
Phosphorus, Total	ND	0.062	mg/L	1.25		SM 21-22 4500 P E	4/2/19	4/2/19 14:09	IS
Total Kjeldahl Nitrogen	2.0	1.0	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/3/19	4/4/19 9:45	EC
Total Nitrogen	5.1	0.050	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/8/19	4/8/19 7:28	LL

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-102 (MW)

Sampled: 4/1/2019 11:00

Sample ID: 19D0030-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1	R-05	SW-846 8260C	4/3/19	4/3/19 16:33	EEH
tert-Amyl Methyl Ether (TAME)	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Bromoform	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
2-Butanone (MEK)	ND	10	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-102 (MW)

Sampled: 4/1/2019 11:00

Sample ID: 19D0030-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.60	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Methyl tert-Butyl Ether (MTBE)	1.1	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 16:33	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Naphthalene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 16:33	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,2,4-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 16:33	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	87.6	70-130	4/3/19 16:33
Toluene-d8	98.1	70-130	4/3/19 16:33
4-Bromofluorobenzene	98.7	70-130	4/3/19 16:33

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-102 (MW)

Sampled: 4/1/2019 11:00

Sample ID: 19D0030-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Acenaphthylene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Acetophenone	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Aniline	ND	4.9	µg/L	1	V-34	SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Anthracene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Benzo(a)anthracene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Benzo(a)pyrene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Benzo(b)fluoranthene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Benzo(g,h,i)perylene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Benzo(k)fluoranthene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Bis(2-chloroethoxy)methane	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Bis(2-chloroethyl)ether	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Bis(2-chloroisopropyl)ether	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Bis(2-Ethylhexyl)phthalate	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
4-Bromophenylphenylether	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Butylbenzylphthalate	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
4-Chloroaniline	ND	9.8	µg/L	1	V-34	SW-846 8270D	4/5/19	4/6/19 15:28	BGL
2-Chloronaphthalene	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
2-Chlorophenol	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Chrysene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Dibenz(a,h)anthracene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Dibenzofuran	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Di-n-butylphthalate	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
1,2-Dichlorobenzene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
1,3-Dichlorobenzene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
1,4-Dichlorobenzene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
3,3-Dichlorobenzidine	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
2,4-Dichlorophenol	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Diethylphthalate	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
2,4-Dimethylphenol	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Dimethylphthalate	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
2,4-Dinitrophenol	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
2,4-Dinitrotoluene	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
2,6-Dinitrotoluene	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Di-n-octylphthalate	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
1,2-Diphenylhydrazine/Azobenzene	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Fluoranthene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Fluorene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Hexachlorobenzene	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Hexachlorobutadiene	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Hexachloroethane	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Indeno(1,2,3-cd)pyrene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Isophorone	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
2-Methylnaphthalene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-102 (MW)

Sampled: 4/1/2019 11:00

Sample ID: 19D0030-03

Sample Matrix: Ground Water

Semivolatle Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
3/4-Methylphenol	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Naphthalene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Nitrobenzene	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
2-Nitrophenol	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
4-Nitrophenol	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Pentachlorophenol	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Phenanthrene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Phenol	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Pyrene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
1,2,4-Trichlorobenzene	ND	4.9	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
2,4,5-Trichlorophenol	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
2,4,6-Trichlorophenol	ND	9.8	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:28	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorophenol		45.3	15-110					4/6/19 15:28	
Phenol-d6		33.7	15-110					4/6/19 15:28	
Nitrobenzene-d5		81.0	30-130					4/6/19 15:28	
2-Fluorobiphenyl		83.7	30-130					4/6/19 15:28	
2,4,6-Tribromophenol		91.8	15-110					4/6/19 15:28	
p-Terphenyl-d14		97.0	30-130					4/6/19 15:28	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-102 (MW)

Sampled: 4/1/2019 11:00

Sample ID: 19D0030-03

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:10	JMB
Aroclor-1221 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:10	JMB
Aroclor-1232 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:10	JMB
Aroclor-1242 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:10	JMB
Aroclor-1248 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:10	JMB
Aroclor-1254 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:10	JMB
Aroclor-1260 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:10	JMB
Aroclor-1262 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:10	JMB
Aroclor-1268 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:10	JMB
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]	76.1		30-150				4/6/19 18:10		
Decachlorobiphenyl [2]	78.5		30-150				4/6/19 18:10		
Tetrachloro-m-xylene [1]	77.1		30-150				4/6/19 18:10		
Tetrachloro-m-xylene [2]	81.2		30-150				4/6/19 18:10		

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-102 (MW)

Sampled: 4/1/2019 11:00

Sample ID: 19D0030-03

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:22	QNW
Arsenic	22	0.40	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:22	QNW
Barium	210	50	µg/L	5		SW-846 6020B	4/3/19	4/5/19 11:07	QNW
Beryllium	ND	0.40	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:22	QNW
Cadmium	ND	0.50	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:22	QNW
Chromium	ND	1.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:22	QNW
Copper	ND	5.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:22	QNW
Lead	ND	1.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:22	QNW
Manganese	7000	100	µg/L	100		SW-846 6020B	4/3/19	4/5/19 11:00	QNW
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	4/8/19	4/8/19 14:30	EJB
Nickel	9.0	5.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:22	QNW
Selenium	ND	5.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:22	QNW
Silver	ND	0.50	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:22	QNW
Thallium	ND	0.20	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:22	QNW
Vanadium	ND	5.0	µg/L	1		SW-846 6020B	4/3/19	4/5/19 12:12	QNW
Zinc	ND	10	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:22	QNW

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-102 (MW)

Sampled: 4/1/2019 11:00

Sample ID: 19D0030-03

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	26	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 10:56	QNW

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-102 (MW)

Sampled: 4/1/2019 11:00

Sample ID: 19D0030-03

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	1.5	0.30	mg/L	1		SM19-22 4500 NH3 C	4/2/19	4/3/19 10:00	EC
Chloride	95	10	mg/L	10		EPA 300.0	4/5/19	4/5/19 11:03	IS
Nitrate as N	4.7	0.10	mg/L	1		EPA 300.0	4/2/19	4/2/19 6:38	IS
Nitrite as N	0.254	0.100	mg/L	1		EPA 300.0	4/2/19	4/2/19 6:38	IS
Orthophosphate as P	ND	0.050	mg/L	1	W-17	SM 21-22 4500 P E	4/1/19	4/1/19 21:30	IS
Phosphorus, Total	ND	0.062	mg/L	1.25		SM 21-22 4500 P E	4/2/19	4/2/19 14:09	IS
Total Kjeldahl Nitrogen	2.0	1.0	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/3/19	4/4/19 9:45	EC
Total Nitrogen	7.0	0.050	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/8/19	4/8/19 7:28	LL

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-105 (MW)

Sampled: 4/1/2019 15:00

Sample ID: 19D0030-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1	R-05	SW-846 8260C	4/3/19	4/3/19 17:00	EEH
tert-Amyl Methyl Ether (TAME)	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Bromoform	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
2-Butanone (MEK)	ND	10	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-105 (MW)

Sampled: 4/1/2019 15:00

Sample ID: 19D0030-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.60	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Methyl tert-Butyl Ether (MTBE)	1.6	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 17:00	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Naphthalene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 17:00	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,2,4-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 17:00	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	85.9	70-130	4/3/19 17:00
Toluene-d8	97.8	70-130	4/3/19 17:00
4-Bromofluorobenzene	97.0	70-130	4/3/19 17:00

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-105 (MW)

Sampled: 4/1/2019 15:00

Sample ID: 19D0030-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Acenaphthylene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Acetophenone	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Aniline	ND	5.7	µg/L	1	V-34	SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Anthracene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Benzo(a)anthracene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Benzo(a)pyrene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Benzo(b)fluoranthene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Benzo(g,h,i)perylene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Benzo(k)fluoranthene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Bis(2-chloroethoxy)methane	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Bis(2-chloroethyl)ether	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Bis(2-chloroisopropyl)ether	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Bis(2-Ethylhexyl)phthalate	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
4-Bromophenylphenylether	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Butylbenzylphthalate	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
4-Chloroaniline	ND	11	µg/L	1	V-34	SW-846 8270D	4/5/19	4/6/19 15:54	BGL
2-Chloronaphthalene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
2-Chlorophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Chrysene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Dibenz(a,h)anthracene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Dibenzofuran	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Di-n-butylphthalate	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
1,2-Dichlorobenzene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
1,3-Dichlorobenzene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
1,4-Dichlorobenzene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
3,3-Dichlorobenzidine	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
2,4-Dichlorophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Diethylphthalate	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
2,4-Dimethylphenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Dimethylphthalate	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
2,4-Dinitrophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
2,4-Dinitrotoluene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
2,6-Dinitrotoluene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Di-n-octylphthalate	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
1,2-Diphenylhydrazine/Azobenzene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Fluoranthene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Fluorene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Hexachlorobenzene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Hexachlorobutadiene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Hexachloroethane	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Indeno(1,2,3-cd)pyrene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Isophorone	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
2-Methylnaphthalene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-105 (MW)

Sampled: 4/1/2019 15:00

Sample ID: 19D0030-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
3/4-Methylphenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Naphthalene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Nitrobenzene	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
2-Nitrophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
4-Nitrophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Pentachlorophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Phenanthrene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Phenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Pyrene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
1,2,4-Trichlorobenzene	ND	5.7	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
2,4,5-Trichlorophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
2,4,6-Trichlorophenol	ND	11	µg/L	1		SW-846 8270D	4/5/19	4/6/19 15:54	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorophenol		45.8	15-110					4/6/19 15:54	
Phenol-d6		33.9	15-110					4/6/19 15:54	
Nitrobenzene-d5		74.9	30-130					4/6/19 15:54	
2-Fluorobiphenyl		76.8	30-130					4/6/19 15:54	
2,4,6-Tribromophenol		85.8	15-110					4/6/19 15:54	
p-Terphenyl-d14		87.2	30-130					4/6/19 15:54	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-105 (MW)

Sampled: 4/1/2019 15:00

Sample ID: 19D0030-04

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:27	JMB
Aroclor-1221 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:27	JMB
Aroclor-1232 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:27	JMB
Aroclor-1242 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:27	JMB
Aroclor-1248 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:27	JMB
Aroclor-1254 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:27	JMB
Aroclor-1260 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:27	JMB
Aroclor-1262 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:27	JMB
Aroclor-1268 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/6/19 18:27	JMB
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		85.8	30-150					4/6/19 18:27	
Decachlorobiphenyl [2]		87.7	30-150					4/6/19 18:27	
Tetrachloro-m-xylene [1]		76.5	30-150					4/6/19 18:27	
Tetrachloro-m-xylene [2]		80.8	30-150					4/6/19 18:27	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-105 (MW)

Sampled: 4/1/2019 15:00

Sample ID: 19D0030-04

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:25	QNW
Arsenic	ND	0.40	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:25	QNW
Barium	150	50	µg/L	5		SW-846 6020B	4/3/19	4/5/19 11:10	QNW
Beryllium	ND	0.40	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:25	QNW
Cadmium	ND	0.50	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:25	QNW
Chromium	ND	1.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:25	QNW
Copper	ND	5.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:25	QNW
Lead	ND	1.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:25	QNW
Manganese	870	20	µg/L	20		SW-846 6020B	4/3/19	4/4/19 15:11	QNW
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	4/8/19	4/8/19 14:32	EJB
Nickel	44	5.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:25	QNW
Selenium	ND	5.0	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:25	QNW
Silver	ND	0.50	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:25	QNW
Thallium	ND	0.20	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:25	QNW
Vanadium	ND	5.0	µg/L	1		SW-846 6020B	4/3/19	4/5/19 12:16	QNW
Zinc	ND	10	µg/L	1		SW-846 6020B	4/3/19	4/4/19 15:25	QNW

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-105 (MW)

Sampled: 4/1/2019 15:00

Sample ID: 19D0030-04

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	1.1	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 11:00	QNW

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0030

Date Received: 4/1/2019

Field Sample #: V-105 (MW)

Sampled: 4/1/2019 15:00

Sample ID: 19D0030-04

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	1.1	0.30	mg/L	1		SM19-22 4500 NH3 C	4/2/19	4/3/19 10:00	EC
Chloride	140	10	mg/L	10		EPA 300.0	4/5/19	4/5/19 11:18	IS
Nitrate as N	7.8	0.20	mg/L	2	MS-07	EPA 300.0	4/2/19	4/2/19 15:14	MMH
Nitrite as N	0.810	0.100	mg/L	1		EPA 300.0	4/2/19	4/2/19 14:29	MMH
Orthophosphate as P	ND	0.050	mg/L	1	W-17	SM 21-22 4500 P E	4/1/19	4/1/19 21:30	IS
Phosphorus, Total	ND	0.062	mg/L	1.25		SM 21-22 4500 P E	4/2/19	4/2/19 14:09	IS
Total Kjeldahl Nitrogen	2.0	1.0	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/3/19	4/4/19 9:45	EC
Total Nitrogen	11	0.050	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/8/19	4/8/19 7:28	LL

Sample Extraction Data

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-02 [V-101 (MW)]	B227184	10.0	10.0	04/02/19
19D0030-03 [V-102 (MW)]	B227184	10.0	10.0	04/02/19

EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-04 [V-105 (MW)]	B227319	10.0	10.0	04/02/19

EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-04 [V-105 (MW)]	B227332	10.0	10.0	04/02/19

EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-02 [V-101 (MW)]	B227352	10.0	10.0	04/05/19
19D0030-03 [V-102 (MW)]	B227352	10.0	10.0	04/05/19
19D0030-04 [V-105 (MW)]	B227352	10.0	10.0	04/05/19

SM 21-22 4500 P E

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-02 [V-101 (MW)]	B227187	50.0	50.0	04/01/19
19D0030-03 [V-102 (MW)]	B227187	50.0	50.0	04/01/19
19D0030-04 [V-105 (MW)]	B227187	50.0	50.0	04/01/19

SM 21-22 4500 P E

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-02 [V-101 (MW)]	B227249	50.0	50.0	04/02/19
19D0030-03 [V-102 (MW)]	B227249	50.0	50.0	04/02/19
19D0030-04 [V-105 (MW)]	B227249	50.0	50.0	04/02/19

SM19-22 4500 NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-02 [V-101 (MW)]	B227200	100	100	04/02/19
19D0030-03 [V-102 (MW)]	B227200	100	100	04/02/19
19D0030-04 [V-105 (MW)]	B227200	100	100	04/02/19

SM19-22 4500-N Org B,C-NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-02 [V-101 (MW)]	B227312	25.0	25.0	04/03/19
19D0030-03 [V-102 (MW)]	B227312	25.0	25.0	04/03/19

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Sample Extraction Data

SM19-22 4500-N Org B,C-NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-04 [V-105 (MW)]	B227312	25.0	25.0	04/03/19

SM19-22 4500-N Org B,C-NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-02 [V-101 (MW)]	B227642	50.0	50.0	04/08/19
19D0030-03 [V-102 (MW)]	B227642	50.0	50.0	04/08/19
19D0030-04 [V-105 (MW)]	B227642	50.0	50.0	04/08/19

Prep Method: SW-846 3005A-SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-02 [V-101 (MW)]	B227365	50.0	50.0	04/03/19
19D0030-03 [V-102 (MW)]	B227365	50.0	50.0	04/03/19
19D0030-04 [V-105 (MW)]	B227365	50.0	50.0	04/03/19

Prep Method: SW-846 3005A Dissolved-SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-02 [V-101 (MW)]	B227576	10.0	10.0	04/05/19
19D0030-03 [V-102 (MW)]	B227576	10.0	10.0	04/05/19
19D0030-04 [V-105 (MW)]	B227576	10.0	10.0	04/05/19

Prep Method: SW-846 7470A Prep-SW-846 7470A

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-02 [V-101 (MW)]	B227561	6.00	6.00	04/08/19
19D0030-03 [V-102 (MW)]	B227561	6.00	6.00	04/08/19
19D0030-04 [V-105 (MW)]	B227561	6.00	6.00	04/08/19

Prep Method: SW-846 3510C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-02 [V-101 (MW)]	B227544	130	2.00	04/05/19
19D0030-03 [V-102 (MW)]	B227544	120	2.00	04/05/19
19D0030-04 [V-105 (MW)]	B227544	120	2.00	04/05/19

Prep Method: SW-846 5030B-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-02 [V-101 (MW)]	B227205	5	5.00	04/03/19
19D0030-03 [V-102 (MW)]	B227205	5	5.00	04/03/19
19D0030-04 [V-105 (MW)]	B227205	5	5.00	04/03/19

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Sample Extraction Data

Prep Method: SW-846 3510C-SW-846 8270D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0030-02 [V-101 (MW)]	B227556	910	1.00	04/05/19
19D0030-03 [V-102 (MW)]	B227556	1020	1.00	04/05/19
19D0030-04 [V-105 (MW)]	B227556	870	1.00	04/05/19

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227205 - SW-846 5030B

Blank (B227205-BLK1)

Prepared: 04/02/19 Analyzed: 04/03/19

Acetone	ND	10	µg/L							R-05
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
Bromobenzene	ND	1.0	µg/L							
Bromochloromethane	ND	1.0	µg/L							
Bromodichloromethane	ND	1.0	µg/L							
Bromoform	ND	1.0	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	10	µg/L							
n-Butylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	1.0	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	1.0	µg/L							
Chlorobenzene	ND	1.0	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	2.0	µg/L							
Chloroform	ND	2.0	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	1.0	µg/L							
4-Chlorotoluene	ND	1.0	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	1.0	µg/L							
1,4-Dichlorobenzene	ND	1.0	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L							
1,1-Dichloroethane	ND	1.0	µg/L							
1,2-Dichloroethane	ND	1.0	µg/L							
1,1-Dichloroethylene	ND	1.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
trans-1,2-Dichloroethylene	ND	1.0	µg/L							
1,2-Dichloropropane	ND	1.0	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	1.0	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.40	µg/L							
trans-1,3-Dichloropropene	ND	0.40	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	50	µg/L							V-16
Ethylbenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	0.60	µg/L							
2-Hexanone (MBK)	ND	10	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							
Methylene Chloride	ND	5.0	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L							
Naphthalene	ND	2.0	µg/L							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227205 - SW-846 5030B

Blank (B227205-BLK1)

Prepared: 04/02/19 Analyzed: 04/03/19

n-Propylbenzene	ND	1.0	µg/L							
Styrene	ND	1.0	µg/L							
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L							
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L							
Tetrachloroethylene	ND	1.0	µg/L							
Tetrahydrofuran	ND	2.0	µg/L							
Toluene	ND	1.0	µg/L							
1,2,3-Trichlorobenzene	ND	2.0	µg/L							
1,2,4-Trichlorobenzene	ND	1.0	µg/L							
1,1,1-Trichloroethane	ND	1.0	µg/L							
1,1,2-Trichloroethane	ND	1.0	µg/L							
Trichloroethylene	ND	1.0	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L							
1,2,3-Trichloropropane	ND	2.0	µg/L							
1,2,4-Trimethylbenzene	ND	1.0	µg/L							
1,3,5-Trimethylbenzene	ND	1.0	µg/L							
Vinyl Chloride	ND	2.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	1.0	µg/L							
Surrogate: 1,2-Dichloroethane-d4	22.0		µg/L	25.0		87.8	70-130			
Surrogate: Toluene-d8	24.6		µg/L	25.0		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	24.6		µg/L	25.0		98.4	70-130			

LCS (B227205-BS1)

Prepared: 04/02/19 Analyzed: 04/03/19

Acetone	148	10	µg/L	100		148	40-160			L-14, R-05 †
tert-Amyl Methyl Ether (TAME)	9.79	0.50	µg/L	10.0		97.9	70-130			
Benzene	9.61	1.0	µg/L	10.0		96.1	70-130			
Bromobenzene	11.9	1.0	µg/L	10.0		119	70-130			
Bromochloromethane	10.1	1.0	µg/L	10.0		101	70-130			
Bromodichloromethane	10.4	1.0	µg/L	10.0		104	70-130			
Bromoform	12.3	1.0	µg/L	10.0		123	70-130			
Bromomethane	7.28	2.0	µg/L	10.0		72.8	40-160			†
2-Butanone (MEK)	92.0	10	µg/L	100		92.0	40-160			†
n-Butylbenzene	11.0	1.0	µg/L	10.0		110	70-130			
sec-Butylbenzene	11.2	1.0	µg/L	10.0		112	70-130			
tert-Butylbenzene	11.0	1.0	µg/L	10.0		110	70-130			
tert-Butyl Ethyl Ether (TBEE)	10.1	0.50	µg/L	10.0		101	70-130			
Carbon Disulfide	12.1	5.0	µg/L	10.0		121	70-130			
Carbon Tetrachloride	9.40	1.0	µg/L	10.0		94.0	70-130			
Chlorobenzene	12.4	1.0	µg/L	10.0		124	70-130			
Chlorodibromomethane	11.6	0.50	µg/L	10.0		116	70-130			
Chloroethane	11.2	2.0	µg/L	10.0		112	70-130			
Chloroform	9.49	2.0	µg/L	10.0		94.9	70-130			
Chloromethane	7.67	2.0	µg/L	10.0		76.7	40-160			†
2-Chlorotoluene	11.4	1.0	µg/L	10.0		114	70-130			
4-Chlorotoluene	12.2	1.0	µg/L	10.0		122	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	8.73	2.0	µg/L	10.0		87.3	70-130			
1,2-Dibromoethane (EDB)	11.1	0.50	µg/L	10.0		111	70-130			
Dibromomethane	11.0	1.0	µg/L	10.0		110	70-130			
1,2-Dichlorobenzene	12.1	1.0	µg/L	10.0		121	70-130			
1,3-Dichlorobenzene	12.2	1.0	µg/L	10.0		122	70-130			
1,4-Dichlorobenzene	11.9	1.0	µg/L	10.0		119	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227205 - SW-846 5030B										
LCS (B227205-BS1)										
					Prepared: 04/02/19 Analyzed: 04/03/19					
Dichlorodifluoromethane (Freon 12)	7.25	2.0	µg/L	10.0		72.5	40-160			†
1,1-Dichloroethane	9.74	1.0	µg/L	10.0		97.4	70-130			
1,2-Dichloroethane	8.80	1.0	µg/L	10.0		88.0	70-130			
1,1-Dichloroethylene	10.8	1.0	µg/L	10.0		108	70-130			
cis-1,2-Dichloroethylene	9.70	1.0	µg/L	10.0		97.0	70-130			
trans-1,2-Dichloroethylene	10.0	1.0	µg/L	10.0		100	70-130			
1,2-Dichloropropane	9.97	1.0	µg/L	10.0		99.7	70-130			
1,3-Dichloropropane	10.6	0.50	µg/L	10.0		106	70-130			
2,2-Dichloropropane	9.60	1.0	µg/L	10.0		96.0	70-130			
1,1-Dichloropropene	8.97	0.50	µg/L	10.0		89.7	70-130			
cis-1,3-Dichloropropene	11.5	0.40	µg/L	10.0		115	70-130			
trans-1,3-Dichloropropene	11.7	0.40	µg/L	10.0		117	70-130			
Diethyl Ether	13.0	2.0	µg/L	10.0		130	70-130			
Diisopropyl Ether (DIPE)	10.0	0.50	µg/L	10.0		100	70-130			
1,4-Dioxane	92.3	50	µg/L	100		92.3	40-160			V-16 †
Ethylbenzene	11.5	1.0	µg/L	10.0		115	70-130			
Hexachlorobutadiene	12.6	0.60	µg/L	10.0		126	70-130			
2-Hexanone (MBK)	104	10	µg/L	100		104	40-160			†
Isopropylbenzene (Cumene)	11.8	1.0	µg/L	10.0		118	70-130			
p-Isopropyltoluene (p-Cymene)	11.4	1.0	µg/L	10.0		114	70-130			
Methyl tert-Butyl Ether (MTBE)	10.8	1.0	µg/L	10.0		108	70-130			
Methylene Chloride	11.5	5.0	µg/L	10.0		115	70-130			
4-Methyl-2-pentanone (MIBK)	101	10	µg/L	100		101	40-160			†
Naphthalene	9.77	2.0	µg/L	10.0		97.7	70-130			
n-Propylbenzene	11.6	1.0	µg/L	10.0		116	70-130			
Styrene	12.9	1.0	µg/L	10.0		129	70-130			V-20
1,1,1,2-Tetrachloroethane	12.6	1.0	µg/L	10.0		126	70-130			
1,1,1,2,2-Tetrachloroethane	13.0	0.50	µg/L	10.0		130	70-130			
Tetrachloroethylene	10.9	1.0	µg/L	10.0		109	70-130			
Tetrahydrofuran	10.7	2.0	µg/L	10.0		107	70-130			
Toluene	10.4	1.0	µg/L	10.0		104	70-130			
1,2,3-Trichlorobenzene	10.9	2.0	µg/L	10.0		109	70-130			
1,2,4-Trichlorobenzene	10.4	1.0	µg/L	10.0		104	70-130			
1,1,1-Trichloroethane	9.10	1.0	µg/L	10.0		91.0	70-130			
1,1,2-Trichloroethane	11.4	1.0	µg/L	10.0		114	70-130			
Trichloroethylene	10.4	1.0	µg/L	10.0		104	70-130			
Trichlorofluoromethane (Freon 11)	9.44	2.0	µg/L	10.0		94.4	70-130			
1,2,3-Trichloropropane	11.5	2.0	µg/L	10.0		115	70-130			
1,2,4-Trimethylbenzene	11.3	1.0	µg/L	10.0		113	70-130			
1,3,5-Trimethylbenzene	11.8	1.0	µg/L	10.0		118	70-130			
Vinyl Chloride	11.7	2.0	µg/L	10.0		117	70-130			
m+p Xylene	23.4	2.0	µg/L	20.0		117	70-130			
o-Xylene	12.2	1.0	µg/L	10.0		122	70-130			
Surrogate: 1,2-Dichloroethane-d4	21.9		µg/L	25.0		87.6	70-130			
Surrogate: Toluene-d8	24.4		µg/L	25.0		97.7	70-130			
Surrogate: 4-Bromofluorobenzene	26.1		µg/L	25.0		104	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227205 - SW-846 5030B

LCS Dup (B227205-BSD1)

Prepared: 04/02/19 Analyzed: 04/03/19

Acetone	109	10	µg/L	100		109	40-160	29.9 *	20	R-05 †
tert-Amyl Methyl Ether (TAME)	9.12	0.50	µg/L	10.0		91.2	70-130	7.09	20	
Benzene	9.57	1.0	µg/L	10.0		95.7	70-130	0.417	20	
Bromobenzene	11.4	1.0	µg/L	10.0		114	70-130	3.86	20	
Bromochloromethane	10.0	1.0	µg/L	10.0		100	70-130	0.199	20	
Bromodichloromethane	10.4	1.0	µg/L	10.0		104	70-130	0.577	20	
Bromoform	12.0	1.0	µg/L	10.0		120	70-130	2.47	20	
Bromomethane	7.86	2.0	µg/L	10.0		78.6	40-160	7.66	20	†
2-Butanone (MEK)	81.2	10	µg/L	100		81.2	40-160	12.5	20	†
n-Butylbenzene	10.9	1.0	µg/L	10.0		109	70-130	0.912	20	
sec-Butylbenzene	11.4	1.0	µg/L	10.0		114	70-130	1.06	20	
tert-Butylbenzene	11.1	1.0	µg/L	10.0		111	70-130	0.725	20	
tert-Butyl Ethyl Ether (TBEE)	9.46	0.50	µg/L	10.0		94.6	70-130	6.35	20	
Carbon Disulfide	11.9	5.0	µg/L	10.0		119	70-130	1.67	20	
Carbon Tetrachloride	9.35	1.0	µg/L	10.0		93.5	70-130	0.533	20	
Chlorobenzene	12.2	1.0	µg/L	10.0		122	70-130	1.30	20	
Chlorodibromomethane	11.4	0.50	µg/L	10.0		114	70-130	1.91	20	
Chloroethane	10.6	2.0	µg/L	10.0		106	70-130	5.71	20	
Chloroform	9.51	2.0	µg/L	10.0		95.1	70-130	0.211	20	
Chloromethane	7.64	2.0	µg/L	10.0		76.4	40-160	0.392	20	†
2-Chlorotoluene	11.1	1.0	µg/L	10.0		111	70-130	1.87	20	
4-Chlorotoluene	11.9	1.0	µg/L	10.0		119	70-130	2.99	20	
1,2-Dibromo-3-chloropropane (DBCP)	8.02	2.0	µg/L	10.0		80.2	70-130	8.48	20	
1,2-Dibromoethane (EDB)	10.9	0.50	µg/L	10.0		109	70-130	1.91	20	
Dibromomethane	10.8	1.0	µg/L	10.0		108	70-130	1.66	20	
1,2-Dichlorobenzene	12.0	1.0	µg/L	10.0		120	70-130	0.747	20	
1,3-Dichlorobenzene	11.9	1.0	µg/L	10.0		119	70-130	2.57	20	
1,4-Dichlorobenzene	11.7	1.0	µg/L	10.0		117	70-130	1.70	20	
Dichlorodifluoromethane (Freon 12)	7.42	2.0	µg/L	10.0		74.2	40-160	2.32	20	†
1,1-Dichloroethane	9.62	1.0	µg/L	10.0		96.2	70-130	1.24	20	
1,2-Dichloroethane	8.60	1.0	µg/L	10.0		86.0	70-130	2.30	20	
1,1-Dichloroethylene	10.8	1.0	µg/L	10.0		108	70-130	0.834	20	
cis-1,2-Dichloroethylene	9.74	1.0	µg/L	10.0		97.4	70-130	0.412	20	
trans-1,2-Dichloroethylene	9.98	1.0	µg/L	10.0		99.8	70-130	0.400	20	
1,2-Dichloropropane	9.47	1.0	µg/L	10.0		94.7	70-130	5.14	20	
1,3-Dichloropropane	10.4	0.50	µg/L	10.0		104	70-130	1.14	20	
2,2-Dichloropropane	9.59	1.0	µg/L	10.0		95.9	70-130	0.104	20	
1,1-Dichloropropene	8.94	0.50	µg/L	10.0		89.4	70-130	0.335	20	
cis-1,3-Dichloropropene	11.2	0.40	µg/L	10.0		112	70-130	1.94	20	
trans-1,3-Dichloropropene	11.8	0.40	µg/L	10.0		118	70-130	0.594	20	
Diethyl Ether	12.7	2.0	µg/L	10.0		127	70-130	2.10	20	
Diisopropyl Ether (DIPE)	9.65	0.50	µg/L	10.0		96.5	70-130	3.66	20	
1,4-Dioxane	95.5	50	µg/L	100		95.5	40-160	3.47	20	V-16 †
Ethylbenzene	11.2	1.0	µg/L	10.0		112	70-130	2.46	20	
Hexachlorobutadiene	12.4	0.60	µg/L	10.0		124	70-130	1.28	20	
2-Hexanone (MBK)	93.6	10	µg/L	100		93.6	40-160	10.4	20	†
Isopropylbenzene (Cumene)	11.6	1.0	µg/L	10.0		116	70-130	1.28	20	
p-Isopropyltoluene (p-Cymene)	11.2	1.0	µg/L	10.0		112	70-130	1.68	20	
Methyl tert-Butyl Ether (MTBE)	10.3	1.0	µg/L	10.0		103	70-130	5.12	20	
Methylene Chloride	11.5	5.0	µg/L	10.0		115	70-130	0.174	20	
4-Methyl-2-pentanone (MIBK)	94.2	10	µg/L	100		94.2	40-160	6.57	20	†
Naphthalene	9.14	2.0	µg/L	10.0		91.4	70-130	6.66	20	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227205 - SW-846 5030B										
LCS Dup (B227205-BSD1)										
					Prepared: 04/02/19 Analyzed: 04/03/19					
n-Propylbenzene	11.4	1.0	µg/L	10.0		114	70-130	1.92	20	
Styrene	12.9	1.0	µg/L	10.0		129	70-130	0.0775	20	V-20
1,1,1,2-Tetrachloroethane	12.3	1.0	µg/L	10.0		123	70-130	2.97	20	
1,1,2,2-Tetrachloroethane	12.1	0.50	µg/L	10.0		121	70-130	7.73	20	
Tetrachloroethylene	10.7	1.0	µg/L	10.0		107	70-130	1.75	20	
Tetrahydrofuran	9.26	2.0	µg/L	10.0		92.6	70-130	14.3	20	
Toluene	10.3	1.0	µg/L	10.0		103	70-130	0.677	20	
1,2,3-Trichlorobenzene	10.5	2.0	µg/L	10.0		105	70-130	3.82	20	
1,2,4-Trichlorobenzene	9.88	1.0	µg/L	10.0		98.8	70-130	5.51	20	
1,1,1-Trichloroethane	9.00	1.0	µg/L	10.0		90.0	70-130	1.10	20	
1,1,2-Trichloroethane	11.4	1.0	µg/L	10.0		114	70-130	0.00	20	
Trichloroethylene	9.95	1.0	µg/L	10.0		99.5	70-130	4.04	20	
Trichlorofluoromethane (Freon 11)	9.27	2.0	µg/L	10.0		92.7	70-130	1.82	20	
1,2,3-Trichloropropane	11.1	2.0	µg/L	10.0		111	70-130	4.07	20	
1,2,4-Trimethylbenzene	11.1	1.0	µg/L	10.0		111	70-130	1.79	20	
1,3,5-Trimethylbenzene	11.4	1.0	µg/L	10.0		114	70-130	3.18	20	
Vinyl Chloride	12.5	2.0	µg/L	10.0		125	70-130	6.70	20	
m+p Xylene	22.9	2.0	µg/L	20.0		114	70-130	2.20	20	
o-Xylene	12.0	1.0	µg/L	10.0		120	70-130	1.82	20	
Surrogate: 1,2-Dichloroethane-d4	22.2		µg/L	25.0		89.0	70-130			
Surrogate: Toluene-d8	24.8		µg/L	25.0		99.4	70-130			
Surrogate: 4-Bromofluorobenzene	25.8		µg/L	25.0		103	70-130			

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227556 - SW-846 3510C

Blank (B227556-BLK1)

Prepared: 04/05/19 Analyzed: 04/06/19

Acenaphthene	ND	5.0	µg/L							
Acenaphthylene	ND	5.0	µg/L							
Acetophenone	ND	10	µg/L							
Aniline	ND	5.0	µg/L							V-34
Anthracene	ND	5.0	µg/L							
Benzo(a)anthracene	ND	5.0	µg/L							
Benzo(a)pyrene	ND	5.0	µg/L							
Benzo(b)fluoranthene	ND	5.0	µg/L							
Benzo(g,h,i)perylene	ND	5.0	µg/L							
Benzo(k)fluoranthene	ND	5.0	µg/L							
Bis(2-chloroethoxy)methane	ND	10	µg/L							
Bis(2-chloroethyl)ether	ND	10	µg/L							
Bis(2-chloroisopropyl)ether	ND	10	µg/L							
Bis(2-Ethylhexyl)phthalate	ND	10	µg/L							
4-Bromophenylphenylether	ND	10	µg/L							
Butylbenzylphthalate	ND	10	µg/L							
4-Chloroaniline	ND	10	µg/L							V-34
2-Chloronaphthalene	ND	10	µg/L							
2-Chlorophenol	ND	10	µg/L							
Chrysene	ND	5.0	µg/L							
Dibenz(a,h)anthracene	ND	5.0	µg/L							
Dibenzofuran	ND	5.0	µg/L							
Di-n-butylphthalate	ND	10	µg/L							
1,2-Dichlorobenzene	ND	5.0	µg/L							
1,3-Dichlorobenzene	ND	5.0	µg/L							
1,4-Dichlorobenzene	ND	5.0	µg/L							
3,3-Dichlorobenzidine	ND	10	µg/L							
2,4-Dichlorophenol	ND	10	µg/L							
Diethylphthalate	ND	10	µg/L							
2,4-Dimethylphenol	ND	10	µg/L							
Dimethylphthalate	ND	10	µg/L							
2,4-Dinitrophenol	ND	10	µg/L							
2,4-Dinitrotoluene	ND	10	µg/L							
2,6-Dinitrotoluene	ND	10	µg/L							
Di-n-octylphthalate	ND	10	µg/L							
1,2-Diphenylhydrazine/Azobenzene	ND	10	µg/L							
Fluoranthene	ND	5.0	µg/L							
Fluorene	ND	5.0	µg/L							
Hexachlorobenzene	ND	10	µg/L							
Hexachlorobutadiene	ND	10	µg/L							
Hexachloroethane	ND	10	µg/L							
Indeno(1,2,3-cd)pyrene	ND	5.0	µg/L							
Isophorone	ND	10	µg/L							
2-Methylnaphthalene	ND	5.0	µg/L							
2-Methylphenol	ND	10	µg/L							
3/4-Methylphenol	ND	10	µg/L							
Naphthalene	ND	5.0	µg/L							
Nitrobenzene	ND	10	µg/L							
2-Nitrophenol	ND	10	µg/L							
4-Nitrophenol	ND	10	µg/L							
Pentachlorophenol	ND	10	µg/L							
Phenanthrene	ND	5.0	µg/L							

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227556 - SW-846 3510C

Blank (B227556-BLK1)

Prepared: 04/05/19 Analyzed: 04/06/19

Phenol	ND	10	µg/L							
Pyrene	ND	5.0	µg/L							
Pyridine	ND	5.0	µg/L							
1,2,4-Trichlorobenzene	ND	5.0	µg/L							
2,4,5-Trichlorophenol	ND	10	µg/L							
2,4,6-Trichlorophenol	ND	10	µg/L							
Surrogate: 2-Fluorophenol	111		µg/L	200		55.3	15-110			
Surrogate: Phenol-d6	81.8		µg/L	200		40.9	15-110			
Surrogate: Nitrobenzene-d5	85.8		µg/L	100		85.8	30-130			
Surrogate: 2-Fluorobiphenyl	84.7		µg/L	100		84.7	30-130			
Surrogate: 2,4,6-Tribromophenol	190		µg/L	200		95.2	15-110			
Surrogate: p-Terphenyl-d14	99.8		µg/L	100		99.8	30-130			

LCS (B227556-BS1)

Prepared: 04/05/19 Analyzed: 04/06/19

Acenaphthene	39.9	5.0	µg/L	50.0		79.8	40-140			
Acenaphthylene	39.9	5.0	µg/L	50.0		79.8	40-140			
Acetophenone	38.7	10	µg/L	50.0		77.4	40-140			
Aniline	35.4	5.0	µg/L	50.0		70.9	40-140			V-34
Anthracene	40.9	5.0	µg/L	50.0		81.9	40-140			
Benzo(a)anthracene	41.6	5.0	µg/L	50.0		83.2	40-140			
Benzo(a)pyrene	43.7	5.0	µg/L	50.0		87.4	40-140			
Benzo(b)fluoranthene	40.6	5.0	µg/L	50.0		81.3	40-140			
Benzo(g,h,i)perylene	44.9	5.0	µg/L	50.0		89.7	40-140			
Benzo(k)fluoranthene	41.1	5.0	µg/L	50.0		82.2	40-140			
Bis(2-chloroethoxy)methane	46.6	10	µg/L	50.0		93.2	40-140			
Bis(2-chloroethyl)ether	40.6	10	µg/L	50.0		81.2	40-140			
Bis(2-chloroisopropyl)ether	45.4	10	µg/L	50.0		90.7	40-140			
Bis(2-Ethylhexyl)phthalate	45.9	10	µg/L	50.0		91.8	40-140			
4-Bromophenylphenylether	39.6	10	µg/L	50.0		79.3	40-140			
Butylbenzylphthalate	46.0	10	µg/L	50.0		91.9	40-140			
4-Chloroaniline	42.2	10	µg/L	50.0		84.5	15-140			V-34 †
2-Chloronaphthalene	34.6	10	µg/L	50.0		69.2	40-140			
2-Chlorophenol	39.2	10	µg/L	50.0		78.5	30-130			
Chrysene	42.3	5.0	µg/L	50.0		84.6	40-140			
Dibenz(a,h)anthracene	43.2	5.0	µg/L	50.0		86.5	40-140			
Dibenzofuran	40.2	5.0	µg/L	50.0		80.4	40-140			
Di-n-butylphthalate	40.6	10	µg/L	50.0		81.3	40-140			
1,2-Dichlorobenzene	33.2	5.0	µg/L	50.0		66.4	40-140			
1,3-Dichlorobenzene	31.8	5.0	µg/L	50.0		63.5	40-140			
1,4-Dichlorobenzene	32.8	5.0	µg/L	50.0		65.6	40-140			
3,3-Dichlorobenzidine	52.5	10	µg/L	50.0		105	40-140			
2,4-Dichlorophenol	42.7	10	µg/L	50.0		85.4	30-130			
Diethylphthalate	41.1	10	µg/L	50.0		82.3	40-140			
2,4-Dimethylphenol	39.1	10	µg/L	50.0		78.3	30-130			
Dimethylphthalate	43.9	10	µg/L	50.0		87.7	40-140			
2,4-Dinitrophenol	49.7	10	µg/L	50.0		99.3	15-140			†
2,4-Dinitrotoluene	45.2	10	µg/L	50.0		90.5	40-140			
2,6-Dinitrotoluene	45.7	10	µg/L	50.0		91.4	40-140			
Di-n-octylphthalate	43.9	10	µg/L	50.0		87.9	40-140			
1,2-Diphenylhydrazine/Azobenzene	38.6	10	µg/L	50.0		77.2	40-140			
Fluoranthene	40.9	5.0	µg/L	50.0		81.8	40-140			
Fluorene	41.2	5.0	µg/L	50.0		82.4	40-140			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227556 - SW-846 3510C

LCS (B227556-BS1)

Prepared: 04/05/19 Analyzed: 04/06/19

Hexachlorobenzene	38.6	10	µg/L	50.0		77.2	40-140			
Hexachlorobutadiene	34.0	10	µg/L	50.0		67.9	40-140			
Hexachloroethane	32.3	10	µg/L	50.0		64.6	40-140			
Indeno(1,2,3-cd)pyrene	44.6	5.0	µg/L	50.0		89.3	40-140			
Isophorone	41.3	10	µg/L	50.0		82.7	40-140			
2-Methylnaphthalene	41.4	5.0	µg/L	50.0		82.7	40-140			
2-Methylphenol	36.2	10	µg/L	50.0		72.3	30-130			
3/4-Methylphenol	33.2	10	µg/L	50.0		66.3	30-130			
Naphthalene	37.7	5.0	µg/L	50.0		75.4	40-140			
Nitrobenzene	37.6	10	µg/L	50.0		75.2	40-140			
2-Nitrophenol	44.0	10	µg/L	50.0		88.1	30-130			
4-Nitrophenol	23.0	10	µg/L	50.0		46.0	15-140			†
Pentachlorophenol	44.5	10	µg/L	50.0		89.1	30-130			
Phenanthrene	40.7	5.0	µg/L	50.0		81.4	40-140			
Phenol	18.8	10	µg/L	50.0		37.6	15-140			†
Pyrene	42.6	5.0	µg/L	50.0		85.2	40-140			
Pyridine	22.1	5.0	µg/L	50.0		44.2	10-140			†
1,2,4-Trichlorobenzene	35.6	5.0	µg/L	50.0		71.2	40-140			
2,4,5-Trichlorophenol	41.3	10	µg/L	50.0		82.6	30-130			
2,4,6-Trichlorophenol	41.6	10	µg/L	50.0		83.1	30-130			
Surrogate: 2-Fluorophenol	104		µg/L	200		51.8	15-110			
Surrogate: Phenol-d6	78.4		µg/L	200		39.2	15-110			
Surrogate: Nitrobenzene-d5	84.4		µg/L	100		84.4	30-130			
Surrogate: 2-Fluorobiphenyl	84.2		µg/L	100		84.2	30-130			
Surrogate: 2,4,6-Tribromophenol	197		µg/L	200		98.5	15-110			
Surrogate: p-Terphenyl-d14	92.2		µg/L	100		92.2	30-130			

LCS Dup (B227556-BS1)

Prepared: 04/05/19 Analyzed: 04/06/19

Acenaphthene	39.4	5.0	µg/L	50.0		78.8	40-140	1.34	20	
Acenaphthylene	38.3	5.0	µg/L	50.0		76.5	40-140	4.20	20	
Acetophenone	37.5	10	µg/L	50.0		75.0	40-140	3.12	20	
Aniline	32.6	5.0	µg/L	50.0		65.1	40-140	8.50	20	V-34
Anthracene	40.9	5.0	µg/L	50.0		81.8	40-140	0.0489	20	
Benzo(a)anthracene	41.7	5.0	µg/L	50.0		83.4	40-140	0.336	20	
Benzo(a)pyrene	43.0	5.0	µg/L	50.0		86.0	40-140	1.64	20	
Benzo(b)fluoranthene	39.9	5.0	µg/L	50.0		79.7	40-140	1.96	20	
Benzo(g,h,i)perylene	43.6	5.0	µg/L	50.0		87.3	40-140	2.76	20	
Benzo(k)fluoranthene	40.6	5.0	µg/L	50.0		81.1	40-140	1.40	20	
Bis(2-chloroethoxy)methane	45.9	10	µg/L	50.0		91.8	40-140	1.47	20	
Bis(2-chloroethyl)ether	38.8	10	µg/L	50.0		77.5	40-140	4.56	20	
Bis(2-chloroisopropyl)ether	43.3	10	µg/L	50.0		86.7	40-140	4.60	20	
Bis(2-Ethylhexyl)phthalate	46.3	10	µg/L	50.0		92.5	40-140	0.825	20	
4-Bromophenylphenylether	40.2	10	µg/L	50.0		80.3	40-140	1.33	20	
Butylbenzylphthalate	45.8	10	µg/L	50.0		91.6	40-140	0.349	20	
4-Chloroaniline	39.4	10	µg/L	50.0		78.8	15-140	6.88	20	V-34 †
2-Chloronaphthalene	32.5	10	µg/L	50.0		65.0	40-140	6.29	20	
2-Chlorophenol	36.2	10	µg/L	50.0		72.4	30-130	8.03	20	
Chrysene	41.9	5.0	µg/L	50.0		83.7	40-140	0.998	20	
Dibenz(a,h)anthracene	41.8	5.0	µg/L	50.0		83.5	40-140	3.46	20	
Dibenzofuran	40.5	5.0	µg/L	50.0		81.0	40-140	0.669	20	
Di-n-butylphthalate	42.1	10	µg/L	50.0		84.3	40-140	3.60	20	
1,2-Dichlorobenzene	32.6	5.0	µg/L	50.0		65.1	40-140	1.98	20	

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227556 - SW-846 3510C										
LCS Dup (B227556-BSD1)										
					Prepared: 04/05/19 Analyzed: 04/06/19					
1,3-Dichlorobenzene	31.3	5.0	µg/L	50.0		62.6	40-140	1.55	20	
1,4-Dichlorobenzene	31.5	5.0	µg/L	50.0		63.0	40-140	4.04	20	
3,3-Dichlorobenzidine	51.5	10	µg/L	50.0		103	40-140	1.90	20	
2,4-Dichlorophenol	41.4	10	µg/L	50.0		82.9	30-130	3.00	20	
Diethylphthalate	41.0	10	µg/L	50.0		82.1	40-140	0.243	20	
2,4-Dimethylphenol	37.6	10	µg/L	50.0		75.3	30-130	3.91	20	
Dimethylphthalate	42.5	10	µg/L	50.0		85.1	40-140	3.06	20	
2,4-Dinitrophenol	50.2	10	µg/L	50.0		100	15-140	1.10	20	†
2,4-Dinitrotoluene	44.9	10	µg/L	50.0		89.8	40-140	0.776	20	
2,6-Dinitrotoluene	46.1	10	µg/L	50.0		92.2	40-140	0.784	20	
Di-n-octylphthalate	44.8	10	µg/L	50.0		89.6	40-140	2.01	20	
1,2-Diphenylhydrazine/Azobenzene	38.9	10	µg/L	50.0		77.8	40-140	0.852	20	
Fluoranthene	41.6	5.0	µg/L	50.0		83.1	40-140	1.58	20	
Fluorene	40.5	5.0	µg/L	50.0		81.1	40-140	1.66	20	
Hexachlorobenzene	39.4	10	µg/L	50.0		78.9	40-140	2.18	20	
Hexachlorobutadiene	34.7	10	µg/L	50.0		69.5	40-140	2.27	20	
Hexachloroethane	32.5	10	µg/L	50.0		65.0	40-140	0.648	20	
Indeno(1,2,3-cd)pyrene	43.7	5.0	µg/L	50.0		87.4	40-140	2.13	20	
Isophorone	40.8	10	µg/L	50.0		81.7	40-140	1.19	20	
2-Methylnaphthalene	40.6	5.0	µg/L	50.0		81.2	40-140	1.93	20	
2-Methylphenol	34.7	10	µg/L	50.0		69.4	30-130	4.21	20	
3/4-Methylphenol	31.5	10	µg/L	50.0		63.0	30-130	5.20	20	
Naphthalene	37.0	5.0	µg/L	50.0		74.1	40-140	1.71	20	
Nitrobenzene	37.2	10	µg/L	50.0		74.3	40-140	1.23	20	
2-Nitrophenol	43.0	10	µg/L	50.0		86.1	30-130	2.30	20	
4-Nitrophenol	23.1	10	µg/L	50.0		46.3	15-140	0.607	20	†
Pentachlorophenol	44.2	10	µg/L	50.0		88.5	30-130	0.676	20	
Phenanthrene	40.2	5.0	µg/L	50.0		80.4	40-140	1.29	20	
Phenol	17.6	10	µg/L	50.0		35.1	15-140	6.82	20	†
Pyrene	42.8	5.0	µg/L	50.0		85.6	40-140	0.375	20	
Pyridine	19.6	5.0	µg/L	50.0		39.2	10-140	12.0	50	† ‡
1,2,4-Trichlorobenzene	35.3	5.0	µg/L	50.0		70.6	40-140	0.846	20	
2,4,5-Trichlorophenol	40.1	10	µg/L	50.0		80.2	30-130	3.00	20	
2,4,6-Trichlorophenol	42.0	10	µg/L	50.0		84.1	30-130	1.15	20	
Surrogate: 2-Fluorophenol	97.5		µg/L	200		48.8	15-110			
Surrogate: Phenol-d6	70.9		µg/L	200		35.4	15-110			
Surrogate: Nitrobenzene-d5	79.4		µg/L	100		79.4	30-130			
Surrogate: 2-Fluorobiphenyl	79.8		µg/L	100		79.8	30-130			
Surrogate: 2,4,6-Tribromophenol	194		µg/L	200		97.2	15-110			
Surrogate: p-Terphenyl-d14	92.3		µg/L	100		92.3	30-130			

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QUALITY CONTROL

Polychlorinated Biphenyls By GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227544 - SW-846 3510C

Blank (B227544-BLK1)

Prepared: 04/05/19 Analyzed: 04/06/19

Aroclor-1016	ND	0.10	µg/L							
Aroclor-1016 [2C]	ND	0.10	µg/L							
Aroclor-1221	ND	0.10	µg/L							
Aroclor-1221 [2C]	ND	0.10	µg/L							
Aroclor-1232	ND	0.10	µg/L							
Aroclor-1232 [2C]	ND	0.10	µg/L							
Aroclor-1242	ND	0.10	µg/L							
Aroclor-1242 [2C]	ND	0.10	µg/L							
Aroclor-1248	ND	0.10	µg/L							
Aroclor-1248 [2C]	ND	0.10	µg/L							
Aroclor-1254	ND	0.10	µg/L							
Aroclor-1254 [2C]	ND	0.10	µg/L							
Aroclor-1260	ND	0.10	µg/L							
Aroclor-1260 [2C]	ND	0.10	µg/L							
Aroclor-1262	ND	0.10	µg/L							
Aroclor-1262 [2C]	ND	0.10	µg/L							
Aroclor-1268	ND	0.10	µg/L							
Aroclor-1268 [2C]	ND	0.10	µg/L							
Surrogate: Decachlorobiphenyl	1.48		µg/L	2.00		73.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.48		µg/L	2.00		73.9	30-150			
Surrogate: Tetrachloro-m-xylene	1.16		µg/L	2.00		58.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.19		µg/L	2.00		59.3	30-150			

LCS (B227544-BS1)

Prepared: 04/05/19 Analyzed: 04/06/19

Aroclor-1016	0.42	0.20	µg/L	0.500		85.0	40-140			
Aroclor-1016 [2C]	0.42	0.20	µg/L	0.500		84.6	40-140			
Aroclor-1260	0.40	0.20	µg/L	0.500		79.4	40-140			
Aroclor-1260 [2C]	0.41	0.20	µg/L	0.500		82.3	40-140			
Surrogate: Decachlorobiphenyl	1.73		µg/L	2.00		86.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.75		µg/L	2.00		87.3	30-150			
Surrogate: Tetrachloro-m-xylene	1.40		µg/L	2.00		70.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.43		µg/L	2.00		71.6	30-150			

LCS Dup (B227544-BSD1)

Prepared: 04/05/19 Analyzed: 04/06/19

Aroclor-1016	0.41	0.20	µg/L	0.500		81.2	40-140	4.53	20	
Aroclor-1016 [2C]	0.42	0.20	µg/L	0.500		83.2	40-140	1.67	20	
Aroclor-1260	0.38	0.20	µg/L	0.500		76.2	40-140	4.17	20	
Aroclor-1260 [2C]	0.40	0.20	µg/L	0.500		79.5	40-140	3.52	20	
Surrogate: Decachlorobiphenyl	1.67		µg/L	2.00		83.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.73		µg/L	2.00		86.3	30-150			
Surrogate: Tetrachloro-m-xylene	1.40		µg/L	2.00		69.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.44		µg/L	2.00		71.9	30-150			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227365 - SW-846 3005A

Blank (B227365-BLK1)

Prepared: 04/03/19 Analyzed: 04/04/19

Antimony	ND	1.0	µg/L							
Arsenic	ND	0.40	µg/L							
Barium	ND	10	µg/L							
Beryllium	ND	0.40	µg/L							
Cadmium	ND	0.50	µg/L							
Chromium	ND	1.0	µg/L							
Copper	ND	5.0	µg/L							
Lead	ND	1.0	µg/L							
Manganese	ND	1.0	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.50	µg/L							
Thallium	ND	0.20	µg/L							
Vanadium	ND	5.0	µg/L							
Zinc	ND	10	µg/L							

LCS (B227365-BS1)

Prepared: 04/03/19 Analyzed: 04/04/19

Antimony	503	10	µg/L	500		101	80-120			
Arsenic	501	4.0	µg/L	500		100	80-120			
Barium	497	100	µg/L	500		99.5	80-120			
Beryllium	468	4.0	µg/L	500		93.7	80-120			
Cadmium	503	5.0	µg/L	500		101	80-120			
Chromium	501	10	µg/L	500		100	80-120			
Copper	1050	50	µg/L	1000		105	80-120			
Lead	520	10	µg/L	500		104	80-120			
Manganese	529	10	µg/L	500		106	80-120			
Nickel	518	50	µg/L	500		104	80-120			
Selenium	492	50	µg/L	500		98.5	80-120			
Silver	473	5.0	µg/L	500		94.7	80-120			
Thallium	507	2.0	µg/L	500		101	80-120			
Vanadium	534	50	µg/L	500		107	80-120			
Zinc	1000	100	µg/L	1000		100	80-120			

LCS Dup (B227365-BSD1)

Prepared: 04/03/19 Analyzed: 04/04/19

Antimony	525	10	µg/L	500		105	80-120	4.31	20	
Arsenic	527	4.0	µg/L	500		105	80-120	4.99	20	
Barium	521	100	µg/L	500		104	80-120	4.62	20	
Beryllium	508	4.0	µg/L	500		102	80-120	8.08	20	
Cadmium	522	5.0	µg/L	500		104	80-120	3.84	20	
Chromium	522	10	µg/L	500		104	80-120	4.05	20	
Copper	1100	50	µg/L	1000		110	80-120	4.66	20	
Lead	537	10	µg/L	500		107	80-120	3.22	20	
Manganese	551	10	µg/L	500		110	80-120	4.06	20	
Nickel	542	50	µg/L	500		108	80-120	4.56	20	
Selenium	520	50	µg/L	500		104	80-120	5.40	20	
Silver	491	5.0	µg/L	500		98.3	80-120	3.74	20	
Thallium	523	2.0	µg/L	500		105	80-120	3.02	20	
Vanadium	562	50	µg/L	500		112	80-120	5.03	20	
Zinc	1040	100	µg/L	1000		104	80-120	3.65	20	

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227365 - SW-846 3005A

Duplicate (B227365-DUP1)		Source: 19D0030-02			Prepared: 04/03/19 Analyzed: 04/04/19					
Antimony	ND	1.0	µg/L		ND			NC	20	
Arsenic	ND	0.40	µg/L		ND			NC	20	
Barium	93.0	10	µg/L		93.2			0.253	20	
Beryllium	ND	0.40	µg/L		ND			NC	20	
Cadmium	0.529	0.50	µg/L		0.522			1.33	20	
Chromium	ND	1.0	µg/L		ND			NC	20	
Copper	5.13	5.0	µg/L		5.13			0.00828	20	
Lead	ND	1.0	µg/L		ND			NC	20	
Manganese	4870	100	µg/L		4360			11.0	20	
Nickel	16.8	5.0	µg/L		16.6			1.46	20	
Selenium	ND	5.0	µg/L		ND			NC	20	
Silver	ND	0.50	µg/L		ND			NC	20	
Thallium	ND	0.20	µg/L		ND			NC	20	
Vanadium	ND	5.0	µg/L		ND			NC	20	
Zinc	ND	10	µg/L		ND			NC	20	

Matrix Spike (B227365-MS1)		Source: 19D0030-02			Prepared: 04/03/19 Analyzed: 04/04/19					
Antimony	534	10	µg/L	500	ND	107		75-125		
Arsenic	532	4.0	µg/L	500	ND	106		75-125		
Barium	618	100	µg/L	500	93.2	105		75-125		
Beryllium	535	4.0	µg/L	500	ND	107		75-125		
Cadmium	526	5.0	µg/L	500	ND	105		75-125		
Chromium	513	10	µg/L	500	ND	103		75-125		
Copper	1060	50	µg/L	1000	ND	106		75-125		
Lead	551	10	µg/L	500	ND	110		75-125		
Manganese	5000	100	µg/L	500	4360	128	*	75-125		MS-19
Nickel	544	50	µg/L	500	16.6	105		75-125		
Selenium	520	50	µg/L	500	ND	104		75-125		
Silver	468	5.0	µg/L	500	ND	93.7		75-125		
Thallium	540	2.0	µg/L	500	ND	108		75-125		
Vanadium	585	50	µg/L	500	ND	117		75-125		
Zinc	1050	100	µg/L	1000	ND	105		75-125		

Batch B227561 - SW-846 7470A Prep

Blank (B227561-BLK1)		Prepared & Analyzed: 04/08/19								
Mercury	ND	0.00010	mg/L							
LCS (B227561-BS1)		Prepared & Analyzed: 04/08/19								
Mercury	0.00379	0.00010	mg/L	0.00400		94.7		80-120		
LCS Dup (B227561-BSD1)		Prepared & Analyzed: 04/08/19								
Mercury	0.00381	0.00010	mg/L	0.00400		95.2		80-120	0.563	20

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QUALITY CONTROL

Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227576 - SW-846 3005A Dissolved										
Blank (B227576-BLK1)				Prepared: 04/05/19 Analyzed: 04/08/19						
Arsenic	ND	0.40	µg/L							
LCS (B227576-BS1)				Prepared: 04/05/19 Analyzed: 04/08/19						
Arsenic	41.3	0.40	µg/L	40.0		103	80-120			

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227184 - EPA 300.0										
Blank (B227184-BLK1)										
				Prepared & Analyzed: 04/02/19						
Nitrate as N	ND	0.10	mg/L							
Nitrite as N	ND	0.100	mg/L							
LCS (B227184-BS1)										
				Prepared & Analyzed: 04/02/19						
Nitrate as N	0.92	0.10	mg/L	1.00		92.2	90-110			
Nitrite as N	0.977	0.100	mg/L	1.00		97.7	90-110			
LCS Dup (B227184-BSD1)										
				Prepared & Analyzed: 04/02/19						
Nitrate as N	0.91	0.10	mg/L	1.00		91.5	90-110	0.752	20	
Nitrite as N	0.973	0.100	mg/L	1.00		97.3	90-110	0.410	20	
Batch B227187 - SM 21-22 4500 P E										
Blank (B227187-BLK1)										
				Prepared & Analyzed: 04/01/19						
Orthophosphate as P	ND	0.050	mg/L							
LCS (B227187-BS1)										
				Prepared & Analyzed: 04/01/19						
Orthophosphate as P	0.18	0.050	mg/L	0.170		105	72-122			
LCS Dup (B227187-BSD1)										
				Prepared & Analyzed: 04/01/19						
Orthophosphate as P	0.20	0.050	mg/L	0.170		118	72-122	12.3 *	10.6	R-05
Duplicate (B227187-DUP1)										
				Source: 19D0030-04			Prepared & Analyzed: 04/01/19			
Orthophosphate as P	ND	0.050	mg/L		ND			NC	17	
Matrix Spike (B227187-MS1)										
				Source: 19D0030-04			Prepared & Analyzed: 04/01/19			
Orthophosphate as P	0.30	0.050	mg/L	0.300	ND	101	55.9-148			
Batch B227200 - SM19-22 4500 NH3 C										
Blank (B227200-BLK1)										
				Prepared: 04/02/19 Analyzed: 04/03/19						
Ammonia as N	ND	0.30	mg/L							
LCS (B227200-BS1)										
				Prepared: 04/02/19 Analyzed: 04/03/19						
Ammonia as N	4.8	0.30	mg/L	5.00		95.8	81.5-113			
LCS Dup (B227200-BSD1)										
				Prepared: 04/02/19 Analyzed: 04/03/19						
Ammonia as N	4.8	0.30	mg/L	5.00		95.8	81.5-113	0.00	11.4	
Batch B227249 - SM 21-22 4500 P E										
Blank (B227249-BLK1)										
				Prepared & Analyzed: 04/02/19						
Phosphorus, Total	ND	0.050	mg/L							

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227249 - SM 21-22 4500 P E										
LCS (B227249-BS1)				Prepared & Analyzed: 04/02/19						
Phosphorus, Total	0.21	0.050	mg/L	0.205		101	86.5-124			
LCS Dup (B227249-BSD1)				Prepared & Analyzed: 04/02/19						
Phosphorus, Total	0.24	0.050	mg/L	0.205		116	86.5-124	13.8	*	11 R-05
Duplicate (B227249-DUP1)				Source: 19D0030-04			Prepared & Analyzed: 04/02/19			
Phosphorus, Total	ND	0.062	mg/L		ND			NC		38.5
Matrix Spike (B227249-MS1)				Source: 19D0030-04			Prepared & Analyzed: 04/02/19			
Phosphorus, Total	0.41	0.062	mg/L	0.300	ND	136	28.2-163			
Batch B227312 - SM19-22 4500-N Org B,C-NH3 C										
Blank (B227312-BLK1)				Prepared: 04/03/19 Analyzed: 04/04/19						
Total Kjeldahl Nitrogen	ND	1.0	mg/L							
LCS (B227312-BS1)				Prepared: 04/03/19 Analyzed: 04/04/19						
Total Kjeldahl Nitrogen	19	1.0	mg/L	20.0		95.8	75-117			
Batch B227319 - EPA 300.0										
Blank (B227319-BLK1)				Prepared & Analyzed: 04/02/19						
Nitrate as N	ND	0.10	mg/L							
LCS (B227319-BS1)				Prepared & Analyzed: 04/02/19						
Nitrate as N	0.98	0.10	mg/L	1.00		97.8	90-110			
LCS Dup (B227319-BSD1)				Prepared & Analyzed: 04/02/19						
Nitrate as N	1.0	0.10	mg/L	1.00		102	90-110	4.58		20
Duplicate (B227319-DUP1)				Source: 19D0030-04			Prepared & Analyzed: 04/02/19			
Nitrate as N	7.8	0.20	mg/L		7.8			0.213		20
Matrix Spike (B227319-MS1)				Source: 19D0030-04			Prepared & Analyzed: 04/02/19			
Nitrate as N	9.2	0.20	mg/L	2.00	7.8	71.5	* 80-120			MS-07
Batch B227332 - EPA 300.0										
Blank (B227332-BLK1)				Prepared & Analyzed: 04/02/19						
Nitrite as N	ND	0.100	mg/L							

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227332 - EPA 300.0										
LCS (B227332-BS1)				Prepared & Analyzed: 04/02/19						
Nitrite as N	1.10	0.100	mg/L	1.00		110	90-110			
LCS Dup (B227332-BSD1)				Prepared & Analyzed: 04/02/19						
Nitrite as N	1.10	0.100	mg/L	1.00		110	90-110	0.100	20	
Duplicate (B227332-DUP1)				Source: 19D0030-04		Prepared & Analyzed: 04/02/19				
Nitrite as N	0.792	0.100	mg/L		0.810			2.29	20	
Matrix Spike (B227332-MS1)				Source: 19D0030-04		Prepared & Analyzed: 04/02/19				
Nitrite as N	1.82	0.100	mg/L	1.00	0.810	101	80-120			
Batch B227352 - EPA 300.0										
Blank (B227352-BLK1)				Prepared & Analyzed: 04/05/19						
Chloride	ND	1.0	mg/L							
LCS (B227352-BS1)				Prepared & Analyzed: 04/05/19						
Chloride	5.1	1.0	mg/L	5.00		102	90-110			
LCS Dup (B227352-BSD1)				Prepared & Analyzed: 04/05/19						
Chloride	5.1	1.0	mg/L	5.00		103	90-110	0.224	20	
Duplicate (B227352-DUP2)				Source: 19D0030-04		Prepared & Analyzed: 04/05/19				
Chloride	140	10	mg/L		140			2.91	20	
Matrix Spike (B227352-MS2)				Source: 19D0030-04		Prepared & Analyzed: 04/05/19				
Chloride	180	10	mg/L	50.0	140	82.0	80-120			

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

LCS

SW-846 8082A

Lab Sample ID: B227544-BS1 Date(s) Analyzed: 04/06/2019 04/06/2019

Instrument ID (1): ECD4 Instrument ID (2): ECD4

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.42	
	2	0.000	0.000	0.000	0.42	2.4
Aroclor-1260	1	0.000	0.000	0.000	0.40	
	2	0.000	0.000	0.000	0.41	2.5

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

LCS Dup

SW-846 8082A

Lab Sample ID: B227544-BSD1 Date(s) Analyzed: 04/06/2019 04/06/2019

Instrument ID (1): ECD4 Instrument ID (2): ECD4

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.41	
	2	0.000	0.000	0.000	0.42	2.4
Aroclor-1260	1	0.000	0.000	0.000	0.38	
	2	0.000	0.000	0.000	0.40	5.1

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-14	Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.
MS-07	Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.
MS-19	Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
RL-07	Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
V-16	Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side.
V-34	Data validation is not affected since sample result was "not detected" for this compound. Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.
W-17	Samples analyzed for Ortho phosphate were not filtered within 15 minutes of sampling.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 300.0 in Water</i>	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
Nitrate as N	NC,NY,MA,VA,ME,NH,CT,RI
Nitrite as N	NY,NC,NH,VA,ME,CT,RI
<i>SM 21-22 4500 PE in Water</i>	
Orthophosphate as P	CT,MA,NH,NY,RI,ME,VA
Phosphorus, Total	CT,MA,NH,NY,RI,NC,ME,VA
<i>SM19-22 4500 NH3 C in Water</i>	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
<i>SM19-22 4500-N Org B,C-NH3 C in Water</i>	
Total Kjeldahl Nitrogen	CT,MA,NH,NY,RI,NC,ME,VA
<i>SW-846 6020B in Water</i>	
Antimony	CT,NH,NY,ME,VA,NC
Arsenic	CT,NH,NY,NC,ME,VA
Arsenic	CT,NH,NY,ME,VA,NC
Barium	CT,NH,NY,ME,VA,NC
Beryllium	CT,NH,NY,ME,VA,NC
Cadmium	CT,NH,NY,RI,ME,VA,NC
Chromium	CT,NH,NY,ME,VA,NC
Copper	CT,NH,NY,ME,VA,NC
Lead	CT,NH,NY,ME,VA,NC
Manganese	CT,NH,NY,ME,VA,NC
Nickel	CT,NH,NY,ME,VA,NC
Selenium	CT,NH,NY,ME,VA,NC
Silver	CT,NH,NY,ME,VA,NC
Thallium	CT,NH,NY,ME,VA,NC
Vanadium	CT,NH,NY,ME,VA,NC
Zinc	CT,NH,NY,ME,VA,NC
<i>SW-846 7470A in Water</i>	
Mercury	CT,NH,NY,NC,ME,VA
<i>SW-846 8082A in Water</i>	
Aroclor-1016	CT,NH,NY,NC,ME,VA
Aroclor-1016 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1221	CT,NH,NY,NC,ME,VA
Aroclor-1221 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1232	CT,NH,NY,NC,ME,VA
Aroclor-1232 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1242	CT,NH,NY,NC,ME,VA
Aroclor-1242 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1248	CT,NH,NY,NC,ME,VA
Aroclor-1248 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1254	CT,NH,NY,NC,ME,VA
Aroclor-1254 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1260	CT,NH,NY,NC,ME,VA
Aroclor-1260 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1262	NH,NY,NC,ME,VA

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Water	
Aroclor-1262 [2C]	NH,NY,NC,ME,VA
Aroclor-1268	NH,NY,NC,ME,VA
Aroclor-1268 [2C]	NH,NY,NC,ME,VA
SW-846 8260C in Water	
Acetone	CT,NH,NY,ME
tert-Amyl Methyl Ether (TAME)	NH,NY,ME
Benzene	CT,NH,NY,ME
Bromobenzene	ME
Bromochloromethane	NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME
n-Butylbenzene	NY,ME
sec-Butylbenzene	NY,ME
tert-Butylbenzene	NY,ME
tert-Butyl Ethyl Ether (TBEE)	NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
2-Chlorotoluene	NY,ME
4-Chlorotoluene	NY,ME
1,2-Dibromo-3-chloropropane (DBCP)	NY
1,2-Dibromoethane (EDB)	NY
Dibromomethane	NH,NY,ME
1,2-Dichlorobenzene	CT,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
Dichlorodifluoromethane (Freon 12)	NH,NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,3-Dichloropropane	NY,ME
2,2-Dichloropropane	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
Diisopropyl Ether (DIPE)	NH,NY,ME
Ethylbenzene	CT,NH,NY,ME

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Water	
Hexachlorobutadiene	CT,NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	NY,ME
p-Isopropyltoluene (p-Cymene)	CT,NH,NY,ME
Methyl tert-Butyl Ether (MTBE)	CT,NH,NY,ME
Methylene Chloride	CT,NH,NY,ME
4-Methyl-2-pentanone (MIBK)	CT,NH,NY,ME
Naphthalene	NH,NY,ME
n-Propylbenzene	CT,NH,NY,ME
Styrene	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
1,2,3-Trichlorobenzene	NH,NY,ME
1,2,4-Trichlorobenzene	CT,NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,4-Trimethylbenzene	NY,ME
1,3,5-Trimethylbenzene	NY,ME
Vinyl Chloride	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME
SW-846 8270D in Water	
Acenaphthene	CT,NY,NH
Acenaphthylene	CT,NY,NH
Acetophenone	NY
Aniline	CT,NY
Anthracene	CT,NY,NH
Benzo(a)anthracene	CT,NY,NH
Benzo(a)pyrene	CT,NY,NH
Benzo(b)fluoranthene	CT,NY,NH
Benzo(g,h,i)perylene	CT,NY,NH
Benzo(k)fluoranthene	CT,NY,NH
Bis(2-chloroethoxy)methane	CT,NY,NH
Bis(2-chloroethyl)ether	CT,NY,NH
Bis(2-chloroisopropyl)ether	CT,NY,NH
Bis(2-Ethylhexyl)phthalate	CT,NY,NH
4-Bromophenylphenylether	CT,NY,NH
Butylbenzylphthalate	CT,NY,NH
4-Chloroaniline	CT,NY,NH
2-Chloronaphthalene	CT,NY,NH
2-Chlorophenol	CT,NY,NH

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8270D in Water</i>	
Chrysene	CT,NY,NH
Dibenz(a,h)anthracene	CT,NY,NH
Dibenzofuran	CT,NY,NH
Di-n-butylphthalate	CT,NY,NH
1,2-Dichlorobenzene	CT,NY,NH
1,3-Dichlorobenzene	CT,NY,NH
1,4-Dichlorobenzene	CT,NY,NH
3,3-Dichlorobenzidine	CT,NY,NH
2,4-Dichlorophenol	CT,NY,NH
Diethylphthalate	CT,NY,NH
2,4-Dimethylphenol	CT,NY,NH
Dimethylphthalate	CT,NY,NH
2,4-Dinitrophenol	CT,NY,NH
2,4-Dinitrotoluene	CT,NY,NH
2,6-Dinitrotoluene	CT,NY,NH
Di-n-octylphthalate	CT,NY,NH
1,2-Diphenylhydrazine/Azobenzene	NY
Fluoranthene	CT,NY,NH
Fluorene	NY,NH
Hexachlorobenzene	CT,NY,NH
Hexachlorobutadiene	CT,NY,NH
Hexachloroethane	CT,NY,NH
Indeno(1,2,3-cd)pyrene	CT,NY,NH
Isophorone	CT,NY,NH
2-Methylnaphthalene	CT,NY,NH
2-Methylphenol	CT,NY,NH
3/4-Methylphenol	CT,NY,NH
Naphthalene	CT,NY,NH
Nitrobenzene	CT,NY,NH
2-Nitrophenol	CT,NY,NH
4-Nitrophenol	CT,NY,NH
Pentachlorophenol	CT,NY,NH
Phenanthrene	CT,NY,NH
Phenol	CT,NY,NH
Pyrene	CT,NY,NH
1,2,4-Trichlorobenzene	CT,NY,NH
2,4,5-Trichlorophenol	CT,NY,NH
2,4,6-Trichlorophenol	CT,NY,NH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2019
CT	Connecticut Department of Public Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2019
FL	Florida Department of Health	E871027 NELAP	06/30/2019
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2019
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2019
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2019
NC-DW	North Carolina Department of Health	25703	07/31/2019

JLH

Company Name: Vertex
Address: 100 N Washington St Boston MA
Phone: 781-917-5360
Project Name: River's Edge
Project Location: Wayland, MA
Project Number: 46047
Project Manager: K. Sarson
Con-Test Quote Name/Number:
Invoice Recipient: K. Sarson
Sampled By: K. Sarson

Requested Turnaround Time
7-Day 10-Day
Due Date: 5 Day

Rush Approval Required
1-Day 3-Day
2-Day 4-Day

Data Delivery
Format: PDF EXCEL
Other: Excel
CLP Like Data Pkg Required:
Email To: ksarson@vertexeng.com
Fax To #:

Requested Turnaround Time	1	1	3	2	2	1	1						
Due Date:	N	N	4	1	1	S	1						
Rush Approval Required	P	P	V	A	A	P	P						
ANALYSIS REQUESTED													
Diss Arsenic													
Tested MCP 14 Metals													
8260													
8270													
PCB 8082													
Ammonia/Total N / Phos													
Nitrate/nitrite/chloride													

of Containers

2 Preservation Code

3 Container Code

Dissolved Metals Samples
 Field Filtered
 Lab to Filter

Orthophosphate Samples
 Field Filtered
 Lab to Filter

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	Matrix Code	Conc Code
1	V-103 (MW)	4/1/19	1320 0415		X	GW	
2	V-101 (MW)		0815 1100				
3	V-102 (MW)		1100 1320				
4	V-105 (MW)		1500				

1 Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

2 Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

3 Container Codes:
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define)

Comments: sample 01 was moved to work order 19D0106 JLH 4/3/19, add Cu and Mn

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature) [Signature] Date/Time: 4/1/19 1545

Received by: (signature) [Signature] Date/Time: 4/1/19 1545

Relinquished by: (signature) [Signature] Date/Time: 4/1/19 1945

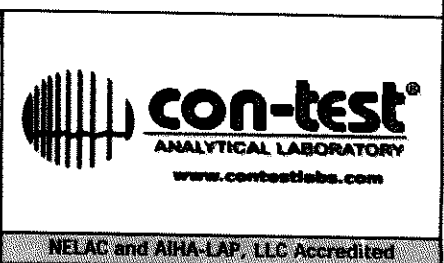
Received by: (signature) [Signature] Date/Time: 4-1-19 1945

Relinquished by: (signature) [Signature] Date/Time:

Received by: (signature) [Signature] Date/Time:

Detection Limit Requirements
WA

Special Requirements
 MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required
PWSID #



Project Entity
 Government Municipality MWRA WRTA
 Federal 21 J School
 City Brownfield MBTA

Other
 Chromatogram
 AIHA-LAP, LLC

PCB ONLY
 Soxhlet
 Non Soxhlet

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Vectex

Received By LR Date 4-1-19 Time 1945

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 3 Actual Temp - 3.3, 2.7
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? T Who was notified? Irma

Is there enough Volume? *T
 Is there Headspace where applicable? F MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? T On COC? F
 Do all samples have the proper pH? Acid T Base _____

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.	6	1 Liter Plastic	7	16 oz Amb.
HCL-	<u>13 14</u>	500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	6	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass	6	Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

* No unpreserved container received for sample V-163 (MW)
Trip blank received not on COC

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 19D0030
Project Location: Wayland, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]
19D0030-02 thru 19D0030-05

Matrices: Water

CAM Protocol (check all that below)

8260 VOC CAM II A (X)	7470/7471 Hg CAM III B (X)	MassDEP VPH CAM IV A ()	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ()	6860 Perchlorate CAM VIII B ()
8270 SVOC CAM II B (X)	7010 Metals CAM III C ()	MassDEP VPH CAM IV C ()	8081 Pesticides CAM V B ()	7196 Hex Cr CAM VI B ()	MassDEP APH CAM IX A ()
6010 Metals CAM III A ()	6020 Metals CAM III D (X)	MassDEP EPH CAM IV B ()	8151 Herbicides CAM V C ()	8330 Explosives CAM VIII A ()	TO-15 VOC CAM IX B ()

Affirmative response to Questions A through F is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	<input type="checkbox"/> Yes <input type="checkbox"/> No ¹
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No ¹
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹
----------	---	--

Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹

¹All Negative responses must be addressed in an attached Environmental Laboratory case narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Lisa Worthington Position: Technical Representative
Printed Name: Lisa A. Worthington Date: 04/08/19

April 23, 2019

Kristen Sarson
Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114

Project Location: Wayland, MA
Client Job Number:
Project Number: 46047
Laboratory Work Order Number: 19D0106

Enclosed are results of analyses for samples received by the laboratory on April 2, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Jessica Hoffman". The signature is written in a cursive style with a light blue background behind it.

Jessica L. Hoffman
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Vertex Engineering - Boston
 100 North Washington St. Suite 302
 Boston, MA 02114
 ATTN: Kristen Sarson

REPORT DATE: 4/23/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 46047

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19D0106

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

PROJECT LOCATION: Wayland, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
V-103 (MW)	19D0106-01	Ground Water		EPA 300.0 SM 21-22 4500 P E SM19-22 4500 NH3 C SM19-22 4500-N Org B,C-NH3 C SW-846 6020B SW-846 7470A SW-846 8082A SW-846 8260C SW-846 8270D	
V-106 (MW)	19D0106-02	Ground Water		EPA 300.0 SM 21-22 4500 P E SM19-22 4500 NH3 C SM19-22 4500-N Org B,C-NH3 C SW-846 6020B SW-846 7470A SW-846 8082A SW-846 8260C SW-846 8270D	
V-104 (MW)	19D0106-03	Ground Water		EPA 300.0 SM 21-22 4500 P E SM19-22 4500 NH3 C SM19-22 4500-N Org B,C-NH3 C SW-846 6020B SW-846 7470A SW-846 8082A SW-846 8260C SW-846 8270D	
MW-3	19D0106-04	Ground Water		EPA 300.0 SM 21-22 4500 P E SM19-22 4500 NH3 C SM19-22 4500-N Org B,C-NH3 C SW-846 6020B SW-846 7470A SW-846 8082A SW-846 8260C SW-846 8270D	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

REVISED REPORT 04-23-19: Per client request dissolved Ni was added to sample 19D0106-02.

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EPA 300.0**Qualifications:****MS-07**

Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:**Chloride**

19D0106-03[V-104 (MW)], B227612-MS1

SM 21-22 4500 P E**Qualifications:****R-05**

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:**Orthophosphate as P**

B227283-BSD1

W-17

Samples analyzed for Ortho phosphate were not filtered within 15 minutes of sampling.

Analyte & Samples(s) Qualified:**Orthophosphate as P**

19D0106-01[V-103 (MW)], 19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3], B227283-DUP1, B227283-DUP2, B227283-MS1, B227283-MS2

SW-846 8260C**Qualifications:****L-02**

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:**Diethyl Ether**

B227208-BS1, B227208-BSD1

Vinyl Chloride

B227208-BS1, B227208-BSD1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:**1,1,1,2-Tetrachloroethane**

19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3], B227208-BLK1, B227208-BS1, B227208-BSD1, S034384-CCV1

Acetone

19D0106-01[V-103 (MW)], 19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3], B227205-BLK1, B227205-BS1, B227205-BSD1, B227208-BLK1, B227208-BS1, B227208-BSD1, S034302-CCV1, S034384-CCV1

RL-07

Elevated reporting limit based on lowest point in calibration.

MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:**1,2,3-Trichlorobenzene**

19D0106-01[V-103 (MW)], 19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3]

1,2,4-Trichlorobenzene

19D0106-01[V-103 (MW)], 19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3]

1,2-Dibromo-3-chloropropane (DBP)

19D0106-01[V-103 (MW)], 19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3]

Carbon Disulfide

19D0106-01[V-103 (MW)], 19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3]

Methylene Chloride

19D0106-01[V-103 (MW)], 19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3]

Naphthalene

19D0106-01[V-103 (MW)], 19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3]

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:**2,2-Dichloropropane**

19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3], B227208-BLK1, B227208-BS1, B227208-BSD1, S034384-CCV1

2-Butanone (MEK)

19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3], B227208-BLK1, B227208-BS1, B227208-BSD1, S034384-CCV1

V-16

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:**1,4-Dioxane**

19D0106-01[V-103 (MW)], 19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3], B227205-BLK1, B227205-BS1, B227205-BSD1, B227208-BLK1, B227208-BS1, B227208-BSD1, S034302-CCV1, S034384-CCV1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:**Diethyl Ether**

B227208-BS1, B227208-BSD1, S034384-CCV1

Styrene

B227205-BS1, B227205-BSD1, B227208-BS1, B227208-BSD1, S034302-CCV1, S034384-CCV1

Vinyl Chloride

B227208-BS1, B227208-BSD1, S034384-CCV1

SW-846 8270D**Qualifications:****R-05**

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:**4-Chloroaniline**

19D0106-04[MW-3], B227443-BLK1, B227443-BS1, B227443-BSD1

Phenol

19D0106-04[MW-3], B227443-BLK1, B227443-BS1, B227443-BSD1

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:**2,4-Dinitrophenol**

19D0106-01[V-103 (MW)], 19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], B227443-BLK1, B227443-BS1, B227443-BSD1, S034390-CCV1

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:**4-Chloroaniline**

19D0106-01[V-103 (MW)], 19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3], B227443-BLK1, B227443-BS1, B227443-BSD1, S034390-CCV1, S034392-CCV1

Aniline

19D0106-01[V-103 (MW)], 19D0106-02[V-106 (MW)], 19D0106-03[V-104 (MW)], 19D0106-04[MW-3], B227443-BLK1, B227443-BS1, B227443-BSD1, S034390-CCV1, S034392-CCV1

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SW-846 8260C

Laboratory control sample recoveries for required MCP Data Enhancement 8260 compounds were all within limits specified by the method except for "difficult analytes" where recovery control limits of 40-160% are used and/or unless otherwise listed in this narrative. Difficult analytes: MIBK, MEK, acetone, 1,4-dioxane, chloromethane, dichlorodifluoromethane, 2-hexanone, and bromomethane.

SW-846 8270D

Laboratory control sample recoveries for required MCP Data Enhancement 8270 compounds were all within control limits specified by the method, 40-140% for base/neutrals and 30-130% for acids except for "difficult analytes" listed below and/or otherwise listed in this narrative. Difficult analytes limits are 15 and 140%: 2,4-dinitrophenol, 4-chloroaniline, 4-nitrophenol, and phenol.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-103 (MW)

Sampled: 4/2/2019 07:30

Sample ID: 19D0106-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1	R-05	SW-846 8260C	4/3/19	4/3/19 15:39	EEH
tert-Amyl Methyl Ether (TAME)	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Bromoform	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
2-Butanone (MEK)	ND	10	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-103 (MW)

Sampled: 4/2/2019 07:30

Sample ID: 19D0106-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.60	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 15:39	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Naphthalene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 15:39	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,2,4-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	4/3/19	4/3/19 15:39	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	85.8	70-130	4/3/19 15:39
Toluene-d8	99.0	70-130	4/3/19 15:39
4-Bromofluorobenzene	98.7	70-130	4/3/19 15:39

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-103 (MW)

Sampled: 4/2/2019 07:30

Sample ID: 19D0106-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Acenaphthylene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Acetophenone	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Aniline	ND	4.9	µg/L	1	V-34	SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Anthracene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Benzo(a)anthracene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Benzo(a)pyrene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Benzo(b)fluoranthene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Benzo(g,h,i)perylene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Benzo(k)fluoranthene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Bis(2-chloroethoxy)methane	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Bis(2-chloroethyl)ether	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Bis(2-chloroisopropyl)ether	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Bis(2-Ethylhexyl)phthalate	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
4-Bromophenylphenylether	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Butylbenzylphthalate	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
4-Chloroaniline	ND	9.8	µg/L	1	V-34	SW-846 8270D	4/4/19	4/5/19 17:43	BGL
2-Chloronaphthalene	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
2-Chlorophenol	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Chrysene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Dibenz(a,h)anthracene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Dibenzofuran	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Di-n-butylphthalate	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
1,2-Dichlorobenzene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
1,3-Dichlorobenzene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
1,4-Dichlorobenzene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
3,3-Dichlorobenzidine	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
2,4-Dichlorophenol	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Diethylphthalate	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
2,4-Dimethylphenol	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Dimethylphthalate	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
2,4-Dinitrophenol	ND	9.8	µg/L	1	V-05	SW-846 8270D	4/4/19	4/5/19 17:43	BGL
2,4-Dinitrotoluene	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
2,6-Dinitrotoluene	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Di-n-octylphthalate	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
1,2-Diphenylhydrazine/Azobenzene	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Fluoranthene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Fluorene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Hexachlorobenzene	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Hexachlorobutadiene	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Hexachloroethane	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Indeno(1,2,3-cd)pyrene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Isophorone	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
2-Methylnaphthalene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-103 (MW)

Sampled: 4/2/2019 07:30

Sample ID: 19D0106-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
3/4-Methylphenol	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Naphthalene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Nitrobenzene	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
2-Nitrophenol	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
4-Nitrophenol	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Pentachlorophenol	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Phenanthrene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Phenol	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Pyrene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
1,2,4-Trichlorobenzene	ND	4.9	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
2,4,5-Trichlorophenol	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
2,4,6-Trichlorophenol	ND	9.8	µg/L	1		SW-846 8270D	4/4/19	4/5/19 17:43	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorophenol		47.1	15-110					4/5/19 17:43	
Phenol-d6		33.7	15-110					4/5/19 17:43	
Nitrobenzene-d5		70.7	30-130					4/5/19 17:43	
2-Fluorobiphenyl		73.4	30-130					4/5/19 17:43	
2,4,6-Tribromophenol		71.9	15-110					4/5/19 17:43	
p-Terphenyl-d14		86.7	30-130					4/5/19 17:43	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-103 (MW)

Sampled: 4/2/2019 07:30

Sample ID: 19D0106-01

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:25	AYH
Aroclor-1221 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:25	AYH
Aroclor-1232 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:25	AYH
Aroclor-1242 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:25	AYH
Aroclor-1248 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:25	AYH
Aroclor-1254 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:25	AYH
Aroclor-1260 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:25	AYH
Aroclor-1262 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:25	AYH
Aroclor-1268 [1]	ND	0.17	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:25	AYH
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		81.1	30-150					4/8/19 10:25	
Decachlorobiphenyl [2]		73.6	30-150					4/8/19 10:25	
Tetrachloro-m-xylene [1]		75.6	30-150					4/8/19 10:25	
Tetrachloro-m-xylene [2]		73.6	30-150					4/8/19 10:25	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-103 (MW)

Sampled: 4/2/2019 07:30

Sample ID: 19D0106-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Arsenic	ND	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Barium	14	10	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Beryllium	ND	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Cadmium	ND	0.50	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Chromium	ND	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Copper	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Lead	ND	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Manganese	91	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	4/8/19	4/8/19 14:33	EJB
Nickel	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Selenium	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Silver	ND	0.50	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Thallium	ND	0.20	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Vanadium	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW
Zinc	ND	10	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:12	QNW

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-103 (MW)

Sampled: 4/2/2019 07:30

Sample ID: 19D0106-01

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	0.74	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 11:17	QNW

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-103 (MW)

Sampled: 4/2/2019 07:30

Sample ID: 19D0106-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	ND	0.30	mg/L	1		SM19-22 4500 NH3 C	4/2/19	4/3/19 10:00	EC
Chloride	230	10	mg/L	10		EPA 300.0	4/9/19	4/9/19 5:48	MMH
Nitrate as N	1.7	0.10	mg/L	1		EPA 300.0	4/3/19	4/3/19 15:48	IS
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	4/3/19	4/3/19 15:48	IS
Orthophosphate as P	ND	0.050	mg/L	1	W-17	SM 21-22 4500 P E	4/2/19	4/2/19 18:30	IS
Phosphorus, Total	0.14	0.062	mg/L	1.25		SM 21-22 4500 P E	4/7/19	4/7/19 15:06	AIA
Total Kjeldahl Nitrogen	ND	1.0	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/3/19	4/4/19 9:45	EC
Total Nitrogen	1.7	0.050	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/9/19	4/9/19 7:21	LL

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-106 (MW)

Sampled: 4/2/2019 09:30

Sample ID: 19D0106-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1	R-05	SW-846 8260C	4/4/19	4/5/19 6:32	EEH
tert-Amyl Methyl Ether (TAME)	6.4	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Bromoform	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
2-Butanone (MEK)	ND	10	µg/L	1	V-05	SW-846 8260C	4/4/19	4/5/19 6:32	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1	V-05	SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-106 (MW)

Sampled: 4/2/2019 09:30

Sample ID: 19D0106-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.60	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Methyl tert-Butyl Ether (MTBE)	14	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 6:32	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Naphthalene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 6:32	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1	R-05	SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,2,4-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:32	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	92.0	70-130	4/5/19 6:32
Toluene-d8	98.3	70-130	4/5/19 6:32
4-Bromofluorobenzene	100	70-130	4/5/19 6:32

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-106 (MW)

Sampled: 4/2/2019 09:30

Sample ID: 19D0106-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Acenaphthylene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Acetophenone	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Aniline	ND	6.1	µg/L	1	V-34	SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Anthracene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Benzo(a)anthracene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Benzo(a)pyrene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Benzo(b)fluoranthene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Benzo(g,h,i)perylene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Benzo(k)fluoranthene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Bis(2-chloroethoxy)methane	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Bis(2-chloroethyl)ether	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Bis(2-chloroisopropyl)ether	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Bis(2-Ethylhexyl)phthalate	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
4-Bromophenylphenylether	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Butylbenzylphthalate	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
4-Chloroaniline	ND	12	µg/L	1	V-34	SW-846 8270D	4/4/19	4/5/19 18:09	BGL
2-Chloronaphthalene	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
2-Chlorophenol	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Chrysene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Dibenz(a,h)anthracene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Dibenzofuran	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Di-n-butylphthalate	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
1,2-Dichlorobenzene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
1,3-Dichlorobenzene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
1,4-Dichlorobenzene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
3,3-Dichlorobenzidine	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
2,4-Dichlorophenol	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Diethylphthalate	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
2,4-Dimethylphenol	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Dimethylphthalate	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
2,4-Dinitrophenol	ND	12	µg/L	1	V-05	SW-846 8270D	4/4/19	4/5/19 18:09	BGL
2,4-Dinitrotoluene	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
2,6-Dinitrotoluene	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Di-n-octylphthalate	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
1,2-Diphenylhydrazine/Azobenzene	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Fluoranthene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Fluorene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Hexachlorobenzene	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Hexachlorobutadiene	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Hexachloroethane	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Indeno(1,2,3-cd)pyrene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Isophorone	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
2-Methylnaphthalene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-106 (MW)

Sampled: 4/2/2019 09:30

Sample ID: 19D0106-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
3/4-Methylphenol	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Naphthalene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Nitrobenzene	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
2-Nitrophenol	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
4-Nitrophenol	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Pentachlorophenol	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Phenanthrene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Phenol	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Pyrene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
1,2,4-Trichlorobenzene	ND	6.1	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
2,4,5-Trichlorophenol	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
2,4,6-Trichlorophenol	ND	12	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:09	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorophenol		51.5	15-110					4/5/19 18:09	
Phenol-d6		39.8	15-110					4/5/19 18:09	
Nitrobenzene-d5		73.1	30-130					4/5/19 18:09	
2-Fluorobiphenyl		77.0	30-130					4/5/19 18:09	
2,4,6-Tribromophenol		76.2	15-110					4/5/19 18:09	
p-Terphenyl-d14		89.7	30-130					4/5/19 18:09	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-106 (MW)

Sampled: 4/2/2019 09:30

Sample ID: 19D0106-02

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:38	AYH
Aroclor-1221 [1]	ND	0.12	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:38	AYH
Aroclor-1232 [1]	ND	0.12	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:38	AYH
Aroclor-1242 [1]	ND	0.12	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:38	AYH
Aroclor-1248 [1]	ND	0.12	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:38	AYH
Aroclor-1254 [1]	ND	0.12	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:38	AYH
Aroclor-1260 [1]	ND	0.12	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:38	AYH
Aroclor-1262 [1]	ND	0.12	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:38	AYH
Aroclor-1268 [1]	ND	0.12	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:38	AYH
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		81.8	30-150					4/8/19 10:38	
Decachlorobiphenyl [2]		74.0	30-150					4/8/19 10:38	
Tetrachloro-m-xylene [1]		77.2	30-150					4/8/19 10:38	
Tetrachloro-m-xylene [2]		74.6	30-150					4/8/19 10:38	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-106 (MW)

Sampled: 4/2/2019 09:30

Sample ID: 19D0106-02

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 12:58	QNW
Arsenic	1.6	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 12:58	QNW
Barium	190	50	µg/L	5		SW-846 6020B	4/5/19	4/9/19 14:16	QNW
Beryllium	ND	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 12:58	QNW
Cadmium	3.0	0.50	µg/L	1		SW-846 6020B	4/5/19	4/8/19 12:58	QNW
Chromium	2.8	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 12:58	QNW
Copper	6.9	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 12:58	QNW
Lead	1.6	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 12:58	QNW
Manganese	5400	200	µg/L	200		SW-846 6020B	4/5/19	4/9/19 15:08	QNW
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	4/8/19	4/8/19 14:22	EJB
Nickel	110	25	µg/L	5		SW-846 6020B	4/5/19	4/9/19 14:16	QNW
Selenium	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 12:58	QNW
Silver	ND	0.50	µg/L	1		SW-846 6020B	4/5/19	4/8/19 12:58	QNW
Thallium	ND	0.20	µg/L	1		SW-846 6020B	4/5/19	4/8/19 12:58	QNW
Vanadium	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 12:58	QNW
Zinc	33	10	µg/L	1		SW-846 6020B	4/5/19	4/8/19 12:58	QNW

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-106 (MW)

Sampled: 4/2/2019 09:30

Sample ID: 19D0106-02

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	1.0	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 11:21	QNW
Nickel	110	10	µg/L	2		SW-846 6020B	4/5/19	4/23/19 9:09	MJH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-106 (MW)

Sampled: 4/2/2019 09:30

Sample ID: 19D0106-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	2.0	0.30	mg/L	1		SM19-22 4500 NH3 C	4/5/19	4/6/19 11:58	KMV
Chloride	210	10	mg/L	10		EPA 300.0	4/9/19	4/9/19 6:03	MMH
Nitrate as N	35	1.0	mg/L	10		EPA 300.0	4/3/19	4/3/19 16:33	IS
Nitrite as N	0.302	0.100	mg/L	1		EPA 300.0	4/3/19	4/3/19 16:18	IS
Orthophosphate as P	ND	0.050	mg/L	1	W-17	SM 21-22 4500 P E	4/2/19	4/2/19 18:30	IS
Phosphorus, Total	0.093	0.062	mg/L	1.25		SM 21-22 4500 P E	4/7/19	4/7/19 15:06	AIA
Total Kjeldahl Nitrogen	4.0	1.0	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/3/19	4/4/19 9:45	EC
Total Nitrogen	39	0.050	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/8/19	4/8/19 14:50	LL

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-104 (MW)

Sampled: 4/2/2019 12:15

Sample ID: 19D0106-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1	R-05	SW-846 8260C	4/4/19	4/5/19 6:59	EEH
tert-Amyl Methyl Ether (TAME)	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Bromoform	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
2-Butanone (MEK)	ND	10	µg/L	1	V-05	SW-846 8260C	4/4/19	4/5/19 6:59	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1	V-05	SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-104 (MW)

Sampled: 4/2/2019 12:15

Sample ID: 19D0106-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.60	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 6:59	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Naphthalene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 6:59	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1	R-05	SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,2,4-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 6:59	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	92.8	70-130	4/5/19 6:59
Toluene-d8	100	70-130	4/5/19 6:59
4-Bromofluorobenzene	102	70-130	4/5/19 6:59

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-104 (MW)

Sampled: 4/2/2019 12:15

Sample ID: 19D0106-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Acenaphthylene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Acetophenone	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Aniline	ND	5.5	µg/L	1	V-34	SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Anthracene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Benzo(a)anthracene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Benzo(a)pyrene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Benzo(b)fluoranthene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Benzo(g,h,i)perylene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Benzo(k)fluoranthene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Bis(2-chloroethoxy)methane	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Bis(2-chloroethyl)ether	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Bis(2-chloroisopropyl)ether	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Bis(2-Ethylhexyl)phthalate	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
4-Bromophenylphenylether	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Butylbenzylphthalate	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
4-Chloroaniline	ND	11	µg/L	1	V-34	SW-846 8270D	4/4/19	4/5/19 18:34	BGL
2-Chloronaphthalene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
2-Chlorophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Chrysene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Dibenz(a,h)anthracene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Dibenzofuran	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Di-n-butylphthalate	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
1,2-Dichlorobenzene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
1,3-Dichlorobenzene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
1,4-Dichlorobenzene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
3,3-Dichlorobenzidine	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
2,4-Dichlorophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Diethylphthalate	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
2,4-Dimethylphenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Dimethylphthalate	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
2,4-Dinitrophenol	ND	11	µg/L	1	V-05	SW-846 8270D	4/4/19	4/5/19 18:34	BGL
2,4-Dinitrotoluene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
2,6-Dinitrotoluene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Di-n-octylphthalate	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
1,2-Diphenylhydrazine/Azobenzene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Fluoranthene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Fluorene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Hexachlorobenzene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Hexachlorobutadiene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Hexachloroethane	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Indeno(1,2,3-cd)pyrene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Isophorone	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
2-Methylnaphthalene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-104 (MW)

Sampled: 4/2/2019 12:15

Sample ID: 19D0106-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
3/4-Methylphenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Naphthalene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Nitrobenzene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
2-Nitrophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
4-Nitrophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Pentachlorophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Phenanthrene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Phenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
Pyrene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
1,2,4-Trichlorobenzene	ND	5.5	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
2,4,5-Trichlorophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL
2,4,6-Trichlorophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/5/19 18:34	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual
2-Fluorophenol	47.9	15-110	
Phenol-d6	35.0	15-110	
Nitrobenzene-d5	72.0	30-130	
2-Fluorobiphenyl	75.9	30-130	
2,4,6-Tribromophenol	74.9	15-110	
p-Terphenyl-d14	88.2	30-130	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-104 (MW)

Sampled: 4/2/2019 12:15

Sample ID: 19D0106-03

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:51	AYH
Aroclor-1221 [1]	ND	0.11	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:51	AYH
Aroclor-1232 [1]	ND	0.11	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:51	AYH
Aroclor-1242 [1]	ND	0.11	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:51	AYH
Aroclor-1248 [1]	ND	0.11	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:51	AYH
Aroclor-1254 [1]	ND	0.11	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:51	AYH
Aroclor-1260 [1]	ND	0.11	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:51	AYH
Aroclor-1262 [1]	ND	0.11	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:51	AYH
Aroclor-1268 [1]	ND	0.11	µg/L	1		SW-846 8082A	4/5/19	4/8/19 10:51	AYH
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		81.1	30-150					4/8/19 10:51	
Decachlorobiphenyl [2]		72.8	30-150					4/8/19 10:51	
Tetrachloro-m-xylene [1]		82.5	30-150					4/8/19 10:51	
Tetrachloro-m-xylene [2]		79.7	30-150					4/8/19 10:51	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-104 (MW)

Sampled: 4/2/2019 12:15

Sample ID: 19D0106-03

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Arsenic	0.50	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Barium	14	10	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Beryllium	ND	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Cadmium	ND	0.50	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Chromium	ND	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Copper	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Lead	ND	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Manganese	95	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	4/8/19	4/8/19 14:35	EJB
Nickel	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Selenium	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Silver	ND	0.50	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Thallium	ND	0.20	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Vanadium	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW
Zinc	ND	10	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:13	QNW

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-104 (MW)

Sampled: 4/2/2019 12:15

Sample ID: 19D0106-03

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	0.79	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:34	QNW

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: V-104 (MW)

Sampled: 4/2/2019 12:15

Sample ID: 19D0106-03

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	ND	0.30	mg/L	1		SM19-22 4500 NH3 C	4/5/19	4/6/19 11:58	KMV
Chloride	26	1.0	mg/L	1	MS-07	EPA 300.0	4/9/19	4/9/19 6:18	MMH
Nitrate as N	2.1	0.10	mg/L	1		EPA 300.0	4/3/19	4/3/19 16:48	IS
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	4/3/19	4/3/19 16:48	IS
Orthophosphate as P	ND	0.050	mg/L	1	W-17	SM 21-22 4500 P E	4/2/19	4/2/19 18:30	IS
Phosphorus, Total	ND	0.062	mg/L	1.25		SM 21-22 4500 P E	4/7/19	4/7/19 15:06	AIA
Total Kjeldahl Nitrogen	2.0	1.0	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/3/19	4/4/19 9:45	EC
Total Nitrogen	4.1	0.050	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/8/19	4/8/19 14:50	LL

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: MW-3

Sampled: 4/2/2019 14:35

Sample ID: 19D0106-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1	R-05	SW-846 8260C	4/4/19	4/5/19 7:26	EEH
tert-Amyl Methyl Ether (TAME)	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Bromoform	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
2-Butanone (MEK)	ND	10	µg/L	1	V-05	SW-846 8260C	4/4/19	4/5/19 7:26	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1	V-05	SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: MW-3

Sampled: 4/2/2019 14:35

Sample ID: 19D0106-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.60	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 7:26	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Naphthalene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 7:26	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1	R-05	SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,2,4-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	4/4/19	4/5/19 7:26	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	90.8	70-130	4/5/19 7:26
Toluene-d8	99.1	70-130	4/5/19 7:26
4-Bromofluorobenzene	102	70-130	4/5/19 7:26

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: MW-3

Sampled: 4/2/2019 14:35

Sample ID: 19D0106-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Acenaphthylene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Acetophenone	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Aniline	ND	5.3	µg/L	1	V-34	SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Anthracene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Benzo(a)anthracene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Benzo(a)pyrene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Benzo(b)fluoranthene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Benzo(g,h,i)perylene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Benzo(k)fluoranthene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Bis(2-chloroethoxy)methane	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Bis(2-chloroethyl)ether	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Bis(2-chloroisopropyl)ether	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Bis(2-Ethylhexyl)phthalate	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
4-Bromophenylphenylether	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Butylbenzylphthalate	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
4-Chloroaniline	ND	11	µg/L	1	R-05, V-34	SW-846 8270D	4/4/19	4/6/19 17:13	BGL
2-Chloronaphthalene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
2-Chlorophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Chrysene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Dibenz(a,h)anthracene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Dibenzofuran	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Di-n-butylphthalate	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
1,2-Dichlorobenzene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
1,3-Dichlorobenzene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
1,4-Dichlorobenzene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
3,3-Dichlorobenzidine	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
2,4-Dichlorophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Diethylphthalate	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
2,4-Dimethylphenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Dimethylphthalate	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
2,4-Dinitrophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
2,4-Dinitrotoluene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
2,6-Dinitrotoluene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Di-n-octylphthalate	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
1,2-Diphenylhydrazine/Azobenzene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Fluoranthene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Fluorene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Hexachlorobenzene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Hexachlorobutadiene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Hexachloroethane	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Indeno(1,2,3-cd)pyrene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Isophorone	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
2-Methylnaphthalene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: MW-3

Sampled: 4/2/2019 14:35

Sample ID: 19D0106-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
3/4-Methylphenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Naphthalene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Nitrobenzene	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
2-Nitrophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
4-Nitrophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Pentachlorophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Phenanthrene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Phenol	ND	11	µg/L	1	R-05	SW-846 8270D	4/4/19	4/6/19 17:13	BGL
Pyrene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
1,2,4-Trichlorobenzene	ND	5.3	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
2,4,5-Trichlorophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL
2,4,6-Trichlorophenol	ND	11	µg/L	1		SW-846 8270D	4/4/19	4/6/19 17:13	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual
2-Fluorophenol	42.7	15-110	
Phenol-d6	32.0	15-110	
Nitrobenzene-d5	70.7	30-130	
2-Fluorobiphenyl	67.9	30-130	
2,4,6-Tribromophenol	78.4	15-110	
p-Terphenyl-d14	83.7	30-130	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: MW-3

Sampled: 4/2/2019 14:35

Sample ID: 19D0106-04

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.093	µg/L	1		SW-846 8082A	4/5/19	4/8/19 11:03	AYH
Aroclor-1221 [1]	ND	0.093	µg/L	1		SW-846 8082A	4/5/19	4/8/19 11:03	AYH
Aroclor-1232 [1]	ND	0.093	µg/L	1		SW-846 8082A	4/5/19	4/8/19 11:03	AYH
Aroclor-1242 [1]	ND	0.093	µg/L	1		SW-846 8082A	4/5/19	4/8/19 11:03	AYH
Aroclor-1248 [1]	ND	0.093	µg/L	1		SW-846 8082A	4/5/19	4/8/19 11:03	AYH
Aroclor-1254 [1]	ND	0.093	µg/L	1		SW-846 8082A	4/5/19	4/8/19 11:03	AYH
Aroclor-1260 [1]	ND	0.093	µg/L	1		SW-846 8082A	4/5/19	4/8/19 11:03	AYH
Aroclor-1262 [1]	ND	0.093	µg/L	1		SW-846 8082A	4/5/19	4/8/19 11:03	AYH
Aroclor-1268 [1]	ND	0.093	µg/L	1		SW-846 8082A	4/5/19	4/8/19 11:03	AYH
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]	74.0		30-150				4/8/19 11:03		
Decachlorobiphenyl [2]	67.6		30-150				4/8/19 11:03		
Tetrachloro-m-xylene [1]	83.5		30-150				4/8/19 11:03		
Tetrachloro-m-xylene [2]	80.4		30-150				4/8/19 11:03		

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: MW-3

Sampled: 4/2/2019 14:35

Sample ID: 19D0106-04

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Arsenic	ND	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Barium	13	10	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Beryllium	ND	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Cadmium	ND	0.50	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Chromium	ND	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Copper	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Lead	ND	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Manganese	73	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	4/8/19	4/8/19 14:41	EJB
Nickel	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Selenium	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Silver	ND	0.50	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Thallium	ND	0.20	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Vanadium	ND	5.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW
Zinc	ND	10	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:17	QNW

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: MW-3

Sampled: 4/2/2019 14:35

Sample ID: 19D0106-04

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	0.74	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 13:37	QNW

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Project Location: Wayland, MA

Sample Description:

Work Order: 19D0106

Date Received: 4/2/2019

Field Sample #: MW-3

Sampled: 4/2/2019 14:35

Sample ID: 19D0106-04

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	ND	0.30	mg/L	1		SM19-22 4500 NH3 C	4/5/19	4/6/19 11:58	KMV
Chloride	120	10	mg/L	10		EPA 300.0	4/9/19	4/9/19 7:04	MMH
Nitrate as N	1.5	0.10	mg/L	1		EPA 300.0	4/3/19	4/3/19 17:49	IS
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	4/3/19	4/3/19 17:49	IS
Orthophosphate as P	ND	0.050	mg/L	1	W-17	SM 21-22 4500 P E	4/2/19	4/2/19 18:30	IS
Phosphorus, Total	ND	0.062	mg/L	1.25		SM 21-22 4500 P E	4/7/19	4/7/19 15:06	AIA
Total Kjeldahl Nitrogen	2.0	1.0	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/3/19	4/4/19 9:45	EC
Total Nitrogen	3.5	0.050	mg/L	1		SM19-22 4500-N Org B,C-NH3 C	4/8/19	4/8/19 14:50	LL

Sample Extraction Data

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-01 [V-103 (MW)]	B227277	10.0	10.0	04/03/19
19D0106-02 [V-106 (MW)]	B227277	10.0	10.0	04/03/19
19D0106-03 [V-104 (MW)]	B227277	10.0	10.0	04/03/19
19D0106-04 [MW-3]	B227277	10.0	10.0	04/03/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-01 [V-103 (MW)]	B227612	10.0	10.0	04/09/19
19D0106-02 [V-106 (MW)]	B227612	10.0	10.0	04/09/19
19D0106-03 [V-104 (MW)]	B227612	10.0	10.0	04/09/19
19D0106-04 [MW-3]	B227612	10.0	10.0	04/09/19

SM 21-22 4500 P E

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-01 [V-103 (MW)]	B227283	50.0	50.0	04/02/19
19D0106-02 [V-106 (MW)]	B227283	50.0	50.0	04/02/19
19D0106-03 [V-104 (MW)]	B227283	50.0	50.0	04/02/19
19D0106-04 [MW-3]	B227283	50.0	50.0	04/02/19

SM 21-22 4500 P E

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-01 [V-103 (MW)]	B227568	50.0	50.0	04/07/19
19D0106-02 [V-106 (MW)]	B227568	50.0	50.0	04/07/19
19D0106-03 [V-104 (MW)]	B227568	50.0	50.0	04/07/19
19D0106-04 [MW-3]	B227568	50.0	50.0	04/07/19

SM19-22 4500 NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-01 [V-103 (MW)]	B227200	100	100	04/02/19

SM19-22 4500 NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-02 [V-106 (MW)]	B227529	100	100	04/05/19
19D0106-03 [V-104 (MW)]	B227529	100	100	04/05/19
19D0106-04 [MW-3]	B227529	100	100	04/05/19

SM19-22 4500-N Org B,C-NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-01 [V-103 (MW)]	B227312	25.0	25.0	04/03/19
19D0106-02 [V-106 (MW)]	B227312	25.0	25.0	04/03/19
19D0106-03 [V-104 (MW)]	B227312	25.0	25.0	04/03/19

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Sample Extraction Data

SM19-22 4500-N Org B,C-NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-04 [MW-3]	B227312	25.0	25.0	04/03/19

SM19-22 4500-N Org B,C-NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-02 [V-106 (MW)]	B227705	50.0	50.0	04/08/19
19D0106-03 [V-104 (MW)]	B227705	50.0	50.0	04/08/19
19D0106-04 [MW-3]	B227705	50.0	50.0	04/08/19

SM19-22 4500-N Org B,C-NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-01 [V-103 (MW)]	B227750	50.0	50.0	04/09/19

Prep Method: SW-846 3005A-SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-01 [V-103 (MW)]	B227554	50.0	50.0	04/05/19
19D0106-02 [V-106 (MW)]	B227554	50.0	50.0	04/05/19
19D0106-03 [V-104 (MW)]	B227554	50.0	50.0	04/05/19
19D0106-04 [MW-3]	B227554	50.0	50.0	04/05/19

Prep Method: SW-846 3005A Dissolved-SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-01 [V-103 (MW)]	B227576	10.0	10.0	04/05/19
19D0106-02 [V-106 (MW)]	B227576	10.0	10.0	04/05/19
19D0106-03 [V-104 (MW)]	B227576	10.0	10.0	04/05/19
19D0106-04 [MW-3]	B227576	10.0	10.0	04/05/19

Prep Method: SW-846 7470A Prep-SW-846 7470A

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-01 [V-103 (MW)]	B227561	6.00	6.00	04/08/19
19D0106-02 [V-106 (MW)]	B227561	6.00	6.00	04/08/19
19D0106-03 [V-104 (MW)]	B227561	6.00	6.00	04/08/19
19D0106-04 [MW-3]	B227561	6.00	6.00	04/08/19

Prep Method: SW-846 3510C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-01 [V-103 (MW)]	B227544	120	2.00	04/05/19
19D0106-02 [V-106 (MW)]	B227544	215	2.50	04/05/19
19D0106-03 [V-104 (MW)]	B227544	235	2.50	04/05/19
19D0106-04 [MW-3]	B227544	270	2.50	04/05/19

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Sample Extraction Data

Prep Method: SW-846 5030B-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-01 [V-103 (MW)]	B227205	5	5.00	04/03/19

Prep Method: SW-846 5030B-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-02 [V-106 (MW)]	B227208	5	5.00	04/04/19
19D0106-03 [V-104 (MW)]	B227208	5	5.00	04/04/19
19D0106-04 [MW-3]	B227208	5	5.00	04/04/19

Prep Method: SW-846 3510C-SW-846 8270D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0106-01 [V-103 (MW)]	B227443	1020	1.00	04/04/19
19D0106-02 [V-106 (MW)]	B227443	820	1.00	04/04/19
19D0106-03 [V-104 (MW)]	B227443	910	1.00	04/04/19
19D0106-04 [MW-3]	B227443	940	1.00	04/04/19

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227205 - SW-846 5030B

Blank (B227205-BLK1)

Prepared: 04/02/19 Analyzed: 04/03/19

Acetone	ND	10	µg/L							R-05
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
Bromobenzene	ND	1.0	µg/L							
Bromochloromethane	ND	1.0	µg/L							
Bromodichloromethane	ND	1.0	µg/L							
Bromoform	ND	1.0	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	10	µg/L							
n-Butylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	1.0	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	1.0	µg/L							
Chlorobenzene	ND	1.0	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	2.0	µg/L							
Chloroform	ND	2.0	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	1.0	µg/L							
4-Chlorotoluene	ND	1.0	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	1.0	µg/L							
1,4-Dichlorobenzene	ND	1.0	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L							
1,1-Dichloroethane	ND	1.0	µg/L							
1,2-Dichloroethane	ND	1.0	µg/L							
1,1-Dichloroethylene	ND	1.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
trans-1,2-Dichloroethylene	ND	1.0	µg/L							
1,2-Dichloropropane	ND	1.0	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	1.0	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.40	µg/L							
trans-1,3-Dichloropropene	ND	0.40	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	50	µg/L							V-16
Ethylbenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	0.60	µg/L							
2-Hexanone (MBK)	ND	10	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							
Methylene Chloride	ND	5.0	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L							
Naphthalene	ND	2.0	µg/L							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227205 - SW-846 5030B

Blank (B227205-BLK1)

Prepared: 04/02/19 Analyzed: 04/03/19

n-Propylbenzene	ND	1.0	µg/L							
Styrene	ND	1.0	µg/L							
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L							
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L							
Tetrachloroethylene	ND	1.0	µg/L							
Tetrahydrofuran	ND	2.0	µg/L							
Toluene	ND	1.0	µg/L							
1,2,3-Trichlorobenzene	ND	2.0	µg/L							
1,2,4-Trichlorobenzene	ND	1.0	µg/L							
1,1,1-Trichloroethane	ND	1.0	µg/L							
1,1,2-Trichloroethane	ND	1.0	µg/L							
Trichloroethylene	ND	1.0	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L							
1,2,3-Trichloropropane	ND	2.0	µg/L							
1,2,4-Trimethylbenzene	ND	1.0	µg/L							
1,3,5-Trimethylbenzene	ND	1.0	µg/L							
Vinyl Chloride	ND	2.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	1.0	µg/L							
Surrogate: 1,2-Dichloroethane-d4	22.0		µg/L	25.0		87.8	70-130			
Surrogate: Toluene-d8	24.6		µg/L	25.0		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	24.6		µg/L	25.0		98.4	70-130			

LCS (B227205-BS1)

Prepared: 04/02/19 Analyzed: 04/03/19

Acetone	148	10	µg/L	100		148	40-160			L-14, R-05 †
tert-Amyl Methyl Ether (TAME)	9.79	0.50	µg/L	10.0		97.9	70-130			
Benzene	9.61	1.0	µg/L	10.0		96.1	70-130			
Bromobenzene	11.9	1.0	µg/L	10.0		119	70-130			
Bromochloromethane	10.1	1.0	µg/L	10.0		101	70-130			
Bromodichloromethane	10.4	1.0	µg/L	10.0		104	70-130			
Bromoform	12.3	1.0	µg/L	10.0		123	70-130			
Bromomethane	7.28	2.0	µg/L	10.0		72.8	40-160			†
2-Butanone (MEK)	92.0	10	µg/L	100		92.0	40-160			†
n-Butylbenzene	11.0	1.0	µg/L	10.0		110	70-130			
sec-Butylbenzene	11.2	1.0	µg/L	10.0		112	70-130			
tert-Butylbenzene	11.0	1.0	µg/L	10.0		110	70-130			
tert-Butyl Ethyl Ether (TBEE)	10.1	0.50	µg/L	10.0		101	70-130			
Carbon Disulfide	12.1	5.0	µg/L	10.0		121	70-130			
Carbon Tetrachloride	9.40	1.0	µg/L	10.0		94.0	70-130			
Chlorobenzene	12.4	1.0	µg/L	10.0		124	70-130			
Chlorodibromomethane	11.6	0.50	µg/L	10.0		116	70-130			
Chloroethane	11.2	2.0	µg/L	10.0		112	70-130			
Chloroform	9.49	2.0	µg/L	10.0		94.9	70-130			
Chloromethane	7.67	2.0	µg/L	10.0		76.7	40-160			†
2-Chlorotoluene	11.4	1.0	µg/L	10.0		114	70-130			
4-Chlorotoluene	12.2	1.0	µg/L	10.0		122	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	8.73	2.0	µg/L	10.0		87.3	70-130			
1,2-Dibromoethane (EDB)	11.1	0.50	µg/L	10.0		111	70-130			
Dibromomethane	11.0	1.0	µg/L	10.0		110	70-130			
1,2-Dichlorobenzene	12.1	1.0	µg/L	10.0		121	70-130			
1,3-Dichlorobenzene	12.2	1.0	µg/L	10.0		122	70-130			
1,4-Dichlorobenzene	11.9	1.0	µg/L	10.0		119	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227205 - SW-846 5030B										
LCS (B227205-BS1)										
Prepared: 04/02/19 Analyzed: 04/03/19										
Dichlorodifluoromethane (Freon 12)	7.25	2.0	µg/L	10.0		72.5	40-160			†
1,1-Dichloroethane	9.74	1.0	µg/L	10.0		97.4	70-130			
1,2-Dichloroethane	8.80	1.0	µg/L	10.0		88.0	70-130			
1,1-Dichloroethylene	10.8	1.0	µg/L	10.0		108	70-130			
cis-1,2-Dichloroethylene	9.70	1.0	µg/L	10.0		97.0	70-130			
trans-1,2-Dichloroethylene	10.0	1.0	µg/L	10.0		100	70-130			
1,2-Dichloropropane	9.97	1.0	µg/L	10.0		99.7	70-130			
1,3-Dichloropropane	10.6	0.50	µg/L	10.0		106	70-130			
2,2-Dichloropropane	9.60	1.0	µg/L	10.0		96.0	70-130			
1,1-Dichloropropene	8.97	0.50	µg/L	10.0		89.7	70-130			
cis-1,3-Dichloropropene	11.5	0.40	µg/L	10.0		115	70-130			
trans-1,3-Dichloropropene	11.7	0.40	µg/L	10.0		117	70-130			
Diethyl Ether	13.0	2.0	µg/L	10.0		130	70-130			
Diisopropyl Ether (DIPE)	10.0	0.50	µg/L	10.0		100	70-130			
1,4-Dioxane	92.3	50	µg/L	100		92.3	40-160			V-16 †
Ethylbenzene	11.5	1.0	µg/L	10.0		115	70-130			
Hexachlorobutadiene	12.6	0.60	µg/L	10.0		126	70-130			
2-Hexanone (MBK)	104	10	µg/L	100		104	40-160			†
Isopropylbenzene (Cumene)	11.8	1.0	µg/L	10.0		118	70-130			
p-Isopropyltoluene (p-Cymene)	11.4	1.0	µg/L	10.0		114	70-130			
Methyl tert-Butyl Ether (MTBE)	10.8	1.0	µg/L	10.0		108	70-130			
Methylene Chloride	11.5	5.0	µg/L	10.0		115	70-130			
4-Methyl-2-pentanone (MIBK)	101	10	µg/L	100		101	40-160			†
Naphthalene	9.77	2.0	µg/L	10.0		97.7	70-130			
n-Propylbenzene	11.6	1.0	µg/L	10.0		116	70-130			
Styrene	12.9	1.0	µg/L	10.0		129	70-130			V-20
1,1,1,2-Tetrachloroethane	12.6	1.0	µg/L	10.0		126	70-130			
1,1,1,2,2-Tetrachloroethane	13.0	0.50	µg/L	10.0		130	70-130			
Tetrachloroethylene	10.9	1.0	µg/L	10.0		109	70-130			
Tetrahydrofuran	10.7	2.0	µg/L	10.0		107	70-130			
Toluene	10.4	1.0	µg/L	10.0		104	70-130			
1,2,3-Trichlorobenzene	10.9	2.0	µg/L	10.0		109	70-130			
1,2,4-Trichlorobenzene	10.4	1.0	µg/L	10.0		104	70-130			
1,1,1-Trichloroethane	9.10	1.0	µg/L	10.0		91.0	70-130			
1,1,2-Trichloroethane	11.4	1.0	µg/L	10.0		114	70-130			
Trichloroethylene	10.4	1.0	µg/L	10.0		104	70-130			
Trichlorofluoromethane (Freon 11)	9.44	2.0	µg/L	10.0		94.4	70-130			
1,2,3-Trichloropropane	11.5	2.0	µg/L	10.0		115	70-130			
1,2,4-Trimethylbenzene	11.3	1.0	µg/L	10.0		113	70-130			
1,3,5-Trimethylbenzene	11.8	1.0	µg/L	10.0		118	70-130			
Vinyl Chloride	11.7	2.0	µg/L	10.0		117	70-130			
m+p Xylene	23.4	2.0	µg/L	20.0		117	70-130			
o-Xylene	12.2	1.0	µg/L	10.0		122	70-130			
Surrogate: 1,2-Dichloroethane-d4	21.9		µg/L	25.0		87.6	70-130			
Surrogate: Toluene-d8	24.4		µg/L	25.0		97.7	70-130			
Surrogate: 4-Bromofluorobenzene	26.1		µg/L	25.0		104	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227205 - SW-846 5030B

LCS Dup (B227205-BSD1)

Prepared: 04/02/19 Analyzed: 04/03/19

Acetone	109	10	µg/L	100		109	40-160	29.9 *	20	R-05 †
tert-Amyl Methyl Ether (TAME)	9.12	0.50	µg/L	10.0		91.2	70-130	7.09	20	
Benzene	9.57	1.0	µg/L	10.0		95.7	70-130	0.417	20	
Bromobenzene	11.4	1.0	µg/L	10.0		114	70-130	3.86	20	
Bromochloromethane	10.0	1.0	µg/L	10.0		100	70-130	0.199	20	
Bromodichloromethane	10.4	1.0	µg/L	10.0		104	70-130	0.577	20	
Bromoform	12.0	1.0	µg/L	10.0		120	70-130	2.47	20	
Bromomethane	7.86	2.0	µg/L	10.0		78.6	40-160	7.66	20	†
2-Butanone (MEK)	81.2	10	µg/L	100		81.2	40-160	12.5	20	†
n-Butylbenzene	10.9	1.0	µg/L	10.0		109	70-130	0.912	20	
sec-Butylbenzene	11.4	1.0	µg/L	10.0		114	70-130	1.06	20	
tert-Butylbenzene	11.1	1.0	µg/L	10.0		111	70-130	0.725	20	
tert-Butyl Ethyl Ether (TBEE)	9.46	0.50	µg/L	10.0		94.6	70-130	6.35	20	
Carbon Disulfide	11.9	5.0	µg/L	10.0		119	70-130	1.67	20	
Carbon Tetrachloride	9.35	1.0	µg/L	10.0		93.5	70-130	0.533	20	
Chlorobenzene	12.2	1.0	µg/L	10.0		122	70-130	1.30	20	
Chlorodibromomethane	11.4	0.50	µg/L	10.0		114	70-130	1.91	20	
Chloroethane	10.6	2.0	µg/L	10.0		106	70-130	5.71	20	
Chloroform	9.51	2.0	µg/L	10.0		95.1	70-130	0.211	20	
Chloromethane	7.64	2.0	µg/L	10.0		76.4	40-160	0.392	20	†
2-Chlorotoluene	11.1	1.0	µg/L	10.0		111	70-130	1.87	20	
4-Chlorotoluene	11.9	1.0	µg/L	10.0		119	70-130	2.99	20	
1,2-Dibromo-3-chloropropane (DBCP)	8.02	2.0	µg/L	10.0		80.2	70-130	8.48	20	
1,2-Dibromoethane (EDB)	10.9	0.50	µg/L	10.0		109	70-130	1.91	20	
Dibromomethane	10.8	1.0	µg/L	10.0		108	70-130	1.66	20	
1,2-Dichlorobenzene	12.0	1.0	µg/L	10.0		120	70-130	0.747	20	
1,3-Dichlorobenzene	11.9	1.0	µg/L	10.0		119	70-130	2.57	20	
1,4-Dichlorobenzene	11.7	1.0	µg/L	10.0		117	70-130	1.70	20	
Dichlorodifluoromethane (Freon 12)	7.42	2.0	µg/L	10.0		74.2	40-160	2.32	20	†
1,1-Dichloroethane	9.62	1.0	µg/L	10.0		96.2	70-130	1.24	20	
1,2-Dichloroethane	8.60	1.0	µg/L	10.0		86.0	70-130	2.30	20	
1,1-Dichloroethylene	10.8	1.0	µg/L	10.0		108	70-130	0.834	20	
cis-1,2-Dichloroethylene	9.74	1.0	µg/L	10.0		97.4	70-130	0.412	20	
trans-1,2-Dichloroethylene	9.98	1.0	µg/L	10.0		99.8	70-130	0.400	20	
1,2-Dichloropropane	9.47	1.0	µg/L	10.0		94.7	70-130	5.14	20	
1,3-Dichloropropane	10.4	0.50	µg/L	10.0		104	70-130	1.14	20	
2,2-Dichloropropane	9.59	1.0	µg/L	10.0		95.9	70-130	0.104	20	
1,1-Dichloropropene	8.94	0.50	µg/L	10.0		89.4	70-130	0.335	20	
cis-1,3-Dichloropropene	11.2	0.40	µg/L	10.0		112	70-130	1.94	20	
trans-1,3-Dichloropropene	11.8	0.40	µg/L	10.0		118	70-130	0.594	20	
Diethyl Ether	12.7	2.0	µg/L	10.0		127	70-130	2.10	20	
Diisopropyl Ether (DIPE)	9.65	0.50	µg/L	10.0		96.5	70-130	3.66	20	
1,4-Dioxane	95.5	50	µg/L	100		95.5	40-160	3.47	20	V-16 †
Ethylbenzene	11.2	1.0	µg/L	10.0		112	70-130	2.46	20	
Hexachlorobutadiene	12.4	0.60	µg/L	10.0		124	70-130	1.28	20	
2-Hexanone (MBK)	93.6	10	µg/L	100		93.6	40-160	10.4	20	†
Isopropylbenzene (Cumene)	11.6	1.0	µg/L	10.0		116	70-130	1.28	20	
p-Isopropyltoluene (p-Cymene)	11.2	1.0	µg/L	10.0		112	70-130	1.68	20	
Methyl tert-Butyl Ether (MTBE)	10.3	1.0	µg/L	10.0		103	70-130	5.12	20	
Methylene Chloride	11.5	5.0	µg/L	10.0		115	70-130	0.174	20	
4-Methyl-2-pentanone (MIBK)	94.2	10	µg/L	100		94.2	40-160	6.57	20	†
Naphthalene	9.14	2.0	µg/L	10.0		91.4	70-130	6.66	20	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227205 - SW-846 5030B

LCS Dup (B227205-BSD1)

Prepared: 04/02/19 Analyzed: 04/03/19

n-Propylbenzene	11.4	1.0	µg/L	10.0		114	70-130	1.92	20	
Styrene	12.9	1.0	µg/L	10.0		129	70-130	0.0775	20	V-20
1,1,1,2-Tetrachloroethane	12.3	1.0	µg/L	10.0		123	70-130	2.97	20	
1,1,2,2-Tetrachloroethane	12.1	0.50	µg/L	10.0		121	70-130	7.73	20	
Tetrachloroethylene	10.7	1.0	µg/L	10.0		107	70-130	1.75	20	
Tetrahydrofuran	9.26	2.0	µg/L	10.0		92.6	70-130	14.3	20	
Toluene	10.3	1.0	µg/L	10.0		103	70-130	0.677	20	
1,2,3-Trichlorobenzene	10.5	2.0	µg/L	10.0		105	70-130	3.82	20	
1,2,4-Trichlorobenzene	9.88	1.0	µg/L	10.0		98.8	70-130	5.51	20	
1,1,1-Trichloroethane	9.00	1.0	µg/L	10.0		90.0	70-130	1.10	20	
1,1,2-Trichloroethane	11.4	1.0	µg/L	10.0		114	70-130	0.00	20	
Trichloroethylene	9.95	1.0	µg/L	10.0		99.5	70-130	4.04	20	
Trichlorofluoromethane (Freon 11)	9.27	2.0	µg/L	10.0		92.7	70-130	1.82	20	
1,2,3-Trichloropropane	11.1	2.0	µg/L	10.0		111	70-130	4.07	20	
1,2,4-Trimethylbenzene	11.1	1.0	µg/L	10.0		111	70-130	1.79	20	
1,3,5-Trimethylbenzene	11.4	1.0	µg/L	10.0		114	70-130	3.18	20	
Vinyl Chloride	12.5	2.0	µg/L	10.0		125	70-130	6.70	20	
m+p Xylene	22.9	2.0	µg/L	20.0		114	70-130	2.20	20	
o-Xylene	12.0	1.0	µg/L	10.0		120	70-130	1.82	20	
Surrogate: 1,2-Dichloroethane-d4	22.2		µg/L	25.0		89.0	70-130			
Surrogate: Toluene-d8	24.8		µg/L	25.0		99.4	70-130			
Surrogate: 4-Bromofluorobenzene	25.8		µg/L	25.0		103	70-130			

Batch B227208 - SW-846 5030B

Blank (B227208-BLK1)

Prepared: 04/02/19 Analyzed: 04/05/19

Acetone	ND	10	µg/L							R-05
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
Bromobenzene	ND	1.0	µg/L							
Bromochloromethane	ND	1.0	µg/L							
Bromodichloromethane	ND	1.0	µg/L							
Bromoform	ND	1.0	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	10	µg/L							V-05
n-Butylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	1.0	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	1.0	µg/L							
Chlorobenzene	ND	1.0	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	2.0	µg/L							
Chloroform	ND	2.0	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	1.0	µg/L							
4-Chlorotoluene	ND	1.0	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	1.0	µg/L							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227208 - SW-846 5030B										
Blank (B227208-BLK1)										
					Prepared: 04/02/19 Analyzed: 04/05/19					
1,4-Dichlorobenzene	ND	1.0	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L							
1,1-Dichloroethane	ND	1.0	µg/L							
1,2-Dichloroethane	ND	1.0	µg/L							
1,1-Dichloroethylene	ND	1.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
trans-1,2-Dichloroethylene	ND	1.0	µg/L							
1,2-Dichloropropane	ND	1.0	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	1.0	µg/L							V-05
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.40	µg/L							
trans-1,3-Dichloropropene	ND	0.40	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	50	µg/L							V-16
Ethylbenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	0.60	µg/L							
2-Hexanone (MBK)	ND	10	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							
Methylene Chloride	ND	5.0	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L							
Naphthalene	ND	2.0	µg/L							
n-Propylbenzene	ND	1.0	µg/L							
Styrene	ND	1.0	µg/L							
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L							
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L							R-05
Tetrachloroethylene	ND	1.0	µg/L							
Tetrahydrofuran	ND	2.0	µg/L							
Toluene	ND	1.0	µg/L							
1,2,3-Trichlorobenzene	ND	2.0	µg/L							
1,2,4-Trichlorobenzene	ND	1.0	µg/L							
1,1,1-Trichloroethane	ND	1.0	µg/L							
1,1,2-Trichloroethane	ND	1.0	µg/L							
Trichloroethylene	ND	1.0	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L							
1,2,3-Trichloropropane	ND	2.0	µg/L							
1,2,4-Trimethylbenzene	ND	1.0	µg/L							
1,3,5-Trimethylbenzene	ND	1.0	µg/L							
Vinyl Chloride	ND	2.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	1.0	µg/L							
Surrogate: 1,2-Dichloroethane-d4	22.9		µg/L	25.0		91.4	70-130			
Surrogate: Toluene-d8	24.4		µg/L	25.0		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	25.6		µg/L	25.0		102	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227208 - SW-846 5030B

LCS (B227208-BS1)

Prepared: 04/02/19 Analyzed: 04/05/19

Acetone	118	10	µg/L	100		118	40-160			R-05 †
tert-Amyl Methyl Ether (TAME)	11.6	0.50	µg/L	10.0		116	70-130			
Benzene	9.82	1.0	µg/L	10.0		98.2	70-130			
Bromobenzene	11.8	1.0	µg/L	10.0		118	70-130			
Bromochloromethane	10.4	1.0	µg/L	10.0		104	70-130			
Bromodichloromethane	10.6	1.0	µg/L	10.0		106	70-130			
Bromoform	11.6	1.0	µg/L	10.0		116	70-130			
Bromomethane	7.42	2.0	µg/L	10.0		74.2	40-160			†
2-Butanone (MEK)	80.1	10	µg/L	100		80.1	40-160			V-05 †
n-Butylbenzene	11.4	1.0	µg/L	10.0		114	70-130			
sec-Butylbenzene	11.5	1.0	µg/L	10.0		115	70-130			
tert-Butylbenzene	11.4	1.0	µg/L	10.0		114	70-130			
tert-Butyl Ethyl Ether (TBEE)	11.6	0.50	µg/L	10.0		116	70-130			
Carbon Disulfide	12.8	5.0	µg/L	10.0		128	70-130			
Carbon Tetrachloride	9.98	1.0	µg/L	10.0		99.8	70-130			
Chlorobenzene	12.0	1.0	µg/L	10.0		120	70-130			
Chlorodibromomethane	12.1	0.50	µg/L	10.0		121	70-130			
Chloroethane	11.3	2.0	µg/L	10.0		113	70-130			
Chloroform	10.0	2.0	µg/L	10.0		100	70-130			
Chloromethane	8.27	2.0	µg/L	10.0		82.7	40-160			†
2-Chlorotoluene	11.3	1.0	µg/L	10.0		113	70-130			
4-Chlorotoluene	12.5	1.0	µg/L	10.0		125	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	8.33	2.0	µg/L	10.0		83.3	70-130			
1,2-Dibromoethane (EDB)	11.2	0.50	µg/L	10.0		112	70-130			
Dibromomethane	11.2	1.0	µg/L	10.0		112	70-130			
1,2-Dichlorobenzene	12.2	1.0	µg/L	10.0		122	70-130			
1,3-Dichlorobenzene	11.9	1.0	µg/L	10.0		119	70-130			
1,4-Dichlorobenzene	11.5	1.0	µg/L	10.0		115	70-130			
Dichlorodifluoromethane (Freon 12)	7.30	2.0	µg/L	10.0		73.0	40-160			†
1,1-Dichloroethane	10.2	1.0	µg/L	10.0		102	70-130			
1,2-Dichloroethane	9.32	1.0	µg/L	10.0		93.2	70-130			
1,1-Dichloroethylene	12.0	1.0	µg/L	10.0		120	70-130			
cis-1,2-Dichloroethylene	10.3	1.0	µg/L	10.0		103	70-130			
trans-1,2-Dichloroethylene	10.8	1.0	µg/L	10.0		108	70-130			
1,2-Dichloropropane	10.0	1.0	µg/L	10.0		100	70-130			
1,3-Dichloropropane	10.7	0.50	µg/L	10.0		107	70-130			
2,2-Dichloropropane	7.49	1.0	µg/L	10.0		74.9	70-130			V-05
1,1-Dichloropropene	9.62	0.50	µg/L	10.0		96.2	70-130			
cis-1,3-Dichloropropene	11.4	0.40	µg/L	10.0		114	70-130			
trans-1,3-Dichloropropene	11.9	0.40	µg/L	10.0		119	70-130			
Diethyl Ether	14.1	2.0	µg/L	10.0		141	* 70-130			V-20, L-02
Diisopropyl Ether (DIPE)	10.7	0.50	µg/L	10.0		107	70-130			
1,4-Dioxane	83.2	50	µg/L	100		83.2	40-160			V-16 †
Ethylbenzene	11.4	1.0	µg/L	10.0		114	70-130			
Hexachlorobutadiene	12.0	0.60	µg/L	10.0		120	70-130			
2-Hexanone (MBK)	93.4	10	µg/L	100		93.4	40-160			†
Isopropylbenzene (Cumene)	11.8	1.0	µg/L	10.0		118	70-130			
p-Isopropyltoluene (p-Cymene)	11.5	1.0	µg/L	10.0		115	70-130			
Methyl tert-Butyl Ether (MTBE)	11.9	1.0	µg/L	10.0		119	70-130			
Methylene Chloride	12.7	5.0	µg/L	10.0		127	70-130			
4-Methyl-2-pentanone (MIBK)	96.0	10	µg/L	100		96.0	40-160			†
Naphthalene	9.97	2.0	µg/L	10.0		99.7	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227208 - SW-846 5030B

LCS (B227208-BS1)

Prepared: 04/02/19 Analyzed: 04/05/19

n-Propylbenzene	11.9	1.0	µg/L	10.0		119	70-130			
Styrene	13.0	1.0	µg/L	10.0		130	70-130			V-20
1,1,1,2-Tetrachloroethane	12.5	1.0	µg/L	10.0		125	70-130			
1,1,2,2-Tetrachloroethane	11.3	0.50	µg/L	10.0		113	70-130			R-05
Tetrachloroethylene	10.6	1.0	µg/L	10.0		106	70-130			
Tetrahydrofuran	10.0	2.0	µg/L	10.0		100	70-130			
Toluene	10.5	1.0	µg/L	10.0		105	70-130			
1,2,3-Trichlorobenzene	10.7	2.0	µg/L	10.0		107	70-130			
1,2,4-Trichlorobenzene	10.3	1.0	µg/L	10.0		103	70-130			
1,1,1-Trichloroethane	9.84	1.0	µg/L	10.0		98.4	70-130			
1,1,2-Trichloroethane	11.4	1.0	µg/L	10.0		114	70-130			
Trichloroethylene	10.4	1.0	µg/L	10.0		104	70-130			
Trichlorofluoromethane (Freon 11)	10.1	2.0	µg/L	10.0		101	70-130			
1,2,3-Trichloropropane	10.6	2.0	µg/L	10.0		106	70-130			
1,2,4-Trimethylbenzene	11.5	1.0	µg/L	10.0		115	70-130			
1,3,5-Trimethylbenzene	11.9	1.0	µg/L	10.0		119	70-130			
Vinyl Chloride	21.0	2.0	µg/L	10.0		210 *	70-130			L-02, V-20
m+p Xylene	23.3	2.0	µg/L	20.0		116	70-130			
o-Xylene	12.1	1.0	µg/L	10.0		121	70-130			
Surrogate: 1,2-Dichloroethane-d4	23.4		µg/L	25.0		93.6	70-130			
Surrogate: Toluene-d8	24.7		µg/L	25.0		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	26.4		µg/L	25.0		106	70-130			

LCS Dup (B227208-BS1)

Prepared: 04/02/19 Analyzed: 04/05/19

Acetone	157	10	µg/L	100		157	40-160	28.5 *	20	L-14, R-05	†
tert-Amyl Methyl Ether (TAME)	11.4	0.50	µg/L	10.0		114	70-130	1.91	20		
Benzene	9.53	1.0	µg/L	10.0		95.3	70-130	3.00	20		
Bromobenzene	11.4	1.0	µg/L	10.0		114	70-130	3.61	20		
Bromochloromethane	10.3	1.0	µg/L	10.0		103	70-130	0.483	20		
Bromodichloromethane	10.3	1.0	µg/L	10.0		103	70-130	2.77	20		
Bromoform	11.6	1.0	µg/L	10.0		116	70-130	0.430	20		
Bromomethane	8.05	2.0	µg/L	10.0		80.5	40-160	8.14	20		†
2-Butanone (MEK)	87.8	10	µg/L	100		87.8	40-160	9.08	20	V-05	†
n-Butylbenzene	10.8	1.0	µg/L	10.0		108	70-130	5.51	20		
sec-Butylbenzene	11.2	1.0	µg/L	10.0		112	70-130	2.73	20		
tert-Butylbenzene	10.9	1.0	µg/L	10.0		109	70-130	4.49	20		
tert-Butyl Ethyl Ether (TBEE)	11.6	0.50	µg/L	10.0		116	70-130	0.345	20		
Carbon Disulfide	12.1	5.0	µg/L	10.0		121	70-130	5.06	20		
Carbon Tetrachloride	9.66	1.0	µg/L	10.0		96.6	70-130	3.26	20		
Chlorobenzene	11.6	1.0	µg/L	10.0		116	70-130	3.90	20		
Chlorodibromomethane	11.7	0.50	µg/L	10.0		117	70-130	3.27	20		
Chloroethane	11.6	2.0	µg/L	10.0		116	70-130	2.88	20		
Chloroform	9.79	2.0	µg/L	10.0		97.9	70-130	2.32	20		
Chloromethane	7.95	2.0	µg/L	10.0		79.5	40-160	3.95	20		†
2-Chlorotoluene	10.7	1.0	µg/L	10.0		107	70-130	5.65	20		
4-Chlorotoluene	11.7	1.0	µg/L	10.0		117	70-130	6.35	20		
1,2-Dibromo-3-chloropropane (DBCP)	8.22	2.0	µg/L	10.0		82.2	70-130	1.33	20		
1,2-Dibromoethane (EDB)	11.1	0.50	µg/L	10.0		111	70-130	1.17	20		
Dibromomethane	11.0	1.0	µg/L	10.0		110	70-130	1.98	20		
1,2-Dichlorobenzene	11.8	1.0	µg/L	10.0		118	70-130	3.26	20		
1,3-Dichlorobenzene	11.6	1.0	µg/L	10.0		116	70-130	2.30	20		
1,4-Dichlorobenzene	11.3	1.0	µg/L	10.0		113	70-130	1.76	20		

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227208 - SW-846 5030B										
LCS Dup (B227208-BSD1)										
					Prepared: 04/02/19 Analyzed: 04/05/19					
Dichlorodifluoromethane (Freon 12)	6.91	2.0	µg/L	10.0		69.1	40-160	5.49	20	L-14 †
1,1-Dichloroethane	10.0	1.0	µg/L	10.0		100	70-130	1.49	20	
1,2-Dichloroethane	9.07	1.0	µg/L	10.0		90.7	70-130	2.72	20	
1,1-Dichloroethylene	11.7	1.0	µg/L	10.0		117	70-130	2.19	20	
cis-1,2-Dichloroethylene	9.90	1.0	µg/L	10.0		99.0	70-130	3.86	20	
trans-1,2-Dichloroethylene	10.4	1.0	µg/L	10.0		104	70-130	4.34	20	
1,2-Dichloropropane	9.62	1.0	µg/L	10.0		96.2	70-130	3.87	20	
1,3-Dichloropropane	10.8	0.50	µg/L	10.0		108	70-130	0.746	20	
2,2-Dichloropropane	7.20	1.0	µg/L	10.0		72.0	70-130	3.95	20	V-05
1,1-Dichloropropene	9.46	0.50	µg/L	10.0		94.6	70-130	1.68	20	
cis-1,3-Dichloropropene	10.9	0.40	µg/L	10.0		109	70-130	4.93	20	
trans-1,3-Dichloropropene	11.6	0.40	µg/L	10.0		116	70-130	2.39	20	
Diethyl Ether	14.2	2.0	µg/L	10.0		142 *	70-130	0.988	20	V-20, L-02
Diisopropyl Ether (DIPE)	10.3	0.50	µg/L	10.0		103	70-130	3.24	20	
1,4-Dioxane	88.1	50	µg/L	100		88.1	40-160	5.75	20	V-16 †
Ethylbenzene	11.0	1.0	µg/L	10.0		110	70-130	3.75	20	
Hexachlorobutadiene	11.6	0.60	µg/L	10.0		116	70-130	2.88	20	
2-Hexanone (MBK)	97.9	10	µg/L	100		97.9	40-160	4.69	20	†
Isopropylbenzene (Cumene)	11.3	1.0	µg/L	10.0		113	70-130	4.59	20	
p-Isopropyltoluene (p-Cymene)	11.0	1.0	µg/L	10.0		110	70-130	4.53	20	
Methyl tert-Butyl Ether (MTBE)	11.8	1.0	µg/L	10.0		118	70-130	1.01	20	
Methylene Chloride	12.6	5.0	µg/L	10.0		126	70-130	0.793	20	
4-Methyl-2-pentanone (MIBK)	93.9	10	µg/L	100		93.9	40-160	2.31	20	†
Naphthalene	9.57	2.0	µg/L	10.0		95.7	70-130	4.09	20	
n-Propylbenzene	11.3	1.0	µg/L	10.0		113	70-130	5.17	20	
Styrene	12.7	1.0	µg/L	10.0		127	70-130	2.65	20	V-20
1,1,1,2-Tetrachloroethane	12.2	1.0	µg/L	10.0		122	70-130	2.35	20	
1,1,2,2-Tetrachloroethane	9.07	0.50	µg/L	10.0		90.7	70-130	21.8 *	20	R-05
Tetrachloroethylene	10.4	1.0	µg/L	10.0		104	70-130	2.67	20	
Tetrahydrofuran	9.86	2.0	µg/L	10.0		98.6	70-130	1.51	20	
Toluene	10.3	1.0	µg/L	10.0		103	70-130	1.54	20	
1,2,3-Trichlorobenzene	10.4	2.0	µg/L	10.0		104	70-130	2.74	20	
1,2,4-Trichlorobenzene	10.1	1.0	µg/L	10.0		101	70-130	1.96	20	
1,1,1-Trichloroethane	9.57	1.0	µg/L	10.0		95.7	70-130	2.78	20	
1,1,2-Trichloroethane	11.4	1.0	µg/L	10.0		114	70-130	0.350	20	
Trichloroethylene	12.1	1.0	µg/L	10.0		121	70-130	15.4	20	
Trichlorofluoromethane (Freon 11)	9.67	2.0	µg/L	10.0		96.7	70-130	4.65	20	
1,2,3-Trichloropropane	10.4	2.0	µg/L	10.0		104	70-130	2.48	20	
1,2,4-Trimethylbenzene	11.1	1.0	µg/L	10.0		111	70-130	4.25	20	
1,3,5-Trimethylbenzene	11.3	1.0	µg/L	10.0		113	70-130	4.57	20	
Vinyl Chloride	18.6	2.0	µg/L	10.0		186 *	70-130	12.5	20	L-02, V-20
m+p Xylene	22.3	2.0	µg/L	20.0		112	70-130	4.30	20	
o-Xylene	11.6	1.0	µg/L	10.0		116	70-130	4.04	20	
Surrogate: 1,2-Dichloroethane-d4	23.2		µg/L	25.0		92.8	70-130			
Surrogate: Toluene-d8	24.9		µg/L	25.0		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	26.1		µg/L	25.0		104	70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227443 - SW-846 3510C

Blank (B227443-BLK1)

Prepared: 04/04/19 Analyzed: 04/05/19

Acenaphthene	ND	5.0	µg/L							
Acenaphthylene	ND	5.0	µg/L							
Acetophenone	ND	10	µg/L							
Aniline	ND	5.0	µg/L							V-34
Anthracene	ND	5.0	µg/L							
Benzo(a)anthracene	ND	5.0	µg/L							
Benzo(a)pyrene	ND	5.0	µg/L							
Benzo(b)fluoranthene	ND	5.0	µg/L							
Benzo(g,h,i)perylene	ND	5.0	µg/L							
Benzo(k)fluoranthene	ND	5.0	µg/L							
Bis(2-chloroethoxy)methane	ND	10	µg/L							
Bis(2-chloroethyl)ether	ND	10	µg/L							
Bis(2-chloroisopropyl)ether	ND	10	µg/L							
Bis(2-Ethylhexyl)phthalate	ND	10	µg/L							
4-Bromophenylphenylether	ND	10	µg/L							
Butylbenzylphthalate	ND	10	µg/L							
4-Chloroaniline	ND	10	µg/L							R-05, V-34
2-Chloronaphthalene	ND	10	µg/L							
2-Chlorophenol	ND	10	µg/L							
Chrysene	ND	5.0	µg/L							
Dibenz(a,h)anthracene	ND	5.0	µg/L							
Dibenzofuran	ND	5.0	µg/L							
Di-n-butylphthalate	ND	10	µg/L							
1,2-Dichlorobenzene	ND	5.0	µg/L							
1,3-Dichlorobenzene	ND	5.0	µg/L							
1,4-Dichlorobenzene	ND	5.0	µg/L							
3,3-Dichlorobenzidine	ND	10	µg/L							
2,4-Dichlorophenol	ND	10	µg/L							
Diethylphthalate	ND	10	µg/L							
2,4-Dimethylphenol	ND	10	µg/L							
Dimethylphthalate	ND	10	µg/L							
2,4-Dinitrophenol	ND	10	µg/L							V-05
2,4-Dinitrotoluene	ND	10	µg/L							
2,6-Dinitrotoluene	ND	10	µg/L							
Di-n-octylphthalate	ND	10	µg/L							
1,2-Diphenylhydrazine/Azobenzene	ND	10	µg/L							
Fluoranthene	ND	5.0	µg/L							
Fluorene	ND	5.0	µg/L							
Hexachlorobenzene	ND	10	µg/L							
Hexachlorobutadiene	ND	10	µg/L							
Hexachloroethane	ND	10	µg/L							
Indeno(1,2,3-cd)pyrene	ND	5.0	µg/L							
Isophorone	ND	10	µg/L							
2-Methylnaphthalene	ND	5.0	µg/L							
2-Methylphenol	ND	10	µg/L							
3/4-Methylphenol	ND	10	µg/L							
Naphthalene	ND	5.0	µg/L							
Nitrobenzene	ND	10	µg/L							
2-Nitrophenol	ND	10	µg/L							
4-Nitrophenol	ND	10	µg/L							
Pentachlorophenol	ND	10	µg/L							
Phenanthrene	ND	5.0	µg/L							

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227443 - SW-846 3510C

Blank (B227443-BLK1)

Prepared: 04/04/19 Analyzed: 04/05/19

Phenol	ND	10	µg/L							R-05
Pyrene	ND	5.0	µg/L							
1,2,4-Trichlorobenzene	ND	5.0	µg/L							
2,4,5-Trichlorophenol	ND	10	µg/L							
2,4,6-Trichlorophenol	ND	10	µg/L							
Surrogate: 2-Fluorophenol	101		µg/L	200		50.5	15-110			
Surrogate: Phenol-d6	70.6		µg/L	200		35.3	15-110			
Surrogate: Nitrobenzene-d5	75.8		µg/L	100		75.8	30-130			
Surrogate: 2-Fluorobiphenyl	77.1		µg/L	100		77.1	30-130			
Surrogate: 2,4,6-Tribromophenol	164		µg/L	200		82.1	15-110			
Surrogate: p-Terphenyl-d14	92.3		µg/L	100		92.3	30-130			

LCS (B227443-BS1)

Prepared: 04/04/19 Analyzed: 04/05/19

Acenaphthene	39.6	5.0	µg/L	50.0		79.2	40-140			
Acenaphthylene	39.8	5.0	µg/L	50.0		79.5	40-140			
Acetophenone	39.2	10	µg/L	50.0		78.4	40-140			
Aniline	34.8	5.0	µg/L	50.0		69.7	40-140			V-34
Anthracene	41.4	5.0	µg/L	50.0		82.7	40-140			
Benzo(a)anthracene	42.0	5.0	µg/L	50.0		84.0	40-140			
Benzo(a)pyrene	43.9	5.0	µg/L	50.0		87.9	40-140			
Benzo(b)fluoranthene	41.7	5.0	µg/L	50.0		83.3	40-140			
Benzo(g,h,i)perylene	45.6	5.0	µg/L	50.0		91.1	40-140			
Benzo(k)fluoranthene	42.6	5.0	µg/L	50.0		85.2	40-140			
Bis(2-chloroethoxy)methane	45.4	10	µg/L	50.0		90.8	40-140			
Bis(2-chloroethyl)ether	40.9	10	µg/L	50.0		81.9	40-140			
Bis(2-chloroisopropyl)ether	44.0	10	µg/L	50.0		87.9	40-140			
Bis(2-Ethylhexyl)phthalate	39.8	10	µg/L	50.0		79.6	40-140			
4-Bromophenylphenylether	39.4	10	µg/L	50.0		78.7	40-140			
Butylbenzylphthalate	43.7	10	µg/L	50.0		87.4	40-140			
4-Chloroaniline	38.7	10	µg/L	50.0		77.5	15-140			R-05, V-34 †
2-Chloronaphthalene	35.1	10	µg/L	50.0		70.2	40-140			
2-Chlorophenol	39.4	10	µg/L	50.0		78.8	30-130			
Chrysene	42.8	5.0	µg/L	50.0		85.5	40-140			
Dibenz(a,h)anthracene	43.1	5.0	µg/L	50.0		86.1	40-140			
Dibenzofuran	41.7	5.0	µg/L	50.0		83.3	40-140			
Di-n-butylphthalate	39.2	10	µg/L	50.0		78.4	40-140			
1,2-Dichlorobenzene	35.1	5.0	µg/L	50.0		70.3	40-140			
1,3-Dichlorobenzene	34.8	5.0	µg/L	50.0		69.6	40-140			
1,4-Dichlorobenzene	34.6	5.0	µg/L	50.0		69.2	40-140			
3,3-Dichlorobenzidine	48.4	10	µg/L	50.0		96.7	40-140			
2,4-Dichlorophenol	42.2	10	µg/L	50.0		84.4	30-130			
Diethylphthalate	42.2	10	µg/L	50.0		84.4	40-140			
2,4-Dimethylphenol	37.9	10	µg/L	50.0		75.8	30-130			
Dimethylphthalate	43.8	10	µg/L	50.0		87.6	40-140			
2,4-Dinitrophenol	33.3	10	µg/L	50.0		66.7	15-140			V-05 †
2,4-Dinitrotoluene	43.6	10	µg/L	50.0		87.3	40-140			
2,6-Dinitrotoluene	45.4	10	µg/L	50.0		90.7	40-140			
Di-n-octylphthalate	36.7	10	µg/L	50.0		73.4	40-140			
1,2-Diphenylhydrazine/Azobenzene	38.0	10	µg/L	50.0		76.0	40-140			
Fluoranthene	41.7	5.0	µg/L	50.0		83.3	40-140			
Fluorene	42.2	5.0	µg/L	50.0		84.3	40-140			
Hexachlorobenzene	39.1	10	µg/L	50.0		78.3	40-140			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227443 - SW-846 3510C

LCS (B227443-BS1)

Prepared: 04/04/19 Analyzed: 04/05/19

Hexachlorobutadiene	34.7	10	µg/L	50.0		69.4	40-140			
Hexachloroethane	35.1	10	µg/L	50.0		70.2	40-140			
Indeno(1,2,3-cd)pyrene	45.0	5.0	µg/L	50.0		89.9	40-140			
Isophorone	40.1	10	µg/L	50.0		80.2	40-140			
2-Methylnaphthalene	40.7	5.0	µg/L	50.0		81.4	40-140			
2-Methylphenol	37.7	10	µg/L	50.0		75.4	30-130			
3/4-Methylphenol	34.5	10	µg/L	50.0		69.0	30-130			
Naphthalene	37.8	5.0	µg/L	50.0		75.7	40-140			
Nitrobenzene	37.4	10	µg/L	50.0		74.7	40-140			
2-Nitrophenol	36.2	10	µg/L	50.0		72.3	30-130			
4-Nitrophenol	23.8	10	µg/L	50.0		47.5	15-140			†
Pentachlorophenol	38.9	10	µg/L	50.0		77.8	30-130			
Phenanthrene	41.0	5.0	µg/L	50.0		82.1	40-140			
Phenol	20.5	10	µg/L	50.0		41.0	15-140		R-05	†
Pyrene	43.8	5.0	µg/L	50.0		87.5	40-140			
1,2,4-Trichlorobenzene	36.6	5.0	µg/L	50.0		73.2	40-140			
2,4,5-Trichlorophenol	39.8	10	µg/L	50.0		79.6	30-130			
2,4,6-Trichlorophenol	41.1	10	µg/L	50.0		82.2	30-130			
Surrogate: 2-Fluorophenol	113		µg/L	200		56.5	15-110			
Surrogate: Phenol-d6	85.0		µg/L	200		42.5	15-110			
Surrogate: Nitrobenzene-d5	82.6		µg/L	100		82.6	30-130			
Surrogate: 2-Fluorobiphenyl	84.7		µg/L	100		84.7	30-130			
Surrogate: 2,4,6-Tribromophenol	197		µg/L	200		98.4	15-110			
Surrogate: p-Terphenyl-d14	94.0		µg/L	100		94.0	30-130			

LCS Dup (B227443-BS1)

Prepared: 04/04/19 Analyzed: 04/05/19

Acenaphthene	34.8	5.0	µg/L	50.0		69.7	40-140	12.8	20	
Acenaphthylene	34.6	5.0	µg/L	50.0		69.2	40-140	13.9	20	
Acetophenone	32.9	10	µg/L	50.0		65.8	40-140	17.5	20	
Aniline	26.2	5.0	µg/L	50.0		52.4	40-140	28.3 *	20	V-34
Anthracene	36.3	5.0	µg/L	50.0		72.7	40-140	12.9	20	
Benzo(a)anthracene	37.3	5.0	µg/L	50.0		74.7	40-140	11.8	20	
Benzo(a)pyrene	38.3	5.0	µg/L	50.0		76.7	40-140	13.6	20	
Benzo(b)fluoranthene	36.1	5.0	µg/L	50.0		72.2	40-140	14.3	20	
Benzo(g,h,i)perylene	40.0	5.0	µg/L	50.0		79.9	40-140	13.1	20	
Benzo(k)fluoranthene	37.3	5.0	µg/L	50.0		74.5	40-140	13.3	20	
Bis(2-chloroethoxy)methane	39.4	10	µg/L	50.0		78.8	40-140	14.1	20	
Bis(2-chloroethyl)ether	34.4	10	µg/L	50.0		68.9	40-140	17.2	20	
Bis(2-chloroisopropyl)ether	37.4	10	µg/L	50.0		74.9	40-140	16.1	20	
Bis(2-Ethylhexyl)phthalate	35.9	10	µg/L	50.0		71.7	40-140	10.4	20	
4-Bromophenylphenylether	35.7	10	µg/L	50.0		71.4	40-140	9.75	20	
Butylbenzylphthalate	39.2	10	µg/L	50.0		78.3	40-140	11.0	20	
4-Chloroaniline	29.7	10	µg/L	50.0		59.5	15-140	26.3 *	20	R-05, V-34 †
2-Chloronaphthalene	32.1	10	µg/L	50.0		64.2	40-140	8.99	20	
2-Chlorophenol	33.0	10	µg/L	50.0		66.1	30-130	17.6	20	
Chrysene	38.6	5.0	µg/L	50.0		77.1	40-140	10.3	20	
Dibenz(a,h)anthracene	37.2	5.0	µg/L	50.0		74.5	40-140	14.5	20	
Dibenzofuran	35.8	5.0	µg/L	50.0		71.6	40-140	15.2	20	
Di-n-butylphthalate	35.8	10	µg/L	50.0		71.7	40-140	9.01	20	
1,2-Dichlorobenzene	29.7	5.0	µg/L	50.0		59.4	40-140	16.8	20	
1,3-Dichlorobenzene	29.1	5.0	µg/L	50.0		58.2	40-140	18.0	20	
1,4-Dichlorobenzene	29.0	5.0	µg/L	50.0		58.0	40-140	17.6	20	

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227443 - SW-846 3510C										
LCS Dup (B227443-BSD1)										
					Prepared: 04/04/19 Analyzed: 04/05/19					
3,3-Dichlorobenzidine	42.4	10	µg/L	50.0		84.7	40-140	13.2	20	
2,4-Dichlorophenol	34.9	10	µg/L	50.0		69.8	30-130	18.9	20	
Diethylphthalate	36.8	10	µg/L	50.0		73.5	40-140	13.8	20	
2,4-Dimethylphenol	31.0	10	µg/L	50.0		62.0	30-130	20.0	20	
Dimethylphthalate	38.5	10	µg/L	50.0		77.0	40-140	12.9	20	
2,4-Dinitrophenol	28.9	10	µg/L	50.0		57.7	15-140	14.4	20	V-05 †
2,4-Dinitrotoluene	36.8	10	µg/L	50.0		73.6	40-140	17.0	20	
2,6-Dinitrotoluene	37.8	10	µg/L	50.0		75.6	40-140	18.1	20	
Di-n-octylphthalate	32.0	10	µg/L	50.0		64.0	40-140	13.7	20	
1,2-Diphenylhydrazine/Azobenzene	34.2	10	µg/L	50.0		68.4	40-140	10.6	20	
Fluoranthene	37.0	5.0	µg/L	50.0		74.0	40-140	11.9	20	
Fluorene	36.3	5.0	µg/L	50.0		72.6	40-140	14.9	20	
Hexachlorobenzene	34.4	10	µg/L	50.0		68.8	40-140	12.9	20	
Hexachlorobutadiene	29.8	10	µg/L	50.0		59.6	40-140	15.2	20	
Hexachloroethane	29.2	10	µg/L	50.0		58.4	40-140	18.4	20	
Indeno(1,2,3-cd)pyrene	38.2	5.0	µg/L	50.0		76.5	40-140	16.2	20	
Isophorone	35.0	10	µg/L	50.0		69.9	40-140	13.7	20	
2-Methylnaphthalene	34.7	5.0	µg/L	50.0		69.5	40-140	15.8	20	
2-Methylphenol	31.4	10	µg/L	50.0		62.8	30-130	18.3	20	
3/4-Methylphenol	28.6	10	µg/L	50.0		57.2	30-130	18.6	20	
Naphthalene	32.9	5.0	µg/L	50.0		65.8	40-140	14.1	20	
Nitrobenzene	31.8	10	µg/L	50.0		63.6	40-140	16.0	20	
2-Nitrophenol	31.0	10	µg/L	50.0		62.0	30-130	15.4	20	
4-Nitrophenol	19.4	10	µg/L	50.0		38.9	15-140	20.0	20	†
Pentachlorophenol	35.4	10	µg/L	50.0		70.8	30-130	9.40	20	
Phenanthrene	36.7	5.0	µg/L	50.0		73.4	40-140	11.2	20	
Phenol	16.4	10	µg/L	50.0		32.9	15-140	21.9 *	20	R-05 †
Pyrene	39.2	5.0	µg/L	50.0		78.4	40-140	11.0	20	
1,2,4-Trichlorobenzene	31.5	5.0	µg/L	50.0		63.0	40-140	15.0	20	
2,4,5-Trichlorophenol	34.2	10	µg/L	50.0		68.4	30-130	15.1	20	
2,4,6-Trichlorophenol	35.7	10	µg/L	50.0		71.4	30-130	14.0	20	
Surrogate: 2-Fluorophenol	94.2		µg/L	200		47.1	15-110			
Surrogate: Phenol-d6	68.9		µg/L	200		34.4	15-110			
Surrogate: Nitrobenzene-d5	69.3		µg/L	100		69.3	30-130			
Surrogate: 2-Fluorobiphenyl	72.6		µg/L	100		72.6	30-130			
Surrogate: 2,4,6-Tribromophenol	166		µg/L	200		83.1	15-110			
Surrogate: p-Terphenyl-d14	83.6		µg/L	100		83.6	30-130			

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QUALITY CONTROL

Polychlorinated Biphenyls By GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227544 - SW-846 3510C

Blank (B227544-BLK1)

Prepared: 04/05/19 Analyzed: 04/06/19

Aroclor-1016	ND	0.10	µg/L							
Aroclor-1016 [2C]	ND	0.10	µg/L							
Aroclor-1221	ND	0.10	µg/L							
Aroclor-1221 [2C]	ND	0.10	µg/L							
Aroclor-1232	ND	0.10	µg/L							
Aroclor-1232 [2C]	ND	0.10	µg/L							
Aroclor-1242	ND	0.10	µg/L							
Aroclor-1242 [2C]	ND	0.10	µg/L							
Aroclor-1248	ND	0.10	µg/L							
Aroclor-1248 [2C]	ND	0.10	µg/L							
Aroclor-1254	ND	0.10	µg/L							
Aroclor-1254 [2C]	ND	0.10	µg/L							
Aroclor-1260	ND	0.10	µg/L							
Aroclor-1260 [2C]	ND	0.10	µg/L							
Aroclor-1262	ND	0.10	µg/L							
Aroclor-1262 [2C]	ND	0.10	µg/L							
Aroclor-1268	ND	0.10	µg/L							
Aroclor-1268 [2C]	ND	0.10	µg/L							
Surrogate: Decachlorobiphenyl	1.48		µg/L	2.00		73.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.48		µg/L	2.00		73.9	30-150			
Surrogate: Tetrachloro-m-xylene	1.16		µg/L	2.00		58.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.19		µg/L	2.00		59.3	30-150			

LCS (B227544-BS1)

Prepared: 04/05/19 Analyzed: 04/06/19

Aroclor-1016	0.42	0.20	µg/L	0.500		85.0	40-140			
Aroclor-1016 [2C]	0.42	0.20	µg/L	0.500		84.6	40-140			
Aroclor-1260	0.40	0.20	µg/L	0.500		79.4	40-140			
Aroclor-1260 [2C]	0.41	0.20	µg/L	0.500		82.3	40-140			
Surrogate: Decachlorobiphenyl	1.73		µg/L	2.00		86.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.75		µg/L	2.00		87.3	30-150			
Surrogate: Tetrachloro-m-xylene	1.40		µg/L	2.00		70.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.43		µg/L	2.00		71.6	30-150			

LCS Dup (B227544-BSD1)

Prepared: 04/05/19 Analyzed: 04/06/19

Aroclor-1016	0.41	0.20	µg/L	0.500		81.2	40-140	4.53	20	
Aroclor-1016 [2C]	0.42	0.20	µg/L	0.500		83.2	40-140	1.67	20	
Aroclor-1260	0.38	0.20	µg/L	0.500		76.2	40-140	4.17	20	
Aroclor-1260 [2C]	0.40	0.20	µg/L	0.500		79.5	40-140	3.52	20	
Surrogate: Decachlorobiphenyl	1.67		µg/L	2.00		83.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.73		µg/L	2.00		86.3	30-150			
Surrogate: Tetrachloro-m-xylene	1.40		µg/L	2.00		69.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.44		µg/L	2.00		71.9	30-150			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227554 - SW-846 3005A

Blank (B227554-BLK1)

Prepared: 04/05/19 Analyzed: 04/08/19

Antimony	ND	1.0	µg/L							
Arsenic	ND	0.40	µg/L							
Barium	ND	10	µg/L							
Beryllium	ND	0.40	µg/L							
Cadmium	ND	0.50	µg/L							
Chromium	ND	1.0	µg/L							
Copper	ND	5.0	µg/L							
Lead	ND	1.0	µg/L							
Manganese	ND	1.0	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.50	µg/L							
Thallium	ND	0.20	µg/L							
Vanadium	ND	5.0	µg/L							
Zinc	ND	10	µg/L							

LCS (B227554-BS1)

Prepared: 04/05/19 Analyzed: 04/08/19

Antimony	550	10	µg/L	500		110	80-120			
Arsenic	544	4.0	µg/L	500		109	80-120			
Barium	541	100	µg/L	500		108	80-120			
Beryllium	542	4.0	µg/L	500		108	80-120			
Cadmium	555	5.0	µg/L	500		111	80-120			
Chromium	563	10	µg/L	500		113	80-120			
Copper	1100	50	µg/L	1000		110	80-120			
Lead	556	10	µg/L	500		111	80-120			
Manganese	548	10	µg/L	500		110	80-120			
Nickel	563	50	µg/L	500		113	80-120			
Selenium	538	50	µg/L	500		108	80-120			
Silver	422	5.0	µg/L	500		84.5	80-120			
Thallium	517	2.0	µg/L	500		103	80-120			
Vanadium	526	50	µg/L	500		105	80-120			
Zinc	1090	100	µg/L	1000		109	80-120			

LCS Dup (B227554-BSD1)

Prepared: 04/05/19 Analyzed: 04/08/19

Antimony	506	10	µg/L	500		101	80-120	8.26	20	
Arsenic	504	4.0	µg/L	500		101	80-120	7.71	20	
Barium	496	100	µg/L	500		99.2	80-120	8.76	20	
Beryllium	505	4.0	µg/L	500		101	80-120	7.20	20	
Cadmium	509	5.0	µg/L	500		102	80-120	8.63	20	
Chromium	516	10	µg/L	500		103	80-120	8.67	20	
Copper	1010	50	µg/L	1000		101	80-120	8.85	20	
Lead	510	10	µg/L	500		102	80-120	8.62	20	
Manganese	501	10	µg/L	500		100	80-120	8.98	20	
Nickel	519	50	µg/L	500		104	80-120	8.03	20	
Selenium	502	50	µg/L	500		100	80-120	6.97	20	
Silver	419	5.0	µg/L	500		83.8	80-120	0.778	20	
Thallium	477	2.0	µg/L	500		95.4	80-120	8.12	20	
Vanadium	490	50	µg/L	500		98.1	80-120	7.02	20	
Zinc	1010	100	µg/L	1000		101	80-120	7.73	20	

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227561 - SW-846 7470A Prep										
Blank (B227561-BLK1)				Prepared & Analyzed: 04/08/19						
Mercury	ND	0.00010	mg/L							
LCS (B227561-BS1)				Prepared & Analyzed: 04/08/19						
Mercury	0.00379	0.00010	mg/L	0.00400		94.7	80-120			
LCS Dup (B227561-BSD1)				Prepared & Analyzed: 04/08/19						
Mercury	0.00381	0.00010	mg/L	0.00400		95.2	80-120	0.563	20	
Duplicate (B227561-DUP1)				Source: 19D0106-02			Prepared & Analyzed: 04/08/19			
Mercury	ND	0.00010	mg/L		ND			NC	20	
Matrix Spike (B227561-MS1)				Source: 19D0106-02			Prepared & Analyzed: 04/08/19			
Mercury	0.00375	0.00010	mg/L	0.00400	ND	93.7	75-125			

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QUALITY CONTROL

Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227576 - SW-846 3005A Dissolved										
Blank (B227576-BLK1)										
Prepared: 04/05/19 Analyzed: 04/08/19										
Arsenic	ND	0.40	µg/L							
Blank (B227576-BLK2)										
Prepared: 04/05/19 Analyzed: 04/23/19										
Nickel	ND	5.0	µg/L							
LCS (B227576-BS1)										
Prepared: 04/05/19 Analyzed: 04/08/19										
Arsenic	41.3	0.40	µg/L	40.0		103	80-120			
LCS (B227576-BS2)										
Prepared: 04/05/19 Analyzed: 04/23/19										
Nickel	38.7	5.0	µg/L	40.0		96.8	80-120			

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227200 - SM19-22 4500 NH3 C										
Blank (B227200-BLK1)				Prepared: 04/02/19 Analyzed: 04/03/19						
Ammonia as N	ND	0.30	mg/L							
LCS (B227200-BS1)				Prepared: 04/02/19 Analyzed: 04/03/19						
Ammonia as N	4.8	0.30	mg/L	5.00		95.8	81.5-113			
LCS Dup (B227200-BSD1)				Prepared: 04/02/19 Analyzed: 04/03/19						
Ammonia as N	4.8	0.30	mg/L	5.00		95.8	81.5-113	0.00	11.4	
Batch B227277 - EPA 300.0										
Blank (B227277-BLK1)				Prepared & Analyzed: 04/03/19						
Nitrate as N	ND	0.10	mg/L							
Nitrite as N	ND	0.100	mg/L							
LCS (B227277-BS1)				Prepared & Analyzed: 04/03/19						
Nitrate as N	0.96	0.10	mg/L	1.00		96.1	90-110			
Nitrite as N	1.05	0.100	mg/L	1.00		105	90-110			
LCS Dup (B227277-BSD1)				Prepared & Analyzed: 04/03/19						
Nitrate as N	0.92	0.10	mg/L	1.00		91.5	90-110	4.84	20	
Nitrite as N	1.06	0.100	mg/L	1.00		106	90-110	0.992	20	
Batch B227283 - SM 21-22 4500 P E										
Blank (B227283-BLK1)				Prepared & Analyzed: 04/02/19						
Orthophosphate as P	ND	0.050	mg/L							
LCS (B227283-BS1)				Prepared & Analyzed: 04/02/19						
Orthophosphate as P	0.13	0.050	mg/L	0.170		78.8	72-122			
LCS Dup (B227283-BSD1)				Prepared & Analyzed: 04/02/19						
Orthophosphate as P	0.19	0.050	mg/L	0.170		112	72-122	34.7 *	10.6	R-05
Duplicate (B227283-DUP1)				Source: 19D0106-03			Prepared & Analyzed: 04/02/19			
Orthophosphate as P	ND	0.050	mg/L		ND			NC	17	W-17
Duplicate (B227283-DUP2)				Source: 19D0106-02			Prepared & Analyzed: 04/02/19			
Orthophosphate as P	ND	0.050	mg/L		ND			NC	17	W-17
Matrix Spike (B227283-MS1)				Source: 19D0106-03			Prepared & Analyzed: 04/02/19			
Orthophosphate as P	0.30	0.050	mg/L	0.300	ND	100	55.9-148			W-17

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227283 - SM 21-22 4500 P E										
Matrix Spike (B227283-MS2)		Source: 19D0106-02			Prepared & Analyzed: 04/02/19					
Orthophosphate as P	0.32	0.050	mg/L	0.300	ND	108	55.9-148			W-17
Batch B227312 - SM19-22 4500-N Org B,C-NH3 C										
Blank (B227312-BLK1)		Prepared: 04/03/19 Analyzed: 04/04/19								
Total Kjeldahl Nitrogen	ND	1.0	mg/L							
LCS (B227312-BS1)		Prepared: 04/03/19 Analyzed: 04/04/19								
Total Kjeldahl Nitrogen	19	1.0	mg/L	20.0		95.8	75-117			
Batch B227529 - SM19-22 4500 NH3 C										
Blank (B227529-BLK1)		Prepared: 04/05/19 Analyzed: 04/06/19								
Ammonia as N	ND	0.30	mg/L							
LCS (B227529-BS1)		Prepared: 04/05/19 Analyzed: 04/06/19								
Ammonia as N	4.8	0.30	mg/L	5.00		95.8	81.5-113			
LCS Dup (B227529-BSD1)		Prepared: 04/05/19 Analyzed: 04/06/19								
Ammonia as N	4.9	0.30	mg/L	5.00		98.2	81.5-113	2.47	11.4	
Batch B227568 - SM 21-22 4500 P E										
Blank (B227568-BLK1)		Prepared & Analyzed: 04/07/19								
Phosphorus, Total	ND	0.050	mg/L							
LCS (B227568-BS1)		Prepared & Analyzed: 04/07/19								
Phosphorus, Total	0.22	0.050	mg/L	0.205		107	86.5-124			
LCS Dup (B227568-BSD1)		Prepared & Analyzed: 04/07/19								
Phosphorus, Total	0.22	0.050	mg/L	0.205		109	86.5-124	2.41	11	
Duplicate (B227568-DUP2)		Source: 19D0106-04			Prepared & Analyzed: 04/07/19					
Phosphorus, Total	ND	0.062	mg/L		ND			NC	38.5	
Matrix Spike (B227568-MS2)		Source: 19D0106-04			Prepared & Analyzed: 04/07/19					
Phosphorus, Total	0.30	0.062	mg/L	0.300	ND	101	28.2-163			
Batch B227612 - EPA 300.0										
Blank (B227612-BLK1)		Prepared & Analyzed: 04/09/19								
Chloride	ND	1.0	mg/L							

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227612 - EPA 300.0										
LCS (B227612-BS1)				Prepared & Analyzed: 04/09/19						
Chloride	5.4	1.0	mg/L	5.00		107	90-110			
LCS Dup (B227612-BSD1)				Prepared & Analyzed: 04/09/19						
Chloride	5.3	1.0	mg/L	5.00		106	90-110	0.906	20	
Duplicate (B227612-DUP1)				Source: 19D0106-03 Prepared & Analyzed: 04/09/19						
Chloride	26	1.0	mg/L		26			0.217	20	
Matrix Spike (B227612-MS1)				Source: 19D0106-03 Prepared & Analyzed: 04/09/19						
Chloride	29	1.0	mg/L	5.00	26	58.6 *	80-120			MS-07

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

LCS

SW-846 8082A

Lab Sample ID: B227544-BS1 Date(s) Analyzed: 04/06/2019 04/06/2019

Instrument ID (1): ECD4 Instrument ID (2): ECD4

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.42	
	2	0.000	0.000	0.000	0.42	2.4
Aroclor-1260	1	0.000	0.000	0.000	0.40	
	2	0.000	0.000	0.000	0.41	2.5

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**
SW-846 8082A

LCS Dup

Lab Sample ID: B227544-BSD1 Date(s) Analyzed: 04/06/2019 04/06/2019

Instrument ID (1): ECD4 Instrument ID (2): ECD4

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.41	
	2	0.000	0.000	0.000	0.42	2.4
Aroclor-1260	1	0.000	0.000	0.000	0.38	
	2	0.000	0.000	0.000	0.40	5.1

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
L-14	Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.
MS-07	Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
RL-07	Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
V-16	Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
V-34	Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.
W-17	Samples analyzed for Ortho phosphate were not filtered within 15 minutes of sampling.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 300.0 in Water</i>	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
Nitrate as N	NC,NY,MA,VA,ME,NH,CT,RI
Nitrite as N	NY,NC,NH,VA,ME,CT,RI
<i>SM 21-22 4500 PE in Water</i>	
Orthophosphate as P	CT,MA,NH,NY,RI,ME,VA
Phosphorus, Total	CT,MA,NH,NY,RI,NC,ME,VA
<i>SM19-22 4500 NH3 C in Water</i>	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
<i>SM19-22 4500-N Org B,C-NH3 C in Water</i>	
Total Kjeldahl Nitrogen	CT,MA,NH,NY,RI,NC,ME,VA
<i>SW-846 6020B in Water</i>	
Antimony	CT,NH,NY,ME,VA,NC
Arsenic	CT,NH,NY,NC,ME,VA
Arsenic	CT,NH,NY,ME,VA,NC
Barium	CT,NH,NY,ME,VA,NC
Beryllium	CT,NH,NY,ME,VA,NC
Cadmium	CT,NH,NY,RI,ME,VA,NC
Chromium	CT,NH,NY,ME,VA,NC
Copper	CT,NH,NY,ME,VA,NC
Lead	CT,NH,NY,ME,VA,NC
Manganese	CT,NH,NY,ME,VA,NC
Nickel	CT,NH,NY,NC,ME,VA
Nickel	CT,NH,NY,ME,VA,NC
Selenium	CT,NH,NY,ME,VA,NC
Silver	CT,NH,NY,ME,VA,NC
Thallium	CT,NH,NY,ME,VA,NC
Vanadium	CT,NH,NY,ME,VA,NC
Zinc	CT,NH,NY,ME,VA,NC
<i>SW-846 7470A in Water</i>	
Mercury	CT,NH,NY,NC,ME,VA
<i>SW-846 8082A in Water</i>	
Aroclor-1016	CT,NH,NY,NC,ME,VA
Aroclor-1016 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1221	CT,NH,NY,NC,ME,VA
Aroclor-1221 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1232	CT,NH,NY,NC,ME,VA
Aroclor-1232 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1242	CT,NH,NY,NC,ME,VA
Aroclor-1242 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1248	CT,NH,NY,NC,ME,VA
Aroclor-1248 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1254	CT,NH,NY,NC,ME,VA
Aroclor-1254 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1260	CT,NH,NY,NC,ME,VA
Aroclor-1260 [2C]	CT,NH,NY,NC,ME,VA

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8082A in Water</i>	
Aroclor-1262	NH,NY,NC,ME,VA
Aroclor-1262 [2C]	NH,NY,NC,ME,VA
Aroclor-1268	NH,NY,NC,ME,VA
Aroclor-1268 [2C]	NH,NY,NC,ME,VA
<i>SW-846 8260C in Water</i>	
Acetone	CT,NH,NY,ME
tert-Amyl Methyl Ether (TAME)	NH,NY,ME
Benzene	CT,NH,NY,ME
Bromobenzene	ME
Bromochloromethane	NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME
n-Butylbenzene	NY,ME
sec-Butylbenzene	NY,ME
tert-Butylbenzene	NY,ME
tert-Butyl Ethyl Ether (TBEE)	NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
2-Chlorotoluene	NY,ME
4-Chlorotoluene	NY,ME
1,2-Dibromo-3-chloropropane (DBCP)	NY
1,2-Dibromoethane (EDB)	NY
Dibromomethane	NH,NY,ME
1,2-Dichlorobenzene	CT,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
Dichlorodifluoromethane (Freon 12)	NH,NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,3-Dichloropropane	NY,ME
2,2-Dichloropropane	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
Diisopropyl Ether (DIPE)	NH,NY,ME

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Water	
Ethylbenzene	CT,NH,NY,ME
Hexachlorobutadiene	CT,NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	NY,ME
p-Isopropyltoluene (p-Cymene)	CT,NH,NY,ME
Methyl tert-Butyl Ether (MTBE)	CT,NH,NY,ME
Methylene Chloride	CT,NH,NY,ME
4-Methyl-2-pentanone (MIBK)	CT,NH,NY,ME
Naphthalene	NH,NY,ME
n-Propylbenzene	CT,NH,NY,ME
Styrene	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
1,2,3-Trichlorobenzene	NH,NY,ME
1,2,4-Trichlorobenzene	CT,NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,4-Trimethylbenzene	NY,ME
1,3,5-Trimethylbenzene	NY,ME
Vinyl Chloride	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME
SW-846 8270D in Water	
Acenaphthene	CT,NY,NH
Acenaphthylene	CT,NY,NH
Acetophenone	NY
Aniline	CT,NY
Anthracene	CT,NY,NH
Benzo(a)anthracene	CT,NY,NH
Benzo(a)pyrene	CT,NY,NH
Benzo(b)fluoranthene	CT,NY,NH
Benzo(g,h,i)perylene	CT,NY,NH
Benzo(k)fluoranthene	CT,NY,NH
Bis(2-chloroethoxy)methane	CT,NY,NH
Bis(2-chloroethyl)ether	CT,NY,NH
Bis(2-chloroisopropyl)ether	CT,NY,NH
Bis(2-Ethylhexyl)phthalate	CT,NY,NH
4-Bromophenylphenylether	CT,NY,NH
Butylbenzylphthalate	CT,NY,NH
4-Chloroaniline	CT,NY,NH
2-Chloronaphthalene	CT,NY,NH

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8270D in Water</i>	
2-Chlorophenol	CT,NY,NH
Chrysene	CT,NY,NH
Dibenz(a,h)anthracene	CT,NY,NH
Dibenzofuran	CT,NY,NH
Di-n-butylphthalate	CT,NY,NH
1,2-Dichlorobenzene	CT,NY,NH
1,3-Dichlorobenzene	CT,NY,NH
1,4-Dichlorobenzene	CT,NY,NH
3,3-Dichlorobenzidine	CT,NY,NH
2,4-Dichlorophenol	CT,NY,NH
Diethylphthalate	CT,NY,NH
2,4-Dimethylphenol	CT,NY,NH
Dimethylphthalate	CT,NY,NH
2,4-Dinitrophenol	CT,NY,NH
2,4-Dinitrotoluene	CT,NY,NH
2,6-Dinitrotoluene	CT,NY,NH
Di-n-octylphthalate	CT,NY,NH
1,2-Diphenylhydrazine/Azobenzene	NY
Fluoranthene	CT,NY,NH
Fluorene	NY,NH
Hexachlorobenzene	CT,NY,NH
Hexachlorobutadiene	CT,NY,NH
Hexachloroethane	CT,NY,NH
Indeno(1,2,3-cd)pyrene	CT,NY,NH
Isophorone	CT,NY,NH
2-Methylnaphthalene	CT,NY,NH
2-Methylphenol	CT,NY,NH
3/4-Methylphenol	CT,NY,NH
Naphthalene	CT,NY,NH
Nitrobenzene	CT,NY,NH
2-Nitrophenol	CT,NY,NH
4-Nitrophenol	CT,NY,NH
Pentachlorophenol	CT,NY,NH
Phenanthrene	CT,NY,NH
Phenol	CT,NY,NH
Pyrene	CT,NY,NH
1,2,4-Trichlorobenzene	CT,NY,NH
2,4,5-Trichlorophenol	CT,NY,NH
2,4,6-Trichlorophenol	CT,NY,NH

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The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2019
CT	Connecticut Department of Public Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2019
FL	Florida Department of Health	E871027 NELAP	06/30/2019
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2019
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2019
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2019
NC-DW	North Carolina Department of Health	25703	07/31/2019

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Vortex

Received By [Signature] Date 4/2/19 Time 17:30

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 5 Actual Temp - 3.8, 3.8
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? N/A Were Samples Tampered with? N/A
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? T Who was notified? TRM9

Is there enough Volume? T

Is there Headspace where applicable? F MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? Acid TL2 Base _____

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.	8	1 Liter Plastic	4	16 oz Amb.
HCL-	9	500 mL Amb.		500 mL Plastic	3	8oz Amb/Clear
Meoh-		250 mL Amb.	6	250 mL Plastic	8	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass	2	Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-	1	500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.	8	250 mL Plastic	2	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 19D0106
Project Location: Wayland, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]
19D0106-01 thru 19D0106-04

Matrices: Water

CAM Protocol (check all that below)

8260 VOC CAM II A (X)	7470/7471 Hg CAM III B (X)	MassDEP VPH CAM IV A ()	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ()	6860 Perchlorate CAM VIII B ()
8270 SVOC CAM II B (X)	7010 Metals CAM III C ()	MassDEP VPH CAM IV C ()	8081 Pesticides CAM V B ()	7196 Hex Cr CAM VI B ()	MassDEP APH CAM IX A ()
6010 Metals CAM III A ()	6020 Metals CAM III D (X)	MassDEP EPH CAM IV B ()	8151 Herbicides CAM V C ()	8330 Explosives CAM VIII A ()	TO-15 VOC CAM IX B ()

Affirmative response to Questions A through F is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	<input type="checkbox"/> Yes <input type="checkbox"/> No ¹
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No ¹
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹
----------	---	--

Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹

¹All Negative responses must be addressed in an attached Environmental Laboratory case narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Lisa Worthington Position: Technical Representative
Printed Name: Lisa A. Worthington Date: 04/09/19

April 5, 2019

Kristen Sarson
Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114

Project Location: Wayland, MA
Client Job Number:
Project Number: 46047
Laboratory Work Order Number: 19C1572

Enclosed are results of analyses for samples received by the laboratory on March 29, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Jessica Hoffman", is displayed on a light blue rectangular background. The signature is written in a cursive, flowing style.

Jessica L. Hoffman
Project Manager

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Vertex Engineering - Boston
 100 North Washington St. Suite 302
 Boston, MA 02114
 ATTN: Kristen Sarson

REPORT DATE: 4/5/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 46047

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19C1572

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

PROJECT LOCATION: Wayland, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
V-107 (5-10)	19C1572-01	Soil		SM 2540G SM21-22 2510B Modified SW-846 1030 SW-846 6010D SW-846 7471B SW-846 8082A SW-846 8100 Modified SW-846 8260C SW-846 8270D SW-846 9014 SW-846 9030A SW-846 9045C	
V-108 (0-5)	19C1572-02	Soil		SM 2540G SM21-22 2510B Modified SW-846 1030 SW-846 6010D SW-846 7471B SW-846 8082A SW-846 8100 Modified SW-846 8260C SW-846 8270D SW-846 9014 SW-846 9030A SW-846 9045C	
V-109 (5-10)	19C1572-03	Soil		SM 2540G SM21-22 2510B Modified SW-846 1030 SW-846 6010D SW-846 7471B SW-846 8082A SW-846 8100 Modified SW-846 8260C SW-846 8270D SW-846 9014 SW-846 9030A SW-846 9045C	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Vertex Engineering - Boston
 100 North Washington St. Suite 302
 Boston, MA 02114
 ATTN: Kristen Sarson

REPORT DATE: 4/5/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 46047

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19C1572

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

PROJECT LOCATION: Wayland, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
V-110 (5-10)	19C1572-04	Soil		SM 2540G SM21-22 2510B Modified SW-846 1030 SW-846 6010D SW-846 7471B SW-846 8082A SW-846 8100 Modified SW-846 8260C SW-846 8270D SW-846 9014 SW-846 9030A SW-846 9045C	
V-111 (0-10)	19C1572-05	Soil		SM 2540G SM21-22 2510B Modified SW-846 1030 SW-846 6010D SW-846 7471B SW-846 8082A SW-846 8100 Modified SW-846 8260C SW-846 8270D SW-846 9014 SW-846 9030A SW-846 9045C	
V-112 (0-5)	19C1572-06	Soil		SM 2540G SM21-22 2510B Modified SW-846 1030 SW-846 6010D SW-846 7471B SW-846 8082A SW-846 8100 Modified SW-846 8260C SW-846 8270D SW-846 9014 SW-846 9030A SW-846 9045C	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Vertex Engineering - Boston
 100 North Washington St. Suite 302
 Boston, MA 02114
 ATTN: Kristen Sarson

REPORT DATE: 4/5/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 46047

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19C1572

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

PROJECT LOCATION: Wayland, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
V-113 (0-5)	19C1572-07	Soil		SM 2540G SM21-22 2510B Modified SW-846 1030 SW-846 6010D SW-846 7471B SW-846 8082A SW-846 8100 Modified SW-846 8260C SW-846 8270D SW-846 9014 SW-846 9030A SW-846 9045C	
V-114 (5-10)	19C1572-08	Soil		SM 2540G SM21-22 2510B Modified SW-846 1030 SW-846 6010D SW-846 7471B SW-846 8082A SW-846 8100 Modified SW-846 8260C SW-846 8270D SW-846 9014 SW-846 9030A SW-846 9045C	
V-115 (5-10)	19C1572-09	Soil		SM 2540G SW-846 8082A	
V-116 (0-5)	19C1572-10	Soil		SM 2540G SW-846 8082A	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332
SW-846 6010D

Qualifications:**MS-07**

Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:**Antimony**

19C1572-06[V-112 (0-5)], B227367-MS1

SW-846 8082A

Qualifications:**O-32**

A dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

19C1572-01[V-107 (5-10)], 19C1572-02[V-108 (0-5)], 19C1572-03[V-109 (5-10)], 19C1572-04[V-110 (5-10)], 19C1572-05[V-111 (0-10)], 19C1572-06[V-112 (0-5)], 19C1572-07[V-113 (0-5)], 19C1572-08[V-114 (5-10)], 19C1572-09[V-115 (5-10)], 19C1572-10[V-116 (0-5)]

SW-846 8260C

Qualifications:**L-04**

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:**Vinyl Chloride**

19C1572-01[V-107 (5-10)], 19C1572-02[V-108 (0-5)], 19C1572-03[V-109 (5-10)], 19C1572-04[V-110 (5-10)], 19C1572-05[V-111 (0-10)], 19C1572-06[V-112 (0-5)], 19C1572-07[V-113 (0-5)], 19C1572-08[V-114 (5-10)], B227113-BLK1, B227113-BS1, B227113-BSD1, B227135-BLK1, B227135-BS1, B227135-BSD1

V-16

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:**1,4-Dioxane**

19C1572-01[V-107 (5-10)], 19C1572-02[V-108 (0-5)], 19C1572-03[V-109 (5-10)], 19C1572-04[V-110 (5-10)], 19C1572-05[V-111 (0-10)], 19C1572-06[V-112 (0-5)], 19C1572-07[V-113 (0-5)], 19C1572-08[V-114 (5-10)], B227113-BLK1, B227113-BS1, B227113-BSD1, B227135-BLK1, B227135-BS1, B227135-BSD1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:**Bromoform**

B227113-BS1, B227113-BSD1, B227135-BS1, B227135-BSD1, S034201-CCV1, S034203-CCV1

Methyl tert-Butyl Ether (MTBE)

B227113-BS1, B227113-BSD1, B227135-BS1, B227135-BSD1, S034201-CCV1, S034203-CCV1

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:**Bromomethane**

19C1572-01[V-107 (5-10)], 19C1572-02[V-108 (0-5)], 19C1572-03[V-109 (5-10)], 19C1572-04[V-110 (5-10)], 19C1572-05[V-111 (0-10)], 19C1572-06[V-112 (0-5)], 19C1572-07[V-113 (0-5)], 19C1572-08[V-114 (5-10)], B227113-BLK1, B227113-BS1, B227113-BSD1, B227135-BLK1, B227135-BS1, B227135-BSD1, S034201-CCV1, S034203-CCV1

SW-846 8270D

Qualifications:**L-07**

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:**Aniline**

B227222-BS1

V-05
Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

2-Methylphenol

19C1572-01[V-107 (5-10)], 19C1572-02[V-108 (0-5)], 19C1572-03[V-109 (5-10)], 19C1572-04[V-110 (5-10)], 19C1572-05[V-111 (0-10)], 19C1572-06[V-112 (0-5)], 19C1572-07[V-113 (0-5)], 19C1572-08[V-114 (5-10)], B227222-BLK1, B227222-BS1, B227222-BSD1, B227222-MS1, B227222-MSD1, S034267-CCV1

V-34
Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

3,3-Dichlorobenzidine

19C1572-01[V-107 (5-10)], 19C1572-02[V-108 (0-5)], 19C1572-03[V-109 (5-10)], 19C1572-04[V-110 (5-10)], 19C1572-05[V-111 (0-10)], 19C1572-06[V-112 (0-5)], 19C1572-07[V-113 (0-5)], 19C1572-08[V-114 (5-10)], B227222-BLK1, B227222-BS1, B227222-BSD1, B227222-MS1, B227222-MSD1, S034267-CCV1

4-Chloroaniline

19C1572-01[V-107 (5-10)], 19C1572-02[V-108 (0-5)], 19C1572-03[V-109 (5-10)], 19C1572-04[V-110 (5-10)], 19C1572-05[V-111 (0-10)], 19C1572-06[V-112 (0-5)], 19C1572-07[V-113 (0-5)], 19C1572-08[V-114 (5-10)], B227222-BLK1, B227222-BS1, B227222-BSD1, B227222-MS1, B227222-MSD1, S034267-CCV1

Aniline

19C1572-01[V-107 (5-10)], 19C1572-02[V-108 (0-5)], 19C1572-03[V-109 (5-10)], 19C1572-04[V-110 (5-10)], 19C1572-05[V-111 (0-10)], 19C1572-06[V-112 (0-5)], 19C1572-07[V-113 (0-5)], 19C1572-08[V-114 (5-10)], B227222-BLK1, B227222-BS1, B227222-BSD1, B227222-MS1, B227222-MSD1, S034267-CCV1

SW-846 9045C

Qualifications:

H-03
Sample received after recommended holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19C1572-01[V-107 (5-10)], 19C1572-02[V-108 (0-5)], 19C1572-03[V-109 (5-10)], 19C1572-04[V-110 (5-10)], 19C1572-05[V-111 (0-10)], 19C1572-06[V-112 (0-5)], 19C1572-07[V-113 (0-5)], 19C1572-08[V-114 (5-10)], B227052-DUP1

SW-846 8100 Modified

TPH (C9-C36) is quantitated against a calibration made with a diesel standard.

SW-846 8260C

Laboratory control sample recoveries for required MCP Data Enhancement 8260 compounds were all within limits specified by the method except for "difficult analytes" where recovery control limits of 40-160% are used and/or unless otherwise listed in this narrative. Difficult analytes: MIBK, MEK, acetone, 1,4-dioxane, chloromethane, dichlorodifluoromethane, 2-hexanone, and bromomethane.

SW-846 8270D

Laboratory control sample recoveries for required MCP Data Enhancement 8270 compounds were all within control limits specified by the method, 40-140% for base/neutrals and 30-130% for acids except for "difficult analytes" listed below and/or otherwise listed in this narrative. Difficult analytes limits are 15 and 140%: 2,4-dinitrophenol, 4-chloroaniline, 4-nitrophenol, and phenol.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing. I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Project Manager

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-107 (5-10)

Sampled: 3/27/2019 13:05

Sample ID: 19C1572-01

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Benzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Bromobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Bromochloromethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Bromodichloromethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Bromoform	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Bromomethane	ND	0.0076	mg/Kg dry	1	V-34	SW-846 8260C	4/1/19	4/1/19 15:19	MFF
2-Butanone (MEK)	ND	0.030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
n-Butylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
sec-Butylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
tert-Butylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Carbon Disulfide	ND	0.0046	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Carbon Tetrachloride	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Chlorobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Chlorodibromomethane	ND	0.00076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Chloroethane	ND	0.0076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Chloroform	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Chloromethane	ND	0.0076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
2-Chlorotoluene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
4-Chlorotoluene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,2-Dibromoethane (EDB)	ND	0.00076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Dibromomethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,2-Dichlorobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,3-Dichlorobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,4-Dichlorobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.0076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,1-Dichloroethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,2-Dichloroethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,1-Dichloroethylene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
cis-1,2-Dichloroethylene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
trans-1,2-Dichloroethylene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,2-Dichloropropane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,3-Dichloropropane	ND	0.00076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
2,2-Dichloropropane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,1-Dichloropropene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
cis-1,3-Dichloropropene	ND	0.00076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
trans-1,3-Dichloropropene	ND	0.00076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Diethyl Ether	ND	0.0076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Diisopropyl Ether (DIPE)	ND	0.00076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,4-Dioxane	ND	0.076	mg/Kg dry	1	V-16	SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Ethylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-107 (5-10)

Sampled: 3/27/2019 13:05

Sample ID: 19C1572-01

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
2-Hexanone (MBK)	ND	0.015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Isopropylbenzene (Cumene)	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Methylene Chloride	ND	0.0076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Naphthalene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
n-Propylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Styrene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,1,1,2-Tetrachloroethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,1,1,2,2-Tetrachloroethane	ND	0.00076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Tetrachloroethylene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Tetrahydrofuran	ND	0.0076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Toluene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,2,3-Trichlorobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,2,4-Trichlorobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,1,1-Trichloroethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,1,2-Trichloroethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Trichloroethylene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0076	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,2,3-Trichloropropane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,2,4-Trimethylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
1,3,5-Trimethylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
Vinyl Chloride	ND	0.0076	mg/Kg dry	1	L-04	SW-846 8260C	4/1/19	4/1/19 15:19	MFF
m+p Xylene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF
o-Xylene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:19	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	97.7	70-130	4/1/19 15:19
Toluene-d8	97.4	70-130	4/1/19 15:19
4-Bromofluorobenzene	97.7	70-130	4/1/19 15:19

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-107 (5-10)

Sampled: 3/27/2019 13:05

Sample ID: 19C1572-01

Sample Matrix: Soil

Semivolatle Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Acenaphthylene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Acetophenone	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Aniline	ND	0.34	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Anthracene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Benzo(a)anthracene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Benzo(a)pyrene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Benzo(b)fluoranthene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Benzo(g,h,i)perylene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Benzo(k)fluoranthene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Bis(2-chloroethoxy)methane	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Bis(2-chloroethyl)ether	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Bis(2-chloroisopropyl)ether	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Bis(2-Ethylhexyl)phthalate	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
4-Bromophenylphenylether	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Butylbenzylphthalate	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
4-Chloroaniline	ND	0.66	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 15:47	IMR
2-Chloronaphthalene	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
2-Chlorophenol	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Chrysene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Dibenz(a,h)anthracene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Dibenzofuran	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Di-n-butylphthalate	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
1,2-Dichlorobenzene	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
1,3-Dichlorobenzene	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
1,4-Dichlorobenzene	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
3,3-Dichlorobenzidine	ND	0.17	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 15:47	IMR
2,4-Dichlorophenol	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Diethylphthalate	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
2,4-Dimethylphenol	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Dimethylphthalate	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
2,4-Dinitrophenol	ND	0.66	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
2,4-Dinitrotoluene	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
2,6-Dinitrotoluene	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Di-n-octylphthalate	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
1,2-Diphenylhydrazine/Azobenzene	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Fluoranthene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Fluorene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Hexachlorobenzene	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Hexachlorobutadiene	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Hexachloroethane	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Indeno(1,2,3-cd)pyrene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Isophorone	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
2-Methylnaphthalene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-107 (5-10)

Sampled: 3/27/2019 13:05

Sample ID: 19C1572-01

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	0.34	mg/Kg dry	1	V-05	SW-846 8270D	4/2/19	4/3/19 15:47	IMR
3/4-Methylphenol	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Naphthalene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Nitrobenzene	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
2-Nitrophenol	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
4-Nitrophenol	ND	0.66	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Pentachlorophenol	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Phenanthrene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Phenol	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Pyrene	ND	0.17	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
1,2,4-Trichlorobenzene	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
2,4,5-Trichlorophenol	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
2,4,6-Trichlorophenol	ND	0.34	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 15:47	IMR
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorophenol		70.5	30-130					4/3/19 15:47	
Phenol-d6		82.6	30-130					4/3/19 15:47	
Nitrobenzene-d5		81.6	30-130					4/3/19 15:47	
2-Fluorobiphenyl		90.5	30-130					4/3/19 15:47	
2,4,6-Tribromophenol		94.2	30-130					4/3/19 15:47	
p-Terphenyl-d14		115	30-130					4/3/19 15:47	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-107 (5-10)

Sampled: 3/27/2019 13:05

Sample ID: 19C1572-01

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 16:55	JMB
Aroclor-1221 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 16:55	JMB
Aroclor-1232 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 16:55	JMB
Aroclor-1242 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 16:55	JMB
Aroclor-1248 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 16:55	JMB
Aroclor-1254 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 16:55	JMB
Aroclor-1260 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 16:55	JMB
Aroclor-1262 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 16:55	JMB
Aroclor-1268 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 16:55	JMB
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		97.9	30-150					4/4/19 16:55	
Decachlorobiphenyl [2]		93.9	30-150					4/4/19 16:55	
Tetrachloro-m-xylene [1]		97.4	30-150					4/4/19 16:55	
Tetrachloro-m-xylene [2]		95.2	30-150					4/4/19 16:55	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Sampled: 3/27/2019 13:05

Field Sample #: V-107 (5-10)

Sample ID: 19C1572-01

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	ND	8.4	mg/Kg dry	1		SW-846 8100 Modified	4/2/19	4/4/19 4:52	RMW
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorobiphenyl		69.1	40-140					4/4/19 4:52	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-107 (5-10)

Sampled: 3/27/2019 13:05

Sample ID: 19C1572-01

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:34	MJH
Arsenic	11	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/5/19 13:00	EJB
Barium	27	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:34	MJH
Beryllium	0.27	0.17	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:34	MJH
Cadmium	0.34	0.17	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:34	MJH
Chromium	12	0.34	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:34	MJH
Lead	6.1	0.51	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:34	MJH
Mercury	ND	0.025	mg/Kg dry	1		SW-846 7471B	4/2/19	4/3/19 12:58	TBC
Nickel	9.3	0.34	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:34	MJH
Selenium	ND	3.4	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:34	MJH
Silver	0.42	0.34	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:34	MJH
Thallium	ND	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 22:31	EJB
Vanadium	17	0.68	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:34	MJH
Zinc	26	0.68	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:34	MJH

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-107 (5-10)

Sampled: 3/27/2019 13:05

Sample ID: 19C1572-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	97.0		% Wt	1		SM 2540G	4/3/19	4/4/19 0:58	AVF
Ignitability	Absent		present/absent	1		SW-846 1030	4/2/19	4/2/19 19:15	DJM
pH @22.2°C	8.1		pH Units	1	H-03	SW-846 9045C	3/30/19	3/30/19 15:04	AIA
Reactive Cyanide	ND	3.9	mg/Kg	1		SW-846 9014	3/30/19	3/31/19 10:20	KMV
Reactive Sulfide	ND	19	mg/L	1		SW-846 9030A	3/30/19	3/31/19 9:50	KMV
Specific conductance	4.9	2.0	µmhos/cm	1		SM21-22 2510B Modified	3/31/19	3/31/19 11:45	KMV

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-108 (0-5)

Sampled: 3/27/2019 13:15

Sample ID: 19C1572-02

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Benzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Bromobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Bromochloromethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Bromodichloromethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Bromoform	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Bromomethane	ND	0.0088	mg/Kg dry	1	V-34	SW-846 8260C	4/1/19	4/1/19 15:43	MFF
2-Butanone (MEK)	ND	0.035	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
n-Butylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
sec-Butylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
tert-Butylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Carbon Disulfide	ND	0.0053	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Carbon Tetrachloride	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Chlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Chlorodibromomethane	ND	0.00088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Chloroethane	ND	0.0088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Chloroform	ND	0.0035	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Chloromethane	ND	0.0088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
2-Chlorotoluene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
4-Chlorotoluene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,2-Dibromoethane (EDB)	ND	0.00088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Dibromomethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,2-Dichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,3-Dichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,4-Dichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.0088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,1-Dichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,2-Dichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,1-Dichloroethylene	ND	0.0035	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
cis-1,2-Dichloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
trans-1,2-Dichloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,2-Dichloropropane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,3-Dichloropropane	ND	0.00088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
2,2-Dichloropropane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,1-Dichloropropene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
cis-1,3-Dichloropropene	ND	0.00088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
trans-1,3-Dichloropropene	ND	0.00088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Diethyl Ether	ND	0.0088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Diisopropyl Ether (DIPE)	ND	0.00088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,4-Dioxane	ND	0.088	mg/Kg dry	1	V-16	SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Ethylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-108 (0-5)

Sampled: 3/27/2019 13:15

Sample ID: 19C1572-02

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
2-Hexanone (MBK)	ND	0.018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Isopropylbenzene (Cumene)	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0035	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Methylene Chloride	ND	0.0088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Naphthalene	ND	0.0035	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
n-Propylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Styrene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,1,1,2-Tetrachloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,1,1,2,2-Tetrachloroethane	ND	0.00088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Tetrachloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Tetrahydrofuran	ND	0.0088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Toluene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,2,3-Trichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,2,4-Trichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,1,1-Trichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,1,2-Trichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Trichloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0088	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,2,3-Trichloropropane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,2,4-Trimethylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
1,3,5-Trimethylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
Vinyl Chloride	ND	0.0088	mg/Kg dry	1	L-04	SW-846 8260C	4/1/19	4/1/19 15:43	MFF
m+p Xylene	ND	0.0035	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF
o-Xylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 15:43	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	96.9	70-130	4/1/19 15:43
Toluene-d8	97.4	70-130	4/1/19 15:43
4-Bromofluorobenzene	96.6	70-130	4/1/19 15:43

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-108 (0-5)

Sampled: 3/27/2019 13:15

Sample ID: 19C1572-02

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Acenaphthylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Acetophenone	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Aniline	ND	0.36	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Benzo(a)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Benzo(a)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Benzo(b)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Benzo(g,h,i)perylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Benzo(k)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Bis(2-chloroethoxy)methane	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Bis(2-chloroethyl)ether	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Bis(2-chloroisopropyl)ether	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Bis(2-Ethylhexyl)phthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
4-Bromophenylphenylether	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Butylbenzylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
4-Chloroaniline	ND	0.69	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 16:09	IMR
2-Chloronaphthalene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
2-Chlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Chrysene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Dibenz(a,h)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Dibenzofuran	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Di-n-butylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
1,2-Dichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
1,3-Dichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
1,4-Dichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
3,3-Dichlorobenzidine	ND	0.18	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 16:09	IMR
2,4-Dichlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Diethylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
2,4-Dimethylphenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Dimethylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
2,4-Dinitrophenol	ND	0.69	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
2,4-Dinitrotoluene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
2,6-Dinitrotoluene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Di-n-octylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
1,2-Diphenylhydrazine/Azobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Fluorene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Hexachlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Hexachlorobutadiene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Hexachloroethane	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Indeno(1,2,3-cd)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Isophorone	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
2-Methylnaphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-108 (0-5)

Sampled: 3/27/2019 13:15

Sample ID: 19C1572-02

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	0.36	mg/Kg dry	1	V-05	SW-846 8270D	4/2/19	4/3/19 16:09	IMR
3/4-Methylphenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Naphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Nitrobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
2-Nitrophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
4-Nitrophenol	ND	0.69	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Pentachlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Phenanthrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Phenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
1,2,4-Trichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
2,4,5-Trichlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
2,4,6-Trichlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:09	IMR
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorophenol		73.4	30-130					4/3/19 16:09	
Phenol-d6		82.5	30-130					4/3/19 16:09	
Nitrobenzene-d5		83.1	30-130					4/3/19 16:09	
2-Fluorobiphenyl		88.6	30-130					4/3/19 16:09	
2,4,6-Tribromophenol		97.3	30-130					4/3/19 16:09	
p-Terphenyl-d14		111	30-130					4/3/19 16:09	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-108 (0-5)

Sampled: 3/27/2019 13:15

Sample ID: 19C1572-02

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:08	JMB
Aroclor-1221 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:08	JMB
Aroclor-1232 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:08	JMB
Aroclor-1242 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:08	JMB
Aroclor-1248 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:08	JMB
Aroclor-1254 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:08	JMB
Aroclor-1260 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:08	JMB
Aroclor-1262 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:08	JMB
Aroclor-1268 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:08	JMB
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		99.1	30-150					4/4/19 17:08	
Decachlorobiphenyl [2]		95.7	30-150					4/4/19 17:08	
Tetrachloro-m-xylene [1]		98.6	30-150					4/4/19 17:08	
Tetrachloro-m-xylene [2]		96.8	30-150					4/4/19 17:08	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Sampled: 3/27/2019 13:15

Field Sample #: V-108 (0-5)

Sample ID: 19C1572-02

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	ND	8.8	mg/Kg dry	1		SW-846 8100 Modified	4/2/19	4/4/19 10:44	RMW
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
2-Fluorobiphenyl	75.9		40-140					4/4/19 10:44	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Sampled: 3/27/2019 13:15

Field Sample #: V-108 (0-5)

Sample ID: 19C1572-02

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:41	MJH
Arsenic	5.6	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/5/19 13:05	EJB
Barium	30	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:41	MJH
Beryllium	0.28	0.17	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:41	MJH
Cadmium	0.19	0.17	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:41	MJH
Chromium	12	0.35	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:41	MJH
Lead	5.2	0.52	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:41	MJH
Mercury	ND	0.026	mg/Kg dry	1		SW-846 7471B	4/2/19	4/3/19 12:59	TBC
Nickel	9.4	0.35	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:41	MJH
Selenium	ND	3.5	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:41	MJH
Silver	0.41	0.35	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:41	MJH
Thallium	ND	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 22:37	EJB
Vanadium	17	0.69	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:41	MJH
Zinc	25	0.69	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:41	MJH

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-108 (0-5)

Sampled: 3/27/2019 13:15

Sample ID: 19C1572-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	93.8		% Wt	1		SM 2540G	4/3/19	4/4/19 0:59	AVF
Ignitability	Absent		present/absent	1		SW-846 1030	4/2/19	4/2/19 19:15	DJM
pH @21.9°C	8.2		pH Units	1	H-03	SW-846 9045C	3/30/19	3/30/19 15:04	AIA
Reactive Cyanide	ND	3.9	mg/Kg	1		SW-846 9014	3/30/19	3/31/19 10:20	KMV
Reactive Sulfide	ND	20	mg/L	1		SW-846 9030A	3/30/19	3/31/19 9:50	KMV
Specific conductance	5.7	2.0	µmhos/cm	1		SM21-22 2510B Modified	3/31/19	3/31/19 11:45	KMV

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-109 (5-10)

Sampled: 3/27/2019 13:25

Sample ID: 19C1572-03

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.15	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Benzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Bromobenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Bromochloromethane	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Bromodichloromethane	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Bromoform	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Bromomethane	ND	0.015	mg/Kg dry	1	V-34	SW-846 8260C	4/1/19	4/1/19 16:08	MFF
2-Butanone (MEK)	ND	0.059	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
n-Butylbenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
sec-Butylbenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
tert-Butylbenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Carbon Disulfide	ND	0.0089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Carbon Tetrachloride	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Chlorobenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Chlorodibromomethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Chloroethane	ND	0.015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Chloroform	ND	0.0059	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Chloromethane	ND	0.015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
2-Chlorotoluene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
4-Chlorotoluene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,2-Dibromoethane (EDB)	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Dibromomethane	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,2-Dichlorobenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,3-Dichlorobenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,4-Dichlorobenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,1-Dichloroethane	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,2-Dichloroethane	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,1-Dichloroethylene	ND	0.0059	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
cis-1,2-Dichloroethylene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
trans-1,2-Dichloroethylene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,2-Dichloropropane	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,3-Dichloropropane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
2,2-Dichloropropane	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,1-Dichloropropene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
cis-1,3-Dichloropropene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
trans-1,3-Dichloropropene	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Diethyl Ether	ND	0.015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Diisopropyl Ether (DIPE)	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,4-Dioxane	ND	0.15	mg/Kg dry	1	V-16	SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Ethylbenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-109 (5-10)

Sampled: 3/27/2019 13:25

Sample ID: 19C1572-03

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
2-Hexanone (MBK)	ND	0.030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Isopropylbenzene (Cumene)	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0059	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Methylene Chloride	ND	0.015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Naphthalene	ND	0.0059	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
n-Propylbenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Styrene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,1,1,2-Tetrachloroethane	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,1,1,2,2-Tetrachloroethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Tetrachloroethylene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Tetrahydrofuran	ND	0.015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Toluene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,2,3-Trichlorobenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,2,4-Trichlorobenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,1,1-Trichloroethane	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,1,2-Trichloroethane	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Trichloroethylene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Trichlorofluoromethane (Freon 11)	ND	0.015	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,2,3-Trichloropropane	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,2,4-Trimethylbenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
1,3,5-Trimethylbenzene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
Vinyl Chloride	ND	0.015	mg/Kg dry	1	L-04	SW-846 8260C	4/1/19	4/1/19 16:08	MFF
m+p Xylene	ND	0.0059	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF
o-Xylene	ND	0.0030	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:08	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	95.9	70-130	4/1/19 16:08
Toluene-d8	96.4	70-130	4/1/19 16:08
4-Bromofluorobenzene	96.0	70-130	4/1/19 16:08

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-109 (5-10)

Sampled: 3/27/2019 13:25

Sample ID: 19C1572-03

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Acenaphthylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Acetophenone	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Aniline	ND	0.36	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Benzo(a)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Benzo(a)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Benzo(b)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Benzo(g,h,i)perylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Benzo(k)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Bis(2-chloroethoxy)methane	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Bis(2-chloroethyl)ether	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Bis(2-chloroisopropyl)ether	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Bis(2-Ethylhexyl)phthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
4-Bromophenylphenylether	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Butylbenzylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
4-Chloroaniline	ND	0.69	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 16:31	IMR
2-Chloronaphthalene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
2-Chlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Chrysene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Dibenz(a,h)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Dibenzofuran	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Di-n-butylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
1,2-Dichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
1,3-Dichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
1,4-Dichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
3,3-Dichlorobenzidine	ND	0.18	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 16:31	IMR
2,4-Dichlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Diethylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
2,4-Dimethylphenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Dimethylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
2,4-Dinitrophenol	ND	0.69	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
2,4-Dinitrotoluene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
2,6-Dinitrotoluene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Di-n-octylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
1,2-Diphenylhydrazine/Azobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Fluorene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Hexachlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Hexachlorobutadiene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Hexachloroethane	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Indeno(1,2,3-cd)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Isophorone	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
2-Methylnaphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-109 (5-10)

Sampled: 3/27/2019 13:25

Sample ID: 19C1572-03

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	0.36	mg/Kg dry	1	V-05	SW-846 8270D	4/2/19	4/3/19 16:31	IMR
3/4-Methylphenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Naphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Nitrobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
2-Nitrophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
4-Nitrophenol	ND	0.69	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Pentachlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Phenanthrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Phenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
1,2,4-Trichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
2,4,5-Trichlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
2,4,6-Trichlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:31	IMR
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
2-Fluorophenol	76.2		30-130				4/3/19 16:31		
Phenol-d6	83.9		30-130				4/3/19 16:31		
Nitrobenzene-d5	86.0		30-130				4/3/19 16:31		
2-Fluorobiphenyl	89.7		30-130				4/3/19 16:31		
2,4,6-Tribromophenol	96.2		30-130				4/3/19 16:31		
p-Terphenyl-d14	113		30-130				4/3/19 16:31		

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-109 (5-10)

Sampled: 3/27/2019 13:25

Sample ID: 19C1572-03

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:20	JMB
Aroclor-1221 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:20	JMB
Aroclor-1232 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:20	JMB
Aroclor-1242 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:20	JMB
Aroclor-1248 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:20	JMB
Aroclor-1254 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:20	JMB
Aroclor-1260 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:20	JMB
Aroclor-1262 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:20	JMB
Aroclor-1268 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:20	JMB
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		101	30-150					4/4/19 17:20	
Decachlorobiphenyl [2]		98.1	30-150					4/4/19 17:20	
Tetrachloro-m-xylene [1]		92.0	30-150					4/4/19 17:20	
Tetrachloro-m-xylene [2]		90.1	30-150					4/4/19 17:20	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-109 (5-10)

Sampled: 3/27/2019 13:25

Sample ID: 19C1572-03

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	ND	8.7	mg/Kg dry	1		SW-846 8100 Modified	4/2/19	4/4/19 8:34	RMW
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
2-Fluorobiphenyl	73.6		40-140					4/4/19 8:34	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-109 (5-10)

Sampled: 3/27/2019 13:25

Sample ID: 19C1572-03

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.8	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:47	MJH
Arsenic	6.5	1.8	mg/Kg dry	1		SW-846 6010D	4/3/19	4/5/19 13:10	EJB
Barium	33	1.8	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:47	MJH
Beryllium	0.28	0.18	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:47	MJH
Cadmium	0.21	0.18	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:47	MJH
Chromium	12	0.35	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:47	MJH
Lead	5.0	0.53	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:47	MJH
Mercury	ND	0.026	mg/Kg dry	1		SW-846 7471B	4/2/19	4/3/19 13:01	TBC
Nickel	9.6	0.35	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:47	MJH
Selenium	ND	3.5	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:47	MJH
Silver	0.37	0.35	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:47	MJH
Thallium	ND	1.8	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 22:43	EJB
Vanadium	17	0.71	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:47	MJH
Zinc	23	0.71	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:47	MJH

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-109 (5-10)

Sampled: 3/27/2019 13:25

Sample ID: 19C1572-03

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	94.2		% Wt	1		SM 2540G	4/3/19	4/4/19 0:59	AVF
Ignitability	Absent		present/absent	1		SW-846 1030	4/2/19	4/2/19 19:15	DJM
pH @22.1°C	8.1		pH Units	1	H-03	SW-846 9045C	3/30/19	3/30/19 15:04	AIA
Reactive Cyanide	ND	4.0	mg/Kg	1		SW-846 9014	3/30/19	3/31/19 10:20	KMV
Reactive Sulfide	ND	20	mg/L	1		SW-846 9030A	3/30/19	3/31/19 9:50	KMV
Specific conductance	5.8	2.0	µmhos/cm	1		SM21-22 2510B Modified	3/31/19	3/31/19 11:45	KMV

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-110 (5-10)

Sampled: 3/27/2019 13:35

Sample ID: 19C1572-04

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.11	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.0011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Benzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Bromobenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Bromochloromethane	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Bromodichloromethane	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Bromoform	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Bromomethane	ND	0.011	mg/Kg dry	1	V-34	SW-846 8260C	4/1/19	4/1/19 16:32	MFF
2-Butanone (MEK)	ND	0.046	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
n-Butylbenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
sec-Butylbenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
tert-Butylbenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.0011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Carbon Disulfide	ND	0.0068	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Carbon Tetrachloride	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Chlorobenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Chlorodibromomethane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Chloroethane	ND	0.011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Chloroform	ND	0.0046	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Chloromethane	ND	0.011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
2-Chlorotoluene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
4-Chlorotoluene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,2-Dibromoethane (EDB)	ND	0.0011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Dibromomethane	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,2-Dichlorobenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,3-Dichlorobenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,4-Dichlorobenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,1-Dichloroethane	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,2-Dichloroethane	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,1-Dichloroethylene	ND	0.0046	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
cis-1,2-Dichloroethylene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
trans-1,2-Dichloroethylene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,2-Dichloropropane	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,3-Dichloropropane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
2,2-Dichloropropane	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,1-Dichloropropene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
cis-1,3-Dichloropropene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
trans-1,3-Dichloropropene	ND	0.0011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Diethyl Ether	ND	0.011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Diisopropyl Ether (DIPE)	ND	0.0011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,4-Dioxane	ND	0.11	mg/Kg dry	1	V-16	SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Ethylbenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-110 (5-10)

Sampled: 3/27/2019 13:35

Sample ID: 19C1572-04

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
2-Hexanone (MBK)	ND	0.023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Isopropylbenzene (Cumene)	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0046	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Methylene Chloride	ND	0.011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Naphthalene	ND	0.0046	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
n-Propylbenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Styrene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,1,1,2-Tetrachloroethane	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,1,1,2,2-Tetrachloroethane	ND	0.0011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Tetrachloroethylene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Tetrahydrofuran	ND	0.011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Toluene	0.0045	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,2,3-Trichlorobenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,2,4-Trichlorobenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,1,1-Trichloroethane	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,1,2-Trichloroethane	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Trichloroethylene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Trichlorofluoromethane (Freon 11)	ND	0.011	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,2,3-Trichloropropane	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,2,4-Trimethylbenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
1,3,5-Trimethylbenzene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
Vinyl Chloride	ND	0.011	mg/Kg dry	1	L-04	SW-846 8260C	4/1/19	4/1/19 16:32	MFF
m+p Xylene	ND	0.0046	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF
o-Xylene	ND	0.0023	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 16:32	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	95.8	70-130	
Toluene-d8	96.5	70-130	
4-Bromofluorobenzene	96.0	70-130	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-110 (5-10)

Sampled: 3/27/2019 13:35

Sample ID: 19C1572-04

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Acenaphthylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Acetophenone	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Aniline	ND	0.35	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Benzo(a)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Benzo(a)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Benzo(b)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Benzo(g,h,i)perylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Benzo(k)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Bis(2-chloroethoxy)methane	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Bis(2-chloroethyl)ether	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Bis(2-chloroisopropyl)ether	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Bis(2-Ethylhexyl)phthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
4-Bromophenylphenylether	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Butylbenzylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
4-Chloroaniline	ND	0.68	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 16:54	IMR
2-Chloronaphthalene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
2-Chlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Chrysene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Dibenz(a,h)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Dibenzofuran	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Di-n-butylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
1,2-Dichlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
1,3-Dichlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
1,4-Dichlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
3,3-Dichlorobenzidine	ND	0.18	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 16:54	IMR
2,4-Dichlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Diethylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
2,4-Dimethylphenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Dimethylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
2,4-Dinitrophenol	ND	0.68	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
2,4-Dinitrotoluene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
2,6-Dinitrotoluene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Di-n-octylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
1,2-Diphenylhydrazine/Azobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Fluorene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Hexachlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Hexachlorobutadiene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Hexachloroethane	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Indeno(1,2,3-cd)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Isophorone	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
2-Methylnaphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-110 (5-10)

Sampled: 3/27/2019 13:35

Sample ID: 19C1572-04

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	0.35	mg/Kg dry	1	V-05	SW-846 8270D	4/2/19	4/3/19 16:54	IMR
3/4-Methylphenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Naphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Nitrobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
2-Nitrophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
4-Nitrophenol	ND	0.68	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Pentachlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Phenanthrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Phenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
1,2,4-Trichlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
2,4,5-Trichlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
2,4,6-Trichlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 16:54	IMR
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorophenol		75.5	30-130					4/3/19 16:54	
Phenol-d6		86.9	30-130					4/3/19 16:54	
Nitrobenzene-d5		87.7	30-130					4/3/19 16:54	
2-Fluorobiphenyl		93.9	30-130					4/3/19 16:54	
2,4,6-Tribromophenol		99.4	30-130					4/3/19 16:54	
p-Terphenyl-d14		114	30-130					4/3/19 16:54	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-110 (5-10)

Sampled: 3/27/2019 13:35

Sample ID: 19C1572-04

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:33	JMB
Aroclor-1221 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:33	JMB
Aroclor-1232 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:33	JMB
Aroclor-1242 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:33	JMB
Aroclor-1248 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:33	JMB
Aroclor-1254 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:33	JMB
Aroclor-1260 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:33	JMB
Aroclor-1262 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:33	JMB
Aroclor-1268 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:33	JMB
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		98.1	30-150					4/4/19 17:33	
Decachlorobiphenyl [2]		95.7	30-150					4/4/19 17:33	
Tetrachloro-m-xylene [1]		94.5	30-150					4/4/19 17:33	
Tetrachloro-m-xylene [2]		92.4	30-150					4/4/19 17:33	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Sampled: 3/27/2019 13:35

Field Sample #: V-110 (5-10)

Sample ID: 19C1572-04

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	11	8.6	mg/Kg dry	1		SW-846 8100 Modified	4/2/19	4/4/19 8:55	RMW
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
2-Fluorobiphenyl	74.3		40-140					4/4/19 8:55	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Sampled: 3/27/2019 13:35

Field Sample #: V-110 (5-10)

Sample ID: 19C1572-04

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:53	MJH
Arsenic	6.4	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/5/19 13:15	EJB
Barium	26	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:53	MJH
Beryllium	0.26	0.17	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:53	MJH
Cadmium	0.23	0.17	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:53	MJH
Chromium	33	0.35	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:53	MJH
Lead	3.9	0.52	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:53	MJH
Mercury	ND	0.028	mg/Kg dry	1		SW-846 7471B	4/2/19	4/3/19 13:03	TBC
Nickel	11	0.35	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:53	MJH
Selenium	ND	3.5	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:53	MJH
Silver	ND	0.35	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:53	MJH
Thallium	ND	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 22:50	EJB
Vanadium	17	0.69	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:53	MJH
Zinc	24	0.69	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 16:53	MJH

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-110 (5-10)

Sampled: 3/27/2019 13:35

Sample ID: 19C1572-04

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	94.8		% Wt	1		SM 2540G	4/3/19	4/4/19 0:59	AVF
Ignitability	Absent		present/absent	1		SW-846 1030	4/2/19	4/2/19 19:15	DJM
pH @22.2°C	8.5		pH Units	1	H-03	SW-846 9045C	3/30/19	3/30/19 15:04	AIA
Reactive Cyanide	ND	4.0	mg/Kg	1		SW-846 9014	3/30/19	3/31/19 10:20	KMV
Reactive Sulfide	ND	20	mg/L	1		SW-846 9030A	3/30/19	3/31/19 9:50	KMV
Specific conductance	5.3	2.0	µmhos/cm	1		SM21-22 2510B Modified	3/31/19	3/31/19 11:45	KMV

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-111 (0-10)

Sampled: 3/27/2019 13:45

Sample ID: 19C1572-05

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Benzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Bromobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Bromochloromethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Bromodichloromethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Bromoform	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Bromomethane	ND	0.0094	mg/Kg dry	1	V-34	SW-846 8260C	4/1/19	4/1/19 20:16	MFF
2-Butanone (MEK)	ND	0.038	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
n-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
sec-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
tert-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Carbon Disulfide	ND	0.0057	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Carbon Tetrachloride	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Chlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Chlorodibromomethane	ND	0.00094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Chloroethane	ND	0.0094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Chloroform	ND	0.0038	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Chloromethane	ND	0.0094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
2-Chlorotoluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
4-Chlorotoluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,2-Dibromoethane (EDB)	ND	0.00094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Dibromomethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,2-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,3-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,4-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.0094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,1-Dichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,2-Dichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,1-Dichloroethylene	ND	0.0038	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
cis-1,2-Dichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
trans-1,2-Dichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,2-Dichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,3-Dichloropropane	ND	0.00094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
2,2-Dichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,1-Dichloropropene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
cis-1,3-Dichloropropene	ND	0.00094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
trans-1,3-Dichloropropene	ND	0.00094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Diethyl Ether	ND	0.0094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Diisopropyl Ether (DIPE)	ND	0.00094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,4-Dioxane	ND	0.094	mg/Kg dry	1	V-16	SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Ethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-111 (0-10)

Sampled: 3/27/2019 13:45

Sample ID: 19C1572-05

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
2-Hexanone (MBK)	ND	0.019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Isopropylbenzene (Cumene)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0038	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Methylene Chloride	ND	0.0094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Naphthalene	ND	0.0038	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
n-Propylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Styrene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,1,1,2-Tetrachloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,1,1,2,2-Tetrachloroethane	ND	0.00094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Tetrachloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Tetrahydrofuran	ND	0.0094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Toluene	0.0041	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,2,3-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,2,4-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,1,1-Trichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,1,2-Trichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Trichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0094	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,2,3-Trichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,2,4-Trimethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
1,3,5-Trimethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
Vinyl Chloride	ND	0.0094	mg/Kg dry	1	L-04	SW-846 8260C	4/1/19	4/1/19 20:16	MFF
m+p Xylene	ND	0.0038	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF
o-Xylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:16	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	98.7	70-130	
Toluene-d8	97.2	70-130	
4-Bromofluorobenzene	95.0	70-130	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-111 (0-10)

Sampled: 3/27/2019 13:45

Sample ID: 19C1572-05

Sample Matrix: Soil

Semivolatle Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Acenaphthylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Acetophenone	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Aniline	ND	0.35	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Benzo(a)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Benzo(a)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Benzo(b)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Benzo(g,h,i)perylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Benzo(k)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Bis(2-chloroethoxy)methane	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Bis(2-chloroethyl)ether	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Bis(2-chloroisopropyl)ether	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Bis(2-Ethylhexyl)phthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
4-Bromophenylphenylether	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Butylbenzylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
4-Chloroaniline	ND	0.68	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 17:16	IMR
2-Chloronaphthalene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
2-Chlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Chrysene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Dibenz(a,h)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Dibenzofuran	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Di-n-butylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
1,2-Dichlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
1,3-Dichlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
1,4-Dichlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
3,3-Dichlorobenzidine	ND	0.18	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 17:16	IMR
2,4-Dichlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Diethylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
2,4-Dimethylphenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Dimethylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
2,4-Dinitrophenol	ND	0.68	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
2,4-Dinitrotoluene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
2,6-Dinitrotoluene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Di-n-octylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
1,2-Diphenylhydrazine/Azobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Fluorene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Hexachlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Hexachlorobutadiene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Hexachloroethane	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Indeno(1,2,3-cd)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Isophorone	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
2-Methylnaphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-111 (0-10)

Sampled: 3/27/2019 13:45

Sample ID: 19C1572-05

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	0.35	mg/Kg dry	1	V-05	SW-846 8270D	4/2/19	4/3/19 17:16	IMR
3/4-Methylphenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Naphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Nitrobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
2-Nitrophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
4-Nitrophenol	ND	0.68	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Pentachlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Phenanthrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Phenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
1,2,4-Trichlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
2,4,5-Trichlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
2,4,6-Trichlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:16	IMR
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorophenol		80.7	30-130					4/3/19 17:16	
Phenol-d6		87.7	30-130					4/3/19 17:16	
Nitrobenzene-d5		90.6	30-130					4/3/19 17:16	
2-Fluorobiphenyl		90.5	30-130					4/3/19 17:16	
2,4,6-Tribromophenol		98.3	30-130					4/3/19 17:16	
p-Terphenyl-d14		109	30-130					4/3/19 17:16	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-111 (0-10)

Sampled: 3/27/2019 13:45

Sample ID: 19C1572-05

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:46	JMB
Aroclor-1221 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:46	JMB
Aroclor-1232 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:46	JMB
Aroclor-1242 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:46	JMB
Aroclor-1248 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:46	JMB
Aroclor-1254 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:46	JMB
Aroclor-1260 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:46	JMB
Aroclor-1262 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:46	JMB
Aroclor-1268 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:46	JMB
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		97.3	30-150					4/4/19 17:46	
Decachlorobiphenyl [2]		92.2	30-150					4/4/19 17:46	
Tetrachloro-m-xylene [1]		101	30-150					4/4/19 17:46	
Tetrachloro-m-xylene [2]		97.5	30-150					4/4/19 17:46	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-111 (0-10)

Sampled: 3/27/2019 13:45

Sample ID: 19C1572-05

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	13	8.6	mg/Kg dry	1		SW-846 8100 Modified	4/2/19	4/4/19 10:16	RMW
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorobiphenyl		81.4	40-140					4/4/19 10:16	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Sampled: 3/27/2019 13:45

Field Sample #: V-111 (0-10)

Sample ID: 19C1572-05

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:00	MJH
Arsenic	11	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/5/19 13:20	EJB
Barium	32	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:00	MJH
Beryllium	0.31	0.17	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:00	MJH
Cadmium	0.37	0.17	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:00	MJH
Chromium	11	0.34	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:00	MJH
Lead	5.6	0.52	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:00	MJH
Mercury	ND	0.026	mg/Kg dry	1		SW-846 7471B	4/2/19	4/3/19 13:04	TBC
Nickel	11	0.34	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:00	MJH
Selenium	ND	3.4	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:00	MJH
Silver	0.44	0.34	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:00	MJH
Thallium	ND	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 22:56	EJB
Vanadium	17	0.69	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:00	MJH
Zinc	25	0.69	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:00	MJH

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-111 (0-10)

Sampled: 3/27/2019 13:45

Sample ID: 19C1572-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	95.2		% Wt	1		SM 2540G	4/3/19	4/4/19 0:59	AVF
Ignitability	Absent		present/absent	1		SW-846 1030	4/2/19	4/2/19 19:15	DJM
pH @22°C	8.2		pH Units	1	H-03	SW-846 9045C	3/30/19	3/30/19 15:04	AIA
Reactive Cyanide	ND	3.9	mg/Kg	1		SW-846 9014	3/30/19	3/31/19 10:20	KMV
Reactive Sulfide	ND	20	mg/L	1		SW-846 9030A	3/30/19	3/31/19 9:50	KMV
Specific conductance	6.5	2.0	µmhos/cm	1		SM21-22 2510B Modified	3/31/19	3/31/19 11:45	KMV

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-112 (0-5)

Sampled: 3/27/2019 14:00

Sample ID: 19C1572-06

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Benzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Bromobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Bromochloromethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Bromodichloromethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Bromoform	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Bromomethane	ND	0.0093	mg/Kg dry	1	V-34	SW-846 8260C	4/1/19	4/1/19 20:40	MFF
2-Butanone (MEK)	ND	0.037	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
n-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
sec-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
tert-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Carbon Disulfide	ND	0.0056	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Carbon Tetrachloride	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Chlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Chlorodibromomethane	ND	0.00093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Chloroethane	ND	0.0093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Chloroform	ND	0.0037	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Chloromethane	ND	0.0093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
2-Chlorotoluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
4-Chlorotoluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,2-Dibromoethane (EDB)	ND	0.00093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Dibromomethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,2-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,3-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,4-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.0093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,1-Dichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,2-Dichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,1-Dichloroethylene	ND	0.0037	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
cis-1,2-Dichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
trans-1,2-Dichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,2-Dichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,3-Dichloropropane	ND	0.00093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
2,2-Dichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,1-Dichloropropene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
cis-1,3-Dichloropropene	ND	0.00093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
trans-1,3-Dichloropropene	ND	0.00093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Diethyl Ether	ND	0.0093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Diisopropyl Ether (DIPE)	ND	0.00093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,4-Dioxane	ND	0.093	mg/Kg dry	1	V-16	SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Ethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-112 (0-5)

Sampled: 3/27/2019 14:00

Sample ID: 19C1572-06

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
2-Hexanone (MBK)	ND	0.019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Isopropylbenzene (Cumene)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0037	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Methylene Chloride	ND	0.0093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Naphthalene	ND	0.0037	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
n-Propylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Styrene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,1,1,2-Tetrachloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,1,1,2,2-Tetrachloroethane	ND	0.00093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Tetrachloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Tetrahydrofuran	ND	0.0093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Toluene	0.0030	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,2,3-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,2,4-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,1,1-Trichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,1,2-Trichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Trichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0093	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,2,3-Trichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,2,4-Trimethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
1,3,5-Trimethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
Vinyl Chloride	ND	0.0093	mg/Kg dry	1	L-04	SW-846 8260C	4/1/19	4/1/19 20:40	MFF
m+p Xylene	ND	0.0037	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF
o-Xylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 20:40	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	95.7	70-130	
Toluene-d8	96.8	70-130	
4-Bromofluorobenzene	95.6	70-130	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-112 (0-5)

Sampled: 3/27/2019 14:00

Sample ID: 19C1572-06

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Acenaphthylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Acetophenone	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Aniline	ND	0.35	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Benzo(a)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Benzo(a)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Benzo(b)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Benzo(g,h,i)perylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Benzo(k)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Bis(2-chloroethoxy)methane	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Bis(2-chloroethyl)ether	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Bis(2-chloroisopropyl)ether	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Bis(2-Ethylhexyl)phthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
4-Bromophenylphenylether	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Butylbenzylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
4-Chloroaniline	ND	0.68	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 17:38	IMR
2-Chloronaphthalene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
2-Chlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Chrysene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Dibenz(a,h)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Dibenzofuran	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Di-n-butylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
1,2-Dichlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
1,3-Dichlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
1,4-Dichlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
3,3-Dichlorobenzidine	ND	0.18	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 17:38	IMR
2,4-Dichlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Diethylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
2,4-Dimethylphenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Dimethylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
2,4-Dinitrophenol	ND	0.68	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
2,4-Dinitrotoluene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
2,6-Dinitrotoluene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Di-n-octylphthalate	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
1,2-Diphenylhydrazine/Azobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Fluorene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Hexachlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Hexachlorobutadiene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Hexachloroethane	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Indeno(1,2,3-cd)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Isophorone	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
2-Methylnaphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-112 (0-5)

Sampled: 3/27/2019 14:00

Sample ID: 19C1572-06

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	0.35	mg/Kg dry	1	V-05	SW-846 8270D	4/2/19	4/3/19 17:38	IMR
3/4-Methylphenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Naphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Nitrobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
2-Nitrophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
4-Nitrophenol	ND	0.68	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Pentachlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Phenanthrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Phenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
1,2,4-Trichlorobenzene	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
2,4,5-Trichlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
2,4,6-Trichlorophenol	ND	0.35	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 17:38	IMR
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorophenol		65.6	30-130					4/3/19 17:38	
Phenol-d6		73.2	30-130					4/3/19 17:38	
Nitrobenzene-d5		72.2	30-130					4/3/19 17:38	
2-Fluorobiphenyl		78.4	30-130					4/3/19 17:38	
2,4,6-Tribromophenol		92.8	30-130					4/3/19 17:38	
p-Terphenyl-d14		99.9	30-130					4/3/19 17:38	

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Field Sample #: V-112 (0-5)

Sampled: 3/27/2019 14:00

Sample ID: 19C1572-06

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:59	JMB
Aroclor-1221 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:59	JMB
Aroclor-1232 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:59	JMB
Aroclor-1242 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:59	JMB
Aroclor-1248 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:59	JMB
Aroclor-1254 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:59	JMB
Aroclor-1260 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:59	JMB
Aroclor-1262 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:59	JMB
Aroclor-1268 [1]	ND	0.079	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 17:59	JMB
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		97.6	30-150					4/4/19 17:59	
Decachlorobiphenyl [2]		91.5	30-150					4/4/19 17:59	
Tetrachloro-m-xylene [1]		99.7	30-150					4/4/19 17:59	
Tetrachloro-m-xylene [2]		96.5	30-150					4/4/19 17:59	

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Sample ID: 19C1572-06

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	ND	8.6	mg/Kg dry	1		SW-846 8100 Modified	4/2/19	4/4/19 9:15	RMW
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorobiphenyl		73.1	40-140					4/4/19 9:15	

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Field Sample #: V-112 (0-5)

Sampled: 3/27/2019 14:00

Sample ID: 19C1572-06

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.8	mg/Kg dry	1	MS-07	SW-846 6010D	4/3/19	4/4/19 15:47	MJH
Arsenic	5.0	1.8	mg/Kg dry	1		SW-846 6010D	4/3/19	4/5/19 12:19	EJB
Barium	21	1.8	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 15:47	MJH
Beryllium	0.25	0.18	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 15:47	MJH
Cadmium	ND	0.18	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 15:47	MJH
Chromium	9.1	0.35	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 15:47	MJH
Lead	3.9	0.53	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 15:47	MJH
Mercury	ND	0.027	mg/Kg dry	1		SW-846 7471B	4/2/19	4/3/19 13:06	TBC
Nickel	7.1	0.35	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 15:47	MJH
Selenium	ND	3.5	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 15:47	MJH
Silver	ND	0.35	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 15:47	MJH
Thallium	ND	1.8	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 21:40	EJB
Vanadium	12	0.71	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 15:47	MJH
Zinc	17	0.71	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 15:47	MJH

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Sampled: 3/27/2019 14:00

Sample ID: 19C1572-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	94.5		% Wt	1		SM 2540G	4/3/19	4/4/19 0:59	AVF
Ignitability	Absent		present/absent	1		SW-846 1030	4/2/19	4/2/19 19:15	DJM
pH @20.7°C	6.3		pH Units	1	H-03	SW-846 9045C	3/30/19	3/30/19 15:04	AIA
Reactive Cyanide	ND	3.9	mg/Kg	1		SW-846 9014	3/30/19	3/31/19 10:20	KMV
Reactive Sulfide	ND	20	mg/L	1		SW-846 9030A	3/30/19	3/31/19 9:50	KMV
Specific conductance	4.7	2.0	µmhos/cm	1		SM21-22 2510B Modified	4/1/19	4/1/19 11:30	EC

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-113 (0-5)

Sampled: 3/28/2019 11:00

Sample ID: 19C1572-07

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Benzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Bromobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Bromochloromethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Bromodichloromethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Bromoform	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Bromomethane	ND	0.0089	mg/Kg dry	1	V-34	SW-846 8260C	4/1/19	4/1/19 21:04	MFF
2-Butanone (MEK)	ND	0.036	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
n-Butylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
sec-Butylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
tert-Butylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Carbon Disulfide	ND	0.0053	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Carbon Tetrachloride	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Chlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Chlorodibromomethane	ND	0.00089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Chloroethane	ND	0.0089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Chloroform	ND	0.0036	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Chloromethane	ND	0.0089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
2-Chlorotoluene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
4-Chlorotoluene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,2-Dibromoethane (EDB)	ND	0.00089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Dibromomethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,2-Dichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,3-Dichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,4-Dichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.0089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,1-Dichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,2-Dichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,1-Dichloroethylene	ND	0.0036	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
cis-1,2-Dichloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
trans-1,2-Dichloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,2-Dichloropropane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,3-Dichloropropane	ND	0.00089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
2,2-Dichloropropane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,1-Dichloropropene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
cis-1,3-Dichloropropene	ND	0.00089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
trans-1,3-Dichloropropene	ND	0.00089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Diethyl Ether	ND	0.0089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Diisopropyl Ether (DIPE)	ND	0.00089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,4-Dioxane	ND	0.089	mg/Kg dry	1	V-16	SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Ethylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-113 (0-5)

Sampled: 3/28/2019 11:00

Sample ID: 19C1572-07

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
2-Hexanone (MBK)	ND	0.018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Isopropylbenzene (Cumene)	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0036	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Methylene Chloride	ND	0.0089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Naphthalene	ND	0.0036	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
n-Propylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Styrene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,1,1,2-Tetrachloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,1,1,2,2-Tetrachloroethane	ND	0.00089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Tetrachloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Tetrahydrofuran	ND	0.0089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Toluene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,2,3-Trichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,2,4-Trichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,1,1-Trichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,1,2-Trichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Trichloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0089	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,2,3-Trichloropropane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,2,4-Trimethylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
1,3,5-Trimethylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
Vinyl Chloride	ND	0.0089	mg/Kg dry	1	L-04	SW-846 8260C	4/1/19	4/1/19 21:04	MFF
m+p Xylene	ND	0.0036	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF
o-Xylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:04	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	96.4	70-130	4/1/19 21:04
Toluene-d8	95.8	70-130	4/1/19 21:04
4-Bromofluorobenzene	94.6	70-130	4/1/19 21:04

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Field Sample #: V-113 (0-5)

Sampled: 3/28/2019 11:00

Sample ID: 19C1572-07

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Acenaphthylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Acetophenone	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Aniline	ND	0.36	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Benzo(a)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Benzo(a)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Benzo(b)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Benzo(g,h,i)perylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Benzo(k)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Bis(2-chloroethoxy)methane	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Bis(2-chloroethyl)ether	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Bis(2-chloroisopropyl)ether	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Bis(2-Ethylhexyl)phthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
4-Bromophenylphenylether	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Butylbenzylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
4-Chloroaniline	ND	0.71	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 18:00	IMR
2-Chloronaphthalene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
2-Chlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Chrysene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Dibenz(a,h)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Dibenzofuran	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Di-n-butylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
1,2-Dichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
1,3-Dichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
1,4-Dichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
3,3-Dichlorobenzidine	ND	0.18	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 18:00	IMR
2,4-Dichlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Diethylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
2,4-Dimethylphenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Dimethylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
2,4-Dinitrophenol	ND	0.71	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
2,4-Dinitrotoluene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
2,6-Dinitrotoluene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Di-n-octylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
1,2-Diphenylhydrazine/Azobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Fluorene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Hexachlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Hexachlorobutadiene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Hexachloroethane	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Indeno(1,2,3-cd)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Isophorone	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
2-Methylnaphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-113 (0-5)

Sampled: 3/28/2019 11:00

Sample ID: 19C1572-07

Sample Matrix: Soil

Semivolatle Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	0.36	mg/Kg dry	1	V-05	SW-846 8270D	4/2/19	4/3/19 18:00	IMR
3/4-Methylphenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Naphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Nitrobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
2-Nitrophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
4-Nitrophenol	ND	0.71	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Pentachlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Phenanthrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Phenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
Pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
1,2,4-Trichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
2,4,5-Trichlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR
2,4,6-Trichlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:00	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
2-Fluorophenol	78.8	30-130	4/3/19 18:00
Phenol-d6	87.4	30-130	4/3/19 18:00
Nitrobenzene-d5	87.4	30-130	4/3/19 18:00
2-Fluorobiphenyl	87.6	30-130	4/3/19 18:00
2,4,6-Tribromophenol	102	30-130	4/3/19 18:00
p-Terphenyl-d14	110	30-130	4/3/19 18:00

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-113 (0-5)

Sampled: 3/28/2019 11:00

Sample ID: 19C1572-07

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.080	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:12	JMB
Aroclor-1221 [1]	ND	0.080	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:12	JMB
Aroclor-1232 [1]	ND	0.080	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:12	JMB
Aroclor-1242 [1]	ND	0.080	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:12	JMB
Aroclor-1248 [1]	ND	0.080	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:12	JMB
Aroclor-1254 [1]	ND	0.080	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:12	JMB
Aroclor-1260 [1]	ND	0.080	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:12	JMB
Aroclor-1262 [1]	ND	0.080	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:12	JMB
Aroclor-1268 [1]	ND	0.080	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:12	JMB
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		106	30-150					4/4/19 18:12	
Decachlorobiphenyl [2]		101	30-150					4/4/19 18:12	
Tetrachloro-m-xylene [1]		105	30-150					4/4/19 18:12	
Tetrachloro-m-xylene [2]		101	30-150					4/4/19 18:12	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-113 (0-5)

Sampled: 3/28/2019 11:00

Sample ID: 19C1572-07

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	ND	8.9	mg/Kg dry	1		SW-846 8100 Modified	4/2/19	4/4/19 9:35	RMW
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
2-Fluorobiphenyl	75.0		40-140					4/4/19 9:35	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-113 (0-5)

Sampled: 3/28/2019 11:00

Sample ID: 19C1572-07

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.8	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:07	MJH
Arsenic	2.8	1.8	mg/Kg dry	1		SW-846 6010D	4/3/19	4/5/19 13:25	EJB
Barium	15	1.8	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:07	MJH
Beryllium	ND	0.18	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:07	MJH
Cadmium	ND	0.18	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:07	MJH
Chromium	11	0.36	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:07	MJH
Lead	2.3	0.54	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:07	MJH
Mercury	ND	0.026	mg/Kg dry	1		SW-846 7471B	4/2/19	4/3/19 13:07	TBC
Nickel	4.8	0.36	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:07	MJH
Selenium	ND	3.6	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:07	MJH
Silver	ND	0.36	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:07	MJH
Thallium	ND	1.8	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 23:03	EJB
Vanadium	9.6	0.72	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:07	MJH
Zinc	11	0.72	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:07	MJH

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-113 (0-5)

Sampled: 3/28/2019 11:00

Sample ID: 19C1572-07

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	93.3		% Wt	1		SM 2540G	4/3/19	4/4/19 0:59	AVF
Ignitability	Absent		present/absent	1		SW-846 1030	4/2/19	4/2/19 19:15	DJM
pH @20.4°C	6.5		pH Units	1	H-03	SW-846 9045C	3/30/19	3/30/19 15:04	AIA
Reactive Cyanide	ND	3.9	mg/Kg	1		SW-846 9014	3/30/19	3/31/19 10:20	KMV
Reactive Sulfide	ND	20	mg/L	1		SW-846 9030A	3/30/19	3/31/19 9:50	KMV
Specific conductance	ND	2.0	µmhos/cm	1		SM21-22 2510B Modified	4/1/19	4/1/19 11:30	EC

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-114 (5-10)

Sampled: 3/28/2019 11:35

Sample ID: 19C1572-08

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.10	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Benzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Bromobenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Bromochloromethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Bromodichloromethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Bromoform	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Bromomethane	ND	0.010	mg/Kg dry	1	V-34	SW-846 8260C	4/1/19	4/1/19 21:29	MFF
2-Butanone (MEK)	ND	0.042	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
n-Butylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
sec-Butylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
tert-Butylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Carbon Disulfide	ND	0.0062	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Carbon Tetrachloride	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Chlorobenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Chlorodibromomethane	ND	0.0010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Chloroethane	ND	0.010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Chloroform	ND	0.0042	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Chloromethane	ND	0.010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
2-Chlorotoluene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
4-Chlorotoluene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Dibromomethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,2-Dichlorobenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,3-Dichlorobenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,4-Dichlorobenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,1-Dichloroethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,2-Dichloroethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,1-Dichloroethylene	ND	0.0042	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
cis-1,2-Dichloroethylene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
trans-1,2-Dichloroethylene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,2-Dichloropropane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,3-Dichloropropane	ND	0.0010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
2,2-Dichloropropane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,1-Dichloropropene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
trans-1,3-Dichloropropene	ND	0.0010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Diethyl Ether	ND	0.010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,4-Dioxane	ND	0.10	mg/Kg dry	1	V-16	SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Ethylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-114 (5-10)

Sampled: 3/28/2019 11:35

Sample ID: 19C1572-08

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
2-Hexanone (MBK)	ND	0.021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Isopropylbenzene (Cumene)	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0042	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Methylene Chloride	ND	0.010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Naphthalene	ND	0.0042	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
n-Propylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Styrene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,1,1,2-Tetrachloroethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Tetrachloroethylene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Tetrahydrofuran	ND	0.010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Toluene	0.0068	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,2,3-Trichlorobenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,2,4-Trichlorobenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,1,1-Trichloroethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,1,2-Trichloroethane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Trichloroethylene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,2,3-Trichloropropane	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,2,4-Trimethylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
1,3,5-Trimethylbenzene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
Vinyl Chloride	ND	0.010	mg/Kg dry	1	L-04	SW-846 8260C	4/1/19	4/1/19 21:29	MFF
m+p Xylene	ND	0.0042	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF
o-Xylene	ND	0.0021	mg/Kg dry	1		SW-846 8260C	4/1/19	4/1/19 21:29	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	99.1	70-130	4/1/19 21:29
Toluene-d8	96.3	70-130	4/1/19 21:29
4-Bromofluorobenzene	97.4	70-130	4/1/19 21:29

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-114 (5-10)

Sampled: 3/28/2019 11:35

Sample ID: 19C1572-08

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Acenaphthylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Acetophenone	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Aniline	ND	0.36	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Benzo(a)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Benzo(a)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Benzo(b)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Benzo(g,h,i)perylene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Benzo(k)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Bis(2-chloroethoxy)methane	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Bis(2-chloroethyl)ether	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Bis(2-chloroisopropyl)ether	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Bis(2-Ethylhexyl)phthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
4-Bromophenylphenylether	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Butylbenzylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
4-Chloroaniline	ND	0.69	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 18:23	IMR
2-Chloronaphthalene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
2-Chlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Chrysene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Dibenz(a,h)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Dibenzofuran	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Di-n-butylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
1,2-Dichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
1,3-Dichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
1,4-Dichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
3,3-Dichlorobenzidine	ND	0.18	mg/Kg dry	1	V-34	SW-846 8270D	4/2/19	4/3/19 18:23	IMR
2,4-Dichlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Diethylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
2,4-Dimethylphenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Dimethylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
2,4-Dinitrophenol	ND	0.69	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
2,4-Dinitrotoluene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
2,6-Dinitrotoluene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Di-n-octylphthalate	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
1,2-Diphenylhydrazine/Azobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Fluorene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Hexachlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Hexachlorobutadiene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Hexachloroethane	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Indeno(1,2,3-cd)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Isophorone	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
2-Methylnaphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-114 (5-10)

Sampled: 3/28/2019 11:35

Sample ID: 19C1572-08

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	0.36	mg/Kg dry	1	V-05	SW-846 8270D	4/2/19	4/3/19 18:23	IMR
3/4-Methylphenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Naphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Nitrobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
2-Nitrophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
4-Nitrophenol	ND	0.69	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Pentachlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Phenanthrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Phenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
Pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
1,2,4-Trichlorobenzene	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
2,4,5-Trichlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR
2,4,6-Trichlorophenol	ND	0.36	mg/Kg dry	1		SW-846 8270D	4/2/19	4/3/19 18:23	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
2-Fluorophenol	85.4	30-130	
Phenol-d6	92.8	30-130	
Nitrobenzene-d5	94.9	30-130	
2-Fluorobiphenyl	97.5	30-130	
2,4,6-Tribromophenol	105	30-130	
p-Terphenyl-d14	113	30-130	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-114 (5-10)

Sampled: 3/28/2019 11:35

Sample ID: 19C1572-08

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:25	JMB
Aroclor-1221 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:25	JMB
Aroclor-1232 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:25	JMB
Aroclor-1242 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:25	JMB
Aroclor-1248 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:25	JMB
Aroclor-1254 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:25	JMB
Aroclor-1260 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:25	JMB
Aroclor-1262 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:25	JMB
Aroclor-1268 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:25	JMB
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		108	30-150					4/4/19 18:25	
Decachlorobiphenyl [2]		100	30-150					4/4/19 18:25	
Tetrachloro-m-xylene [1]		104	30-150					4/4/19 18:25	
Tetrachloro-m-xylene [2]		102	30-150					4/4/19 18:25	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Sampled: 3/28/2019 11:35

Field Sample #: V-114 (5-10)

Sample ID: 19C1572-08

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	27	8.7	mg/Kg dry	1		SW-846 8100 Modified	4/2/19	4/4/19 9:55	RMW
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorobiphenyl		76.7	40-140					4/4/19 9:55	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-114 (5-10)

Sampled: 3/28/2019 11:35

Sample ID: 19C1572-08

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:13	MJH
Arsenic	4.5	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/5/19 13:30	EJB
Barium	31	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:13	MJH
Beryllium	0.26	0.17	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:13	MJH
Cadmium	ND	0.17	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:13	MJH
Chromium	15	0.34	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:13	MJH
Lead	5.8	0.51	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:13	MJH
Mercury	ND	0.026	mg/Kg dry	1		SW-846 7471B	4/2/19	4/3/19 13:09	TBC
Nickel	12	0.34	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:13	MJH
Selenium	ND	3.4	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:13	MJH
Silver	0.57	0.34	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:13	MJH
Thallium	ND	1.7	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 23:09	EJB
Vanadium	23	0.68	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:13	MJH
Zinc	30	0.68	mg/Kg dry	1		SW-846 6010D	4/3/19	4/4/19 17:13	MJH

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-114 (5-10)

Sampled: 3/28/2019 11:35

Sample ID: 19C1572-08

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	95.4		% Wt	1		SM 2540G	4/3/19	4/4/19 0:59	AVF
Ignitability	Absent		present/absent	1		SW-846 1030	4/2/19	4/2/19 19:15	DJM
pH @20.3°C	6.4		pH Units	1	H-03	SW-846 9045C	3/30/19	3/30/19 15:04	AIA
Reactive Cyanide	ND	4.0	mg/Kg	1		SW-846 9014	3/30/19	3/31/19 10:20	KMV
Reactive Sulfide	ND	20	mg/L	1		SW-846 9030A	3/30/19	3/31/19 9:50	KMV
Specific conductance	2.1	2.0	µmhos/cm	1		SM21-22 2510B Modified	4/1/19	4/1/19 11:30	EC

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-115 (5-10)

Sampled: 3/28/2019 12:00

Sample ID: 19C1572-09

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:37	JMB
Aroclor-1221 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:37	JMB
Aroclor-1232 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:37	JMB
Aroclor-1242 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:37	JMB
Aroclor-1248 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:37	JMB
Aroclor-1254 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:37	JMB
Aroclor-1260 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:37	JMB
Aroclor-1262 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:37	JMB
Aroclor-1268 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:37	JMB
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		107	30-150					4/4/19 18:37	
Decachlorobiphenyl [2]		97.0	30-150					4/4/19 18:37	
Tetrachloro-m-xylene [1]		97.7	30-150					4/4/19 18:37	
Tetrachloro-m-xylene [2]		95.1	30-150					4/4/19 18:37	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Sampled: 3/28/2019 12:00

Field Sample #: V-115 (5-10)

Sample ID: 19C1572-09

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	94.6		% Wt	1		SM 2540G	4/3/19	4/4/19 1:00	AVF

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Field Sample #: V-116 (0-5)

Sampled: 3/28/2019 12:30

Sample ID: 19C1572-10

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:50	JMB
Aroclor-1221 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:50	JMB
Aroclor-1232 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:50	JMB
Aroclor-1242 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:50	JMB
Aroclor-1248 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:50	JMB
Aroclor-1254 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:50	JMB
Aroclor-1260 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:50	JMB
Aroclor-1262 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:50	JMB
Aroclor-1268 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	4/2/19	4/4/19 18:50	JMB
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		103	30-150					4/4/19 18:50	
Decachlorobiphenyl [2]		97.4	30-150					4/4/19 18:50	
Tetrachloro-m-xylene [1]		106	30-150					4/4/19 18:50	
Tetrachloro-m-xylene [2]		103	30-150					4/4/19 18:50	

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Project Location: Wayland, MA

Sample Description:

Work Order: 19C1572

Date Received: 3/29/2019

Sampled: 3/28/2019 12:30

Field Sample #: V-116 (0-5)

Sample ID: 19C1572-10

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	94.6		% Wt	1		SM 2540G	4/3/19	4/4/19 1:00	AVF

Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
19C1572-01 [V-107 (5-10)]	B227324	04/03/19
19C1572-02 [V-108 (0-5)]	B227324	04/03/19
19C1572-03 [V-109 (5-10)]	B227324	04/03/19
19C1572-04 [V-110 (5-10)]	B227324	04/03/19
19C1572-05 [V-111 (0-10)]	B227324	04/03/19
19C1572-06 [V-112 (0-5)]	B227324	04/03/19
19C1572-07 [V-113 (0-5)]	B227324	04/03/19
19C1572-08 [V-114 (5-10)]	B227324	04/03/19
19C1572-09 [V-115 (5-10)]	B227324	04/03/19
19C1572-10 [V-116 (0-5)]	B227324	04/03/19

SM21-22 2510B Modified

Lab Number [Field ID]	Batch	Initial [g]	Date
19C1572-01 [V-107 (5-10)]	B227054	1.00	03/31/19
19C1572-02 [V-108 (0-5)]	B227054	1.00	03/31/19
19C1572-03 [V-109 (5-10)]	B227054	1.00	03/31/19
19C1572-04 [V-110 (5-10)]	B227054	1.00	03/31/19
19C1572-05 [V-111 (0-10)]	B227054	1.00	03/31/19

SM21-22 2510B Modified

Lab Number [Field ID]	Batch	Initial [g]	Date
19C1572-06 [V-112 (0-5)]	B227087	1.00	04/01/19
19C1572-07 [V-113 (0-5)]	B227087	1.00	04/01/19
19C1572-08 [V-114 (5-10)]	B227087	1.00	04/01/19

SW-846 1030

Lab Number [Field ID]	Batch	Initial [g]	Date
19C1572-01 [V-107 (5-10)]	B227278	50.0	04/02/19
19C1572-02 [V-108 (0-5)]	B227278	50.0	04/02/19
19C1572-03 [V-109 (5-10)]	B227278	50.0	04/02/19
19C1572-04 [V-110 (5-10)]	B227278	50.0	04/02/19
19C1572-05 [V-111 (0-10)]	B227278	50.0	04/02/19
19C1572-06 [V-112 (0-5)]	B227278	50.0	04/02/19
19C1572-07 [V-113 (0-5)]	B227278	50.0	04/02/19
19C1572-08 [V-114 (5-10)]	B227278	50.0	04/02/19

Prep Method: SW-846 3050B-SW-846 6010D

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
19C1572-01 [V-107 (5-10)]	B227367	1.52	50.0	04/03/19
19C1572-02 [V-108 (0-5)]	B227367	1.54	50.0	04/03/19
19C1572-03 [V-109 (5-10)]	B227367	1.50	50.0	04/03/19
19C1572-04 [V-110 (5-10)]	B227367	1.52	50.0	04/03/19
19C1572-05 [V-111 (0-10)]	B227367	1.53	50.0	04/03/19
19C1572-06 [V-112 (0-5)]	B227367	1.50	50.0	04/03/19
19C1572-07 [V-113 (0-5)]	B227367	1.49	50.0	04/03/19
19C1572-08 [V-114 (5-10)]	B227367	1.53	50.0	04/03/19

Sample Extraction Data

Prep Method: SW-846 7471-SW-846 7471B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
19C1572-01 [V-107 (5-10)]	B227094	0.619	50.0	04/02/19
19C1572-02 [V-108 (0-5)]	B227094	0.606	50.0	04/02/19
19C1572-03 [V-109 (5-10)]	B227094	0.608	50.0	04/02/19
19C1572-04 [V-110 (5-10)]	B227094	0.574	50.0	04/02/19
19C1572-05 [V-111 (0-10)]	B227094	0.598	50.0	04/02/19
19C1572-06 [V-112 (0-5)]	B227094	0.594	50.0	04/02/19
19C1572-07 [V-113 (0-5)]	B227094	0.612	50.0	04/02/19
19C1572-08 [V-114 (5-10)]	B227094	0.596	50.0	04/02/19

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
19C1572-01 [V-107 (5-10)]	B227240	10.2	10.0	04/02/19
19C1572-02 [V-108 (0-5)]	B227240	10.2	10.0	04/02/19
19C1572-03 [V-109 (5-10)]	B227240	10.3	10.0	04/02/19
19C1572-04 [V-110 (5-10)]	B227240	10.2	10.0	04/02/19
19C1572-05 [V-111 (0-10)]	B227240	10.6	10.0	04/02/19
19C1572-06 [V-112 (0-5)]	B227240	10.7	10.0	04/02/19
19C1572-07 [V-113 (0-5)]	B227240	10.7	10.0	04/02/19
19C1572-08 [V-114 (5-10)]	B227240	10.4	10.0	04/02/19
19C1572-09 [V-115 (5-10)]	B227240	10.3	10.0	04/02/19
19C1572-10 [V-116 (0-5)]	B227240	10.3	10.0	04/02/19

Prep Method: SW-846 3546-SW-846 8100 Modified

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
19C1572-01 [V-107 (5-10)]	B227221	30.7	1.00	04/02/19
19C1572-02 [V-108 (0-5)]	B227221	30.4	1.00	04/02/19
19C1572-03 [V-109 (5-10)]	B227221	30.5	1.00	04/02/19
19C1572-04 [V-110 (5-10)]	B227221	30.7	1.00	04/02/19
19C1572-05 [V-111 (0-10)]	B227221	30.4	1.00	04/02/19
19C1572-06 [V-112 (0-5)]	B227221	30.6	1.00	04/02/19
19C1572-07 [V-113 (0-5)]	B227221	30.0	1.00	04/02/19
19C1572-08 [V-114 (5-10)]	B227221	30.0	1.00	04/02/19

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
19C1572-01 [V-107 (5-10)]	B227113	6.78	10.0	04/01/19
19C1572-02 [V-108 (0-5)]	B227113	6.06	10.0	04/01/19
19C1572-03 [V-109 (5-10)]	B227113	3.60	10.0	04/01/19
19C1572-04 [V-110 (5-10)]	B227113	4.62	10.0	04/01/19

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
19C1572-05 [V-111 (0-10)]	B227135	5.57	10.0	04/01/19
19C1572-06 [V-112 (0-5)]	B227135	5.67	10.0	04/01/19
19C1572-07 [V-113 (0-5)]	B227135	6.01	10.0	04/01/19

Sample Extraction Data

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
19C1572-08 [V-114 (5-10)]	B227135	5.04	10.0	04/01/19

Prep Method: SW-846 3546-SW-846 8270D

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
19C1572-01 [V-107 (5-10)]	B227222	30.7	1.00	04/02/19
19C1572-02 [V-108 (0-5)]	B227222	30.4	1.00	04/02/19
19C1572-03 [V-109 (5-10)]	B227222	30.5	1.00	04/02/19
19C1572-04 [V-110 (5-10)]	B227222	30.7	1.00	04/02/19
19C1572-05 [V-111 (0-10)]	B227222	30.4	1.00	04/02/19
19C1572-06 [V-112 (0-5)]	B227222	30.6	1.00	04/02/19
19C1572-07 [V-113 (0-5)]	B227222	30.0	1.00	04/02/19
19C1572-08 [V-114 (5-10)]	B227222	30.0	1.00	04/02/19

SW-846 9014

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
19C1572-01 [V-107 (5-10)]	B227022	25.7	250	03/30/19
19C1572-02 [V-108 (0-5)]	B227022	25.4	250	03/30/19
19C1572-03 [V-109 (5-10)]	B227022	25.2	250	03/30/19
19C1572-04 [V-110 (5-10)]	B227022	25.2	250	03/30/19
19C1572-05 [V-111 (0-10)]	B227022	25.4	250	03/30/19
19C1572-06 [V-112 (0-5)]	B227022	25.5	250	03/30/19
19C1572-07 [V-113 (0-5)]	B227022	25.4	250	03/30/19
19C1572-08 [V-114 (5-10)]	B227022	25.2	250	03/30/19

SW-846 9030A

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19C1572-01 [V-107 (5-10)]	B227024	25.7	250	03/30/19
19C1572-02 [V-108 (0-5)]	B227024	25.4	250	03/30/19
19C1572-03 [V-109 (5-10)]	B227024	25.2	250	03/30/19
19C1572-04 [V-110 (5-10)]	B227024	25.2	250	03/30/19
19C1572-05 [V-111 (0-10)]	B227024	25.4	250	03/30/19
19C1572-06 [V-112 (0-5)]	B227024	25.5	250	03/30/19
19C1572-07 [V-113 (0-5)]	B227024	25.4	250	03/30/19
19C1572-08 [V-114 (5-10)]	B227024	25.2	250	03/30/19

SW-846 9045C

Lab Number [Field ID]	Batch	Initial [g]	Date
19C1572-01 [V-107 (5-10)]	B227052	20.0	03/30/19
19C1572-02 [V-108 (0-5)]	B227052	20.0	03/30/19
19C1572-03 [V-109 (5-10)]	B227052	20.0	03/30/19
19C1572-04 [V-110 (5-10)]	B227052	20.0	03/30/19
19C1572-05 [V-111 (0-10)]	B227052	20.0	03/30/19
19C1572-06 [V-112 (0-5)]	B227052	20.0	03/30/19
19C1572-07 [V-113 (0-5)]	B227052	20.0	03/30/19
19C1572-08 [V-114 (5-10)]	B227052	20.0	03/30/19

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227113 - SW-846 5035

Blank (B227113-BLK1)

Prepared & Analyzed: 04/01/19

Acetone	ND	0.10	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg wet							
Benzene	ND	0.0020	mg/Kg wet							
Bromobenzene	ND	0.0020	mg/Kg wet							
Bromochloromethane	ND	0.0020	mg/Kg wet							
Bromodichloromethane	ND	0.0020	mg/Kg wet							
Bromoform	ND	0.0020	mg/Kg wet							
Bromomethane	ND	0.010	mg/Kg wet							V-34
2-Butanone (MEK)	ND	0.040	mg/Kg wet							
n-Butylbenzene	ND	0.0020	mg/Kg wet							
sec-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg wet							
Carbon Disulfide	ND	0.0060	mg/Kg wet							
Carbon Tetrachloride	ND	0.0020	mg/Kg wet							
Chlorobenzene	ND	0.0020	mg/Kg wet							
Chlorodibromomethane	ND	0.0010	mg/Kg wet							
Chloroethane	ND	0.010	mg/Kg wet							
Chloroform	ND	0.0040	mg/Kg wet							
Chloromethane	ND	0.010	mg/Kg wet							
2-Chlorotoluene	ND	0.0020	mg/Kg wet							
4-Chlorotoluene	ND	0.0020	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg wet							
Dibromomethane	ND	0.0020	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.0020	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.010	mg/Kg wet							
1,1-Dichloroethane	ND	0.0020	mg/Kg wet							
1,2-Dichloroethane	ND	0.0020	mg/Kg wet							
1,1-Dichloroethylene	ND	0.0040	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
1,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,3-Dichloropropane	ND	0.0010	mg/Kg wet							
2,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,1-Dichloropropene	ND	0.0020	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
Diethyl Ether	ND	0.010	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg wet							
1,4-Dioxane	ND	0.10	mg/Kg wet							V-16
Ethylbenzene	ND	0.0020	mg/Kg wet							
Hexachlorobutadiene	ND	0.0020	mg/Kg wet							
2-Hexanone (MBK)	ND	0.020	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.0040	mg/Kg wet							
Methylene Chloride	ND	0.010	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg wet							
Naphthalene	ND	0.0040	mg/Kg wet							

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227113 - SW-846 5035

Blank (B227113-BLK1)

Prepared & Analyzed: 04/01/19

n-Propylbenzene	ND	0.0020	mg/Kg wet							
Styrene	ND	0.0020	mg/Kg wet							
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg wet							
Tetrachloroethylene	ND	0.0020	mg/Kg wet							
Tetrahydrofuran	ND	0.010	mg/Kg wet							
Toluene	ND	0.0020	mg/Kg wet							
1,2,3-Trichlorobenzene	ND	0.0020	mg/Kg wet							
1,2,4-Trichlorobenzene	ND	0.0020	mg/Kg wet							
1,1,1-Trichloroethane	ND	0.0020	mg/Kg wet							
1,1,2-Trichloroethane	ND	0.0020	mg/Kg wet							
Trichloroethylene	ND	0.0020	mg/Kg wet							
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg wet							
1,2,3-Trichloropropane	ND	0.0020	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg wet							
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg wet							
Vinyl Chloride	ND	0.010	mg/Kg wet							L-04
m+p Xylene	ND	0.0040	mg/Kg wet							
o-Xylene	ND	0.0020	mg/Kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0475		mg/Kg wet	0.0500		95.0	70-130			
Surrogate: Toluene-d8	0.0483		mg/Kg wet	0.0500		96.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.0480		mg/Kg wet	0.0500		95.9	70-130			

LCS (B227113-BS1)

Prepared & Analyzed: 04/01/19

Acetone	0.268	0.10	mg/Kg wet	0.200		134	40-160			L-14 †
tert-Amyl Methyl Ether (TAME)	0.0197	0.0010	mg/Kg wet	0.0200		98.4	70-130			
Benzene	0.0165	0.0020	mg/Kg wet	0.0200		82.4	70-130			
Bromobenzene	0.0201	0.0020	mg/Kg wet	0.0200		101	70-130			
Bromochloromethane	0.0176	0.0020	mg/Kg wet	0.0200		87.8	70-130			
Bromodichloromethane	0.0186	0.0020	mg/Kg wet	0.0200		93.0	70-130			
Bromoform	0.0231	0.0020	mg/Kg wet	0.0200		116	70-130			V-20
Bromomethane	0.0114	0.010	mg/Kg wet	0.0200		56.8	40-160			L-14, V-34 †
2-Butanone (MEK)	0.222	0.040	mg/Kg wet	0.200		111	40-160			†
n-Butylbenzene	0.0211	0.0020	mg/Kg wet	0.0200		105	70-130			
sec-Butylbenzene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130			
tert-Butylbenzene	0.0212	0.0020	mg/Kg wet	0.0200		106	70-130			
tert-Butyl Ethyl Ether (TBEE)	0.0188	0.0010	mg/Kg wet	0.0200		93.8	70-130			
Carbon Disulfide	0.0178	0.0060	mg/Kg wet	0.0200		89.2	70-130			
Carbon Tetrachloride	0.0181	0.0020	mg/Kg wet	0.0200		90.6	70-130			
Chlorobenzene	0.0201	0.0020	mg/Kg wet	0.0200		100	70-130			
Chlorodibromomethane	0.0205	0.0010	mg/Kg wet	0.0200		103	70-130			
Chloroethane	0.0182	0.010	mg/Kg wet	0.0200		91.2	70-130			
Chloroform	0.0169	0.0040	mg/Kg wet	0.0200		84.7	70-130			
Chloromethane	0.0115	0.010	mg/Kg wet	0.0200		57.3	40-160			L-14 †
2-Chlorotoluene	0.0201	0.0020	mg/Kg wet	0.0200		101	70-130			
4-Chlorotoluene	0.0201	0.0020	mg/Kg wet	0.0200		101	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	0.0222	0.0020	mg/Kg wet	0.0200		111	70-130			
1,2-Dibromoethane (EDB)	0.0188	0.0010	mg/Kg wet	0.0200		94.2	70-130			
Dibromomethane	0.0172	0.0020	mg/Kg wet	0.0200		85.8	70-130			
1,2-Dichlorobenzene	0.0211	0.0020	mg/Kg wet	0.0200		105	70-130			
1,3-Dichlorobenzene	0.0214	0.0020	mg/Kg wet	0.0200		107	70-130			
1,4-Dichlorobenzene	0.0200	0.0020	mg/Kg wet	0.0200		100	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227113 - SW-846 5035										
LCS (B227113-BS1)										
Prepared & Analyzed: 04/01/19										
Dichlorodifluoromethane (Freon 12)	0.0104	0.010	mg/Kg wet	0.0200		52.2	40-160			L-14 †
1,1-Dichloroethane	0.0173	0.0020	mg/Kg wet	0.0200		86.3	70-130			
1,2-Dichloroethane	0.0176	0.0020	mg/Kg wet	0.0200		88.2	70-130			
1,1-Dichloroethylene	0.0172	0.0040	mg/Kg wet	0.0200		86.2	70-130			
cis-1,2-Dichloroethylene	0.0173	0.0020	mg/Kg wet	0.0200		86.3	70-130			
trans-1,2-Dichloroethylene	0.0173	0.0020	mg/Kg wet	0.0200		86.4	70-130			
1,2-Dichloropropane	0.0180	0.0020	mg/Kg wet	0.0200		90.1	70-130			
1,3-Dichloropropane	0.0176	0.0010	mg/Kg wet	0.0200		88.3	70-130			
2,2-Dichloropropane	0.0184	0.0020	mg/Kg wet	0.0200		92.1	70-130			
1,1-Dichloropropene	0.0171	0.0020	mg/Kg wet	0.0200		85.6	70-130			
cis-1,3-Dichloropropene	0.0190	0.0010	mg/Kg wet	0.0200		94.9	70-130			
trans-1,3-Dichloropropene	0.0197	0.0010	mg/Kg wet	0.0200		98.4	70-130			
Diethyl Ether	0.0174	0.010	mg/Kg wet	0.0200		87.2	70-130			
Diisopropyl Ether (DIPE)	0.0178	0.0010	mg/Kg wet	0.0200		89.1	70-130			
1,4-Dioxane	0.196	0.10	mg/Kg wet	0.200		98.1	40-160			V-16 †
Ethylbenzene	0.0199	0.0020	mg/Kg wet	0.0200		99.5	70-130			
Hexachlorobutadiene	0.0231	0.0020	mg/Kg wet	0.0200		116	70-130			
2-Hexanone (MBK)	0.207	0.020	mg/Kg wet	0.200		104	40-160			†
Isopropylbenzene (Cumene)	0.0209	0.0020	mg/Kg wet	0.0200		105	70-130			
p-Isopropyltoluene (p-Cymene)	0.0214	0.0020	mg/Kg wet	0.0200		107	70-130			
Methyl tert-Butyl Ether (MTBE)	0.0241	0.0040	mg/Kg wet	0.0200		121	70-130			V-20
Methylene Chloride	0.0187	0.010	mg/Kg wet	0.0200		93.6	70-130			
4-Methyl-2-pentanone (MIBK)	0.194	0.020	mg/Kg wet	0.200		97.1	40-160			†
Naphthalene	0.0205	0.0040	mg/Kg wet	0.0200		103	70-130			
n-Propylbenzene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130			
Styrene	0.0199	0.0020	mg/Kg wet	0.0200		99.5	70-130			
1,1,1,2-Tetrachloroethane	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130			
1,1,2,2-Tetrachloroethane	0.0209	0.0010	mg/Kg wet	0.0200		105	70-130			
Tetrachloroethylene	0.0190	0.0020	mg/Kg wet	0.0200		95.0	70-130			
Tetrahydrofuran	0.0192	0.010	mg/Kg wet	0.0200		95.9	70-130			
Toluene	0.0179	0.0020	mg/Kg wet	0.0200		89.6	70-130			
1,2,3-Trichlorobenzene	0.0212	0.0020	mg/Kg wet	0.0200		106	70-130			
1,2,4-Trichlorobenzene	0.0208	0.0020	mg/Kg wet	0.0200		104	70-130			
1,1,1-Trichloroethane	0.0180	0.0020	mg/Kg wet	0.0200		89.8	70-130			
1,1,2-Trichloroethane	0.0188	0.0020	mg/Kg wet	0.0200		94.2	70-130			
Trichloroethylene	0.0172	0.0020	mg/Kg wet	0.0200		85.8	70-130			
Trichlorofluoromethane (Freon 11)	0.0143	0.010	mg/Kg wet	0.0200		71.4	70-130			
1,2,3-Trichloropropane	0.0192	0.0020	mg/Kg wet	0.0200		96.0	70-130			
1,2,4-Trimethylbenzene	0.0198	0.0020	mg/Kg wet	0.0200		98.9	70-130			
1,3,5-Trimethylbenzene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130			
Vinyl Chloride	0.0133	0.010	mg/Kg wet	0.0200		66.3 *	70-130			L-04
m+p Xylene	0.0399	0.0040	mg/Kg wet	0.0400		99.7	70-130			
o-Xylene	0.0197	0.0020	mg/Kg wet	0.0200		98.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0488		mg/Kg wet	0.0500		97.5	70-130			
Surrogate: Toluene-d8	0.0476		mg/Kg wet	0.0500		95.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.0485		mg/Kg wet	0.0500		96.9	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227113 - SW-846 5035										
LCS Dup (B227113-BSD1)										
Prepared & Analyzed: 04/01/19										
Acetone	0.250	0.10	mg/Kg wet	0.200		125	40-160	6.89	20	†
tert-Amyl Methyl Ether (TAME)	0.0203	0.0010	mg/Kg wet	0.0200		102	70-130	3.30	20	
Benzene	0.0173	0.0020	mg/Kg wet	0.0200		86.4	70-130	4.69	20	
Bromobenzene	0.0205	0.0020	mg/Kg wet	0.0200		102	70-130	1.89	20	
Bromochloromethane	0.0191	0.0020	mg/Kg wet	0.0200		95.4	70-130	8.22	20	
Bromodichloromethane	0.0191	0.0020	mg/Kg wet	0.0200		95.6	70-130	2.76	20	
Bromoform	0.0240	0.0020	mg/Kg wet	0.0200		120	70-130	3.54	20	V-20
Bromomethane	0.0119	0.010	mg/Kg wet	0.0200		59.7	40-160	4.87	20	L-14, V-34 †
2-Butanone (MEK)	0.225	0.040	mg/Kg wet	0.200		112	40-160	1.42	20	†
n-Butylbenzene	0.0212	0.0020	mg/Kg wet	0.0200		106	70-130	0.577	20	
sec-Butylbenzene	0.0217	0.0020	mg/Kg wet	0.0200		109	70-130	0.702	20	
tert-Butylbenzene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130	1.75	20	
tert-Butyl Ethyl Ether (TBEE)	0.0194	0.0010	mg/Kg wet	0.0200		97.1	70-130	3.45	20	
Carbon Disulfide	0.0192	0.0060	mg/Kg wet	0.0200		96.2	70-130	7.49	20	
Carbon Tetrachloride	0.0191	0.0020	mg/Kg wet	0.0200		95.6	70-130	5.41	20	
Chlorobenzene	0.0207	0.0020	mg/Kg wet	0.0200		104	70-130	3.15	20	
Chlorodibromomethane	0.0215	0.0010	mg/Kg wet	0.0200		107	70-130	4.46	20	
Chloroethane	0.0194	0.010	mg/Kg wet	0.0200		97.2	70-130	6.31	20	
Chloroform	0.0173	0.0040	mg/Kg wet	0.0200		86.5	70-130	2.14	20	
Chloromethane	0.0118	0.010	mg/Kg wet	0.0200		58.9	40-160	2.75	20	L-14 †
2-Chlorotoluene	0.0206	0.0020	mg/Kg wet	0.0200		103	70-130	2.25	20	
4-Chlorotoluene	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130	4.01	20	
1,2-Dibromo-3-chloropropane (DBCP)	0.0230	0.0020	mg/Kg wet	0.0200		115	70-130	3.64	20	
1,2-Dibromoethane (EDB)	0.0196	0.0010	mg/Kg wet	0.0200		97.8	70-130	3.66	20	
Dibromomethane	0.0190	0.0020	mg/Kg wet	0.0200		94.9	70-130	10.1	20	
1,2-Dichlorobenzene	0.0209	0.0020	mg/Kg wet	0.0200		105	70-130	0.867	20	
1,3-Dichlorobenzene	0.0217	0.0020	mg/Kg wet	0.0200		109	70-130	1.47	20	
1,4-Dichlorobenzene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130	1.74	20	
Dichlorodifluoromethane (Freon 12)	0.0106	0.010	mg/Kg wet	0.0200		52.8	40-160	1.12	20	L-14 †
1,1-Dichloroethane	0.0181	0.0020	mg/Kg wet	0.0200		90.4	70-130	4.56	20	
1,2-Dichloroethane	0.0185	0.0020	mg/Kg wet	0.0200		92.7	70-130	5.02	20	
1,1-Dichloroethylene	0.0176	0.0040	mg/Kg wet	0.0200		88.1	70-130	2.15	20	
cis-1,2-Dichloroethylene	0.0173	0.0020	mg/Kg wet	0.0200		86.7	70-130	0.439	20	
trans-1,2-Dichloroethylene	0.0179	0.0020	mg/Kg wet	0.0200		89.7	70-130	3.70	20	
1,2-Dichloropropane	0.0190	0.0020	mg/Kg wet	0.0200		95.2	70-130	5.50	20	
1,3-Dichloropropane	0.0181	0.0010	mg/Kg wet	0.0200		90.6	70-130	2.59	20	
2,2-Dichloropropane	0.0189	0.0020	mg/Kg wet	0.0200		94.6	70-130	2.72	20	
1,1-Dichloropropene	0.0179	0.0020	mg/Kg wet	0.0200		89.3	70-130	4.20	20	
cis-1,3-Dichloropropene	0.0197	0.0010	mg/Kg wet	0.0200		98.5	70-130	3.67	20	
trans-1,3-Dichloropropene	0.0205	0.0010	mg/Kg wet	0.0200		103	70-130	4.28	20	
Diethyl Ether	0.0184	0.010	mg/Kg wet	0.0200		91.8	70-130	5.17	20	
Diisopropyl Ether (DIPE)	0.0184	0.0010	mg/Kg wet	0.0200		92.0	70-130	3.22	20	
1,4-Dioxane	0.195	0.10	mg/Kg wet	0.200		97.6	40-160	0.510	20	V-16 †
Ethylbenzene	0.0201	0.0020	mg/Kg wet	0.0200		100	70-130	0.950	20	
Hexachlorobutadiene	0.0228	0.0020	mg/Kg wet	0.0200		114	70-130	1.23	20	
2-Hexanone (MBK)	0.215	0.020	mg/Kg wet	0.200		108	40-160	3.68	20	†
Isopropylbenzene (Cumene)	0.0215	0.0020	mg/Kg wet	0.0200		108	70-130	2.65	20	
p-Isopropyltoluene (p-Cymene)	0.0215	0.0020	mg/Kg wet	0.0200		108	70-130	0.652	20	
Methyl tert-Butyl Ether (MTBE)	0.0260	0.0040	mg/Kg wet	0.0200		130	70-130	7.70	20	V-20
Methylene Chloride	0.0194	0.010	mg/Kg wet	0.0200		96.8	70-130	3.30	20	
4-Methyl-2-pentanone (MIBK)	0.204	0.020	mg/Kg wet	0.200		102	40-160	5.04	20	†
Naphthalene	0.0204	0.0040	mg/Kg wet	0.0200		102	70-130	0.625	20	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227113 - SW-846 5035										
LCS Dup (B227113-BSD1)										
Prepared & Analyzed: 04/01/19										
n-Propylbenzene	0.0209	0.0020	mg/Kg wet	0.0200		105	70-130	2.53	20	
Styrene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130	2.48	20	
1,1,1,2-Tetrachloroethane	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130	3.22	20	
1,1,2,2-Tetrachloroethane	0.0227	0.0010	mg/Kg wet	0.0200		113	70-130	8.01	20	
Tetrachloroethylene	0.0192	0.0020	mg/Kg wet	0.0200		96.1	70-130	1.20	20	
Tetrahydrofuran	0.0163	0.010	mg/Kg wet	0.0200		81.7	70-130	16.1	20	
Toluene	0.0185	0.0020	mg/Kg wet	0.0200		92.7	70-130	3.37	20	
1,2,3-Trichlorobenzene	0.0214	0.0020	mg/Kg wet	0.0200		107	70-130	0.875	20	
1,2,4-Trichlorobenzene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130	3.96	20	
1,1,1-Trichloroethane	0.0182	0.0020	mg/Kg wet	0.0200		91.1	70-130	1.43	20	
1,1,2-Trichloroethane	0.0195	0.0020	mg/Kg wet	0.0200		97.7	70-130	3.57	20	
Trichloroethylene	0.0182	0.0020	mg/Kg wet	0.0200		91.2	70-130	6.16	20	
Trichlorofluoromethane (Freon 11)	0.0147	0.010	mg/Kg wet	0.0200		73.6	70-130	3.05	20	
1,2,3-Trichloropropane	0.0196	0.0020	mg/Kg wet	0.0200		98.2	70-130	2.32	20	
1,2,4-Trimethylbenzene	0.0199	0.0020	mg/Kg wet	0.0200		99.7	70-130	0.866	20	
1,3,5-Trimethylbenzene	0.0208	0.0020	mg/Kg wet	0.0200		104	70-130	2.96	20	
Vinyl Chloride	0.0137	0.010	mg/Kg wet	0.0200		68.3 *	70-130	2.99	20	L-04
m+p Xylene	0.0402	0.0040	mg/Kg wet	0.0400		101	70-130	0.834	20	
o-Xylene	0.0205	0.0020	mg/Kg wet	0.0200		102	70-130	3.72	20	
Surrogate: 1,2-Dichloroethane-d4	0.0485		mg/Kg wet	0.0500		97.0	70-130			
Surrogate: Toluene-d8	0.0488		mg/Kg wet	0.0500		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.0472		mg/Kg wet	0.0500		94.5	70-130			

Batch B227135 - SW-846 5035

Blank (B227135-BLK1)

Prepared & Analyzed: 04/01/19

Acetone	ND	0.10	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg wet							
Benzene	ND	0.0020	mg/Kg wet							
Bromobenzene	ND	0.0020	mg/Kg wet							
Bromochloromethane	ND	0.0020	mg/Kg wet							
Bromodichloromethane	ND	0.0020	mg/Kg wet							
Bromoform	ND	0.0020	mg/Kg wet							
Bromomethane	ND	0.010	mg/Kg wet							V-34
2-Butanone (MEK)	ND	0.040	mg/Kg wet							
n-Butylbenzene	ND	0.0020	mg/Kg wet							
sec-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg wet							
Carbon Disulfide	ND	0.0060	mg/Kg wet							
Carbon Tetrachloride	ND	0.0020	mg/Kg wet							
Chlorobenzene	ND	0.0020	mg/Kg wet							
Chlorodibromomethane	ND	0.0010	mg/Kg wet							
Chloroethane	ND	0.010	mg/Kg wet							
Chloroform	ND	0.0040	mg/Kg wet							
Chloromethane	ND	0.010	mg/Kg wet							
2-Chlorotoluene	ND	0.0020	mg/Kg wet							
4-Chlorotoluene	ND	0.0020	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg wet							
Dibromomethane	ND	0.0020	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.0020	mg/Kg wet							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227135 - SW-846 5035										
Blank (B227135-BLK1)										
Prepared & Analyzed: 04/01/19										
1,4-Dichlorobenzene	ND	0.0020	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.010	mg/Kg wet							
1,1-Dichloroethane	ND	0.0020	mg/Kg wet							
1,2-Dichloroethane	ND	0.0020	mg/Kg wet							
1,1-Dichloroethylene	ND	0.0040	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
1,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,3-Dichloropropane	ND	0.0010	mg/Kg wet							
2,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,1-Dichloropropene	ND	0.0020	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
Diethyl Ether	ND	0.010	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg wet							
1,4-Dioxane	ND	0.10	mg/Kg wet							V-16
Ethylbenzene	ND	0.0020	mg/Kg wet							
Hexachlorobutadiene	ND	0.0020	mg/Kg wet							
2-Hexanone (MBK)	ND	0.020	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.0040	mg/Kg wet							
Methylene Chloride	ND	0.010	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg wet							
Naphthalene	ND	0.0040	mg/Kg wet							
n-Propylbenzene	ND	0.0020	mg/Kg wet							
Styrene	ND	0.0020	mg/Kg wet							
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg wet							
Tetrachloroethylene	ND	0.0020	mg/Kg wet							
Tetrahydrofuran	ND	0.010	mg/Kg wet							
Toluene	ND	0.0020	mg/Kg wet							
1,2,3-Trichlorobenzene	ND	0.0020	mg/Kg wet							
1,2,4-Trichlorobenzene	ND	0.0020	mg/Kg wet							
1,1,1-Trichloroethane	ND	0.0020	mg/Kg wet							
1,1,2-Trichloroethane	ND	0.0020	mg/Kg wet							
Trichloroethylene	ND	0.0020	mg/Kg wet							
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg wet							
1,2,3-Trichloropropane	ND	0.0020	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg wet							
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg wet							
Vinyl Chloride	ND	0.010	mg/Kg wet							L-04
m+p Xylene	ND	0.0040	mg/Kg wet							
o-Xylene	ND	0.0020	mg/Kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0470		mg/Kg wet	0.0500		93.9	70-130			
Surrogate: Toluene-d8	0.0480		mg/Kg wet	0.0500		95.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.0479		mg/Kg wet	0.0500		95.8	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227135 - SW-846 5035										
LCS (B227135-BS1)										
Prepared & Analyzed: 04/01/19										
Acetone	0.200	0.10	mg/Kg wet	0.200		99.9	40-160			†
tert-Amyl Methyl Ether (TAME)	0.0187	0.0010	mg/Kg wet	0.0200		93.3	70-130			
Benzene	0.0164	0.0020	mg/Kg wet	0.0200		82.0	70-130			
Bromobenzene	0.0199	0.0020	mg/Kg wet	0.0200		99.5	70-130			
Bromochloromethane	0.0173	0.0020	mg/Kg wet	0.0200		86.4	70-130			
Bromodichloromethane	0.0188	0.0020	mg/Kg wet	0.0200		94.2	70-130			
Bromoform	0.0228	0.0020	mg/Kg wet	0.0200		114	70-130			V-20
Bromomethane	0.0106	0.010	mg/Kg wet	0.0200		52.8	40-160			L-14, V-34 †
2-Butanone (MEK)	0.198	0.040	mg/Kg wet	0.200		98.9	40-160			†
n-Butylbenzene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130			
sec-Butylbenzene	0.0211	0.0020	mg/Kg wet	0.0200		106	70-130			
tert-Butylbenzene	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130			
tert-Butyl Ethyl Ether (TBEE)	0.0182	0.0010	mg/Kg wet	0.0200		91.1	70-130			
Carbon Disulfide	0.0182	0.0060	mg/Kg wet	0.0200		91.2	70-130			
Carbon Tetrachloride	0.0178	0.0020	mg/Kg wet	0.0200		89.0	70-130			
Chlorobenzene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130			
Chlorodibromomethane	0.0213	0.0010	mg/Kg wet	0.0200		106	70-130			
Chloroethane	0.0173	0.010	mg/Kg wet	0.0200		86.4	70-130			
Chloroform	0.0166	0.0040	mg/Kg wet	0.0200		83.0	70-130			
Chloromethane	0.0109	0.010	mg/Kg wet	0.0200		54.7	40-160			L-14 †
2-Chlorotoluene	0.0205	0.0020	mg/Kg wet	0.0200		103	70-130			
4-Chlorotoluene	0.0200	0.0020	mg/Kg wet	0.0200		100	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	0.0230	0.0020	mg/Kg wet	0.0200		115	70-130			
1,2-Dibromoethane (EDB)	0.0189	0.0010	mg/Kg wet	0.0200		94.3	70-130			
Dibromomethane	0.0178	0.0020	mg/Kg wet	0.0200		89.2	70-130			
1,2-Dichlorobenzene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130			
1,3-Dichlorobenzene	0.0211	0.0020	mg/Kg wet	0.0200		105	70-130			
1,4-Dichlorobenzene	0.0196	0.0020	mg/Kg wet	0.0200		98.2	70-130			
Dichlorodifluoromethane (Freon 12)	0.00943	0.010	mg/Kg wet	0.0200		47.2	40-160			L-14 †
1,1-Dichloroethane	0.0171	0.0020	mg/Kg wet	0.0200		85.4	70-130			
1,2-Dichloroethane	0.0179	0.0020	mg/Kg wet	0.0200		89.6	70-130			
1,1-Dichloroethylene	0.0166	0.0040	mg/Kg wet	0.0200		83.0	70-130			
cis-1,2-Dichloroethylene	0.0169	0.0020	mg/Kg wet	0.0200		84.4	70-130			
trans-1,2-Dichloroethylene	0.0170	0.0020	mg/Kg wet	0.0200		85.0	70-130			
1,2-Dichloropropane	0.0179	0.0020	mg/Kg wet	0.0200		89.6	70-130			
1,3-Dichloropropane	0.0181	0.0010	mg/Kg wet	0.0200		90.6	70-130			
2,2-Dichloropropane	0.0177	0.0020	mg/Kg wet	0.0200		88.6	70-130			
1,1-Dichloropropene	0.0164	0.0020	mg/Kg wet	0.0200		82.1	70-130			
cis-1,3-Dichloropropene	0.0188	0.0010	mg/Kg wet	0.0200		94.0	70-130			
trans-1,3-Dichloropropene	0.0195	0.0010	mg/Kg wet	0.0200		97.3	70-130			
Diethyl Ether	0.0169	0.010	mg/Kg wet	0.0200		84.5	70-130			
Diisopropyl Ether (DIPE)	0.0174	0.0010	mg/Kg wet	0.0200		87.0	70-130			
1,4-Dioxane	0.208	0.10	mg/Kg wet	0.200		104	40-160			V-16 †
Ethylbenzene	0.0199	0.0020	mg/Kg wet	0.0200		99.3	70-130			
Hexachlorobutadiene	0.0222	0.0020	mg/Kg wet	0.0200		111	70-130			
2-Hexanone (MBK)	0.199	0.020	mg/Kg wet	0.200		99.5	40-160			†
Isopropylbenzene (Cumene)	0.0213	0.0020	mg/Kg wet	0.0200		107	70-130			
p-Isopropyltoluene (p-Cymene)	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130			
Methyl tert-Butyl Ether (MTBE)	0.0228	0.0040	mg/Kg wet	0.0200		114	70-130			V-20
Methylene Chloride	0.0189	0.010	mg/Kg wet	0.0200		94.4	70-130			
4-Methyl-2-pentanone (MIBK)	0.195	0.020	mg/Kg wet	0.200		97.4	40-160			†
Naphthalene	0.0197	0.0040	mg/Kg wet	0.0200		98.4	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227135 - SW-846 5035										
LCS (B227135-BS1)										
Prepared & Analyzed: 04/01/19										
n-Propylbenzene	0.0207	0.0020	mg/Kg wet	0.0200		104	70-130			
Styrene	0.0198	0.0020	mg/Kg wet	0.0200		98.9	70-130			
1,1,1,2-Tetrachloroethane	0.0208	0.0020	mg/Kg wet	0.0200		104	70-130			
1,1,2,2-Tetrachloroethane	0.0213	0.0010	mg/Kg wet	0.0200		106	70-130			
Tetrachloroethylene	0.0195	0.0020	mg/Kg wet	0.0200		97.4	70-130			
Tetrahydrofuran	0.0180	0.010	mg/Kg wet	0.0200		89.8	70-130			
Toluene	0.0186	0.0020	mg/Kg wet	0.0200		93.2	70-130			
1,2,3-Trichlorobenzene	0.0205	0.0020	mg/Kg wet	0.0200		102	70-130			
1,2,4-Trichlorobenzene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130			
1,1,1-Trichloroethane	0.0175	0.0020	mg/Kg wet	0.0200		87.7	70-130			
1,1,2-Trichloroethane	0.0199	0.0020	mg/Kg wet	0.0200		99.5	70-130			
Trichloroethylene	0.0179	0.0020	mg/Kg wet	0.0200		89.7	70-130			
Trichlorofluoromethane (Freon 11)	0.0144	0.010	mg/Kg wet	0.0200		72.0	70-130			
1,2,3-Trichloropropane	0.0183	0.0020	mg/Kg wet	0.0200		91.5	70-130			
1,2,4-Trimethylbenzene	0.0194	0.0020	mg/Kg wet	0.0200		97.2	70-130			
1,3,5-Trimethylbenzene	0.0203	0.0020	mg/Kg wet	0.0200		102	70-130			
Vinyl Chloride	0.0126	0.010	mg/Kg wet	0.0200		63.0 *	70-130			L-04
m+p Xylene	0.0398	0.0040	mg/Kg wet	0.0400		99.6	70-130			
o-Xylene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0472		mg/Kg wet	0.0500		94.5	70-130			
Surrogate: Toluene-d8	0.0489		mg/Kg wet	0.0500		97.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.0485		mg/Kg wet	0.0500		97.1	70-130			
LCS Dup (B227135-BS1)										
Prepared & Analyzed: 04/01/19										
Acetone	0.203	0.10	mg/Kg wet	0.200		101	40-160	1.51	20	†
tert-Amyl Methyl Ether (TAME)	0.0200	0.0010	mg/Kg wet	0.0200		99.9	70-130	6.83	20	
Benzene	0.0173	0.0020	mg/Kg wet	0.0200		86.3	70-130	5.18	20	
Bromobenzene	0.0203	0.0020	mg/Kg wet	0.0200		101	70-130	1.97	20	
Bromochloromethane	0.0188	0.0020	mg/Kg wet	0.0200		93.8	70-130	8.26	20	
Bromodichloromethane	0.0199	0.0020	mg/Kg wet	0.0200		99.3	70-130	5.26	20	
Bromoform	0.0247	0.0020	mg/Kg wet	0.0200		124	70-130	8.19	20	V-20
Bromomethane	0.0116	0.010	mg/Kg wet	0.0200		57.9	40-160	9.27	20	L-14, V-34 †
2-Butanone (MEK)	0.202	0.040	mg/Kg wet	0.200		101	40-160	2.24	20	†
n-Butylbenzene	0.0222	0.0020	mg/Kg wet	0.0200		111	70-130	8.20	20	
sec-Butylbenzene	0.0226	0.0020	mg/Kg wet	0.0200		113	70-130	7.09	20	
tert-Butylbenzene	0.0224	0.0020	mg/Kg wet	0.0200		112	70-130	6.80	20	
tert-Butyl Ethyl Ether (TBEE)	0.0195	0.0010	mg/Kg wet	0.0200		97.5	70-130	6.77	20	
Carbon Disulfide	0.0190	0.0060	mg/Kg wet	0.0200		94.9	70-130	3.96	20	
Carbon Tetrachloride	0.0188	0.0020	mg/Kg wet	0.0200		93.8	70-130	5.27	20	
Chlorobenzene	0.0214	0.0020	mg/Kg wet	0.0200		107	70-130	4.58	20	
Chlorodibromomethane	0.0223	0.0010	mg/Kg wet	0.0200		111	70-130	4.73	20	
Chloroethane	0.0183	0.010	mg/Kg wet	0.0200		91.7	70-130	6.00	20	
Chloroform	0.0175	0.0040	mg/Kg wet	0.0200		87.7	70-130	5.52	20	
Chloromethane	0.0114	0.010	mg/Kg wet	0.0200		56.9	40-160	3.87	20	L-14 †
2-Chlorotoluene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130	4.96	20	
4-Chlorotoluene	0.0213	0.0020	mg/Kg wet	0.0200		106	70-130	6.19	20	
1,2-Dibromo-3-chloropropane (DBCP)	0.0255	0.0020	mg/Kg wet	0.0200		127	70-130	10.2	20	
1,2-Dibromoethane (EDB)	0.0206	0.0010	mg/Kg wet	0.0200		103	70-130	8.68	20	
Dibromomethane	0.0191	0.0020	mg/Kg wet	0.0200		95.6	70-130	6.99	20	
1,2-Dichlorobenzene	0.0221	0.0020	mg/Kg wet	0.0200		111	70-130	8.98	20	
1,3-Dichlorobenzene	0.0224	0.0020	mg/Kg wet	0.0200		112	70-130	6.33	20	
1,4-Dichlorobenzene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130	9.61	20	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227135 - SW-846 5035										
LCS Dup (B227135-BSD1)										
Prepared & Analyzed: 04/01/19										
Dichlorodifluoromethane (Freon 12)	0.00957	0.010	mg/Kg wet	0.0200		47.9	40-160	1.52	20	L-14 †
1,1-Dichloroethane	0.0180	0.0020	mg/Kg wet	0.0200		89.9	70-130	5.14	20	
1,2-Dichloroethane	0.0192	0.0020	mg/Kg wet	0.0200		95.8	70-130	6.59	20	
1,1-Dichloroethylene	0.0175	0.0040	mg/Kg wet	0.0200		87.4	70-130	5.17	20	
cis-1,2-Dichloroethylene	0.0179	0.0020	mg/Kg wet	0.0200		89.5	70-130	5.81	20	
trans-1,2-Dichloroethylene	0.0178	0.0020	mg/Kg wet	0.0200		89.0	70-130	4.60	20	
1,2-Dichloropropane	0.0193	0.0020	mg/Kg wet	0.0200		96.6	70-130	7.42	20	
1,3-Dichloropropane	0.0191	0.0010	mg/Kg wet	0.0200		95.7	70-130	5.43	20	
2,2-Dichloropropane	0.0182	0.0020	mg/Kg wet	0.0200		91.1	70-130	2.84	20	
1,1-Dichloropropene	0.0173	0.0020	mg/Kg wet	0.0200		86.5	70-130	5.19	20	
cis-1,3-Dichloropropene	0.0198	0.0010	mg/Kg wet	0.0200		99.1	70-130	5.26	20	
trans-1,3-Dichloropropene	0.0206	0.0010	mg/Kg wet	0.0200		103	70-130	5.78	20	
Diethyl Ether	0.0179	0.010	mg/Kg wet	0.0200		89.7	70-130	6.05	20	
Diisopropyl Ether (DIPE)	0.0183	0.0010	mg/Kg wet	0.0200		91.6	70-130	5.25	20	
1,4-Dioxane	0.209	0.10	mg/Kg wet	0.200		105	40-160	0.495	20	V-16 †
Ethylbenzene	0.0208	0.0020	mg/Kg wet	0.0200		104	70-130	4.67	20	
Hexachlorobutadiene	0.0245	0.0020	mg/Kg wet	0.0200		122	70-130	9.69	20	
2-Hexanone (MBK)	0.212	0.020	mg/Kg wet	0.200		106	40-160	6.50	20	†
Isopropylbenzene (Cumene)	0.0223	0.0020	mg/Kg wet	0.0200		112	70-130	4.56	20	
p-Isopropyltoluene (p-Cymene)	0.0224	0.0020	mg/Kg wet	0.0200		112	70-130	6.40	20	
Methyl tert-Butyl Ether (MTBE)	0.0258	0.0040	mg/Kg wet	0.0200		129	70-130	12.5	20	V-20
Methylene Chloride	0.0192	0.010	mg/Kg wet	0.0200		96.1	70-130	1.81	20	
4-Methyl-2-pentanone (MIBK)	0.209	0.020	mg/Kg wet	0.200		104	40-160	7.05	20	†
Naphthalene	0.0212	0.0040	mg/Kg wet	0.0200		106	70-130	7.39	20	
n-Propylbenzene	0.0214	0.0020	mg/Kg wet	0.0200		107	70-130	3.25	20	
Styrene	0.0208	0.0020	mg/Kg wet	0.0200		104	70-130	4.98	20	
1,1,1,2-Tetrachloroethane	0.0225	0.0020	mg/Kg wet	0.0200		112	70-130	7.88	20	
1,1,2,2-Tetrachloroethane	0.0228	0.0010	mg/Kg wet	0.0200		114	70-130	6.66	20	
Tetrachloroethylene	0.0205	0.0020	mg/Kg wet	0.0200		103	70-130	5.16	20	
Tetrahydrofuran	0.0183	0.010	mg/Kg wet	0.0200		91.3	70-130	1.62	20	
Toluene	0.0194	0.0020	mg/Kg wet	0.0200		96.9	70-130	3.92	20	
1,2,3-Trichlorobenzene	0.0217	0.0020	mg/Kg wet	0.0200		109	70-130	5.89	20	
1,2,4-Trichlorobenzene	0.0222	0.0020	mg/Kg wet	0.0200		111	70-130	9.26	20	
1,1,1-Trichloroethane	0.0183	0.0020	mg/Kg wet	0.0200		91.4	70-130	4.14	20	
1,1,2-Trichloroethane	0.0198	0.0020	mg/Kg wet	0.0200		99.1	70-130	0.413	20	
Trichloroethylene	0.0190	0.0020	mg/Kg wet	0.0200		94.9	70-130	5.65	20	
Trichlorofluoromethane (Freon 11)	0.0141	0.010	mg/Kg wet	0.0200		70.4	70-130	2.28	20	
1,2,3-Trichloropropane	0.0197	0.0020	mg/Kg wet	0.0200		98.6	70-130	7.40	20	
1,2,4-Trimethylbenzene	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130	7.82	20	
1,3,5-Trimethylbenzene	0.0215	0.0020	mg/Kg wet	0.0200		107	70-130	5.65	20	
Vinyl Chloride	0.0137	0.010	mg/Kg wet	0.0200		68.3 *	70-130	8.03	20	L-04
m+p Xylene	0.0420	0.0040	mg/Kg wet	0.0400		105	70-130	5.31	20	
o-Xylene	0.0211	0.0020	mg/Kg wet	0.0200		105	70-130	4.50	20	
Surrogate: 1,2-Dichloroethane-d4	0.0471		mg/Kg wet	0.0500		94.2	70-130			
Surrogate: Toluene-d8	0.0484		mg/Kg wet	0.0500		96.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.0478		mg/Kg wet	0.0500		95.6	70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227222 - SW-846 3546

Blank (B227222-BLK1)

Prepared: 04/02/19 Analyzed: 04/03/19

Acenaphthene	ND	0.17	mg/Kg wet							
Acenaphthylene	ND	0.17	mg/Kg wet							
Acetophenone	ND	0.34	mg/Kg wet							
Aniline	ND	0.34	mg/Kg wet							V-34
Anthracene	ND	0.17	mg/Kg wet							
Benzo(a)anthracene	ND	0.17	mg/Kg wet							
Benzo(a)pyrene	ND	0.17	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.17	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.17	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.17	mg/Kg wet							
Bis(2-chloroethoxy)methane	ND	0.34	mg/Kg wet							
Bis(2-chloroethyl)ether	ND	0.34	mg/Kg wet							
Bis(2-chloroisopropyl)ether	ND	0.34	mg/Kg wet							
Bis(2-Ethylhexyl)phthalate	ND	0.34	mg/Kg wet							
4-Bromophenylphenylether	ND	0.34	mg/Kg wet							
Butylbenzylphthalate	ND	0.34	mg/Kg wet							
4-Chloroaniline	ND	0.66	mg/Kg wet							V-34
2-Chloronaphthalene	ND	0.34	mg/Kg wet							
2-Chlorophenol	ND	0.34	mg/Kg wet							
Chrysene	ND	0.17	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.17	mg/Kg wet							
Dibenzofuran	ND	0.34	mg/Kg wet							
Di-n-butylphthalate	ND	0.34	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.34	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.34	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.34	mg/Kg wet							
3,3-Dichlorobenzidine	ND	0.17	mg/Kg wet							V-34
2,4-Dichlorophenol	ND	0.34	mg/Kg wet							
Diethylphthalate	ND	0.34	mg/Kg wet							
2,4-Dimethylphenol	ND	0.34	mg/Kg wet							
Dimethylphthalate	ND	0.34	mg/Kg wet							
2,4-Dinitrophenol	ND	0.66	mg/Kg wet							
2,4-Dinitrotoluene	ND	0.34	mg/Kg wet							
2,6-Dinitrotoluene	ND	0.34	mg/Kg wet							
Di-n-octylphthalate	ND	0.34	mg/Kg wet							
1,2-Diphenylhydrazine/Azobenzene	ND	0.34	mg/Kg wet							
Fluoranthene	ND	0.17	mg/Kg wet							
Fluorene	ND	0.17	mg/Kg wet							
Hexachlorobenzene	ND	0.34	mg/Kg wet							
Hexachlorobutadiene	ND	0.34	mg/Kg wet							
Hexachloroethane	ND	0.34	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.17	mg/Kg wet							
Isophorone	ND	0.34	mg/Kg wet							
2-Methylnaphthalene	ND	0.17	mg/Kg wet							
2-Methylphenol	ND	0.34	mg/Kg wet							V-05
3/4-Methylphenol	ND	0.34	mg/Kg wet							
Naphthalene	ND	0.17	mg/Kg wet							
Nitrobenzene	ND	0.34	mg/Kg wet							
2-Nitrophenol	ND	0.34	mg/Kg wet							
4-Nitrophenol	ND	0.66	mg/Kg wet							
Pentachlorophenol	ND	0.34	mg/Kg wet							
Phenanthrene	ND	0.17	mg/Kg wet							

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227222 - SW-846 3546										
Blank (B227222-BLK1)										
Prepared: 04/02/19 Analyzed: 04/03/19										
Phenol	ND	0.34	mg/Kg wet							
Pyrene	ND	0.17	mg/Kg wet							
Pyridine	ND	0.34	mg/Kg wet							
1,2,4-Trichlorobenzene	ND	0.34	mg/Kg wet							
2,4,5-Trichlorophenol	ND	0.34	mg/Kg wet							
2,4,6-Trichlorophenol	ND	0.34	mg/Kg wet							
Surrogate: 2-Fluorophenol	6.15		mg/Kg wet	6.67		92.2	30-130			
Surrogate: Phenol-d6	6.54		mg/Kg wet	6.67		98.0	30-130			
Surrogate: Nitrobenzene-d5	3.20		mg/Kg wet	3.33		95.9	30-130			
Surrogate: 2-Fluorobiphenyl	3.32		mg/Kg wet	3.33		99.6	30-130			
Surrogate: 2,4,6-Tribromophenol	7.60		mg/Kg wet	6.67		114	30-130			
Surrogate: p-Terphenyl-d14	4.21		mg/Kg wet	3.33		126	30-130			
LCS (B227222-BS1)										
Prepared: 04/02/19 Analyzed: 04/03/19										
Acenaphthene	1.10	0.17	mg/Kg wet	1.67		65.9	40-140			
Acenaphthylene	1.13	0.17	mg/Kg wet	1.67		67.8	40-140			
Acetophenone	1.07	0.34	mg/Kg wet	1.67		64.2	40-140			
Aniline	0.607	0.34	mg/Kg wet	1.67		36.4	* 40-140			L-07, V-34
Anthracene	1.24	0.17	mg/Kg wet	1.67		74.2	40-140			
Benzo(a)anthracene	1.18	0.17	mg/Kg wet	1.67		70.6	40-140			
Benzo(a)pyrene	1.28	0.17	mg/Kg wet	1.67		76.6	40-140			
Benzo(b)fluoranthene	1.19	0.17	mg/Kg wet	1.67		71.6	40-140			
Benzo(g,h,i)perylene	1.35	0.17	mg/Kg wet	1.67		80.9	40-140			
Benzo(k)fluoranthene	1.23	0.17	mg/Kg wet	1.67		74.0	40-140			
Bis(2-chloroethoxy)methane	1.33	0.34	mg/Kg wet	1.67		79.6	40-140			
Bis(2-chloroethyl)ether	1.17	0.34	mg/Kg wet	1.67		70.0	40-140			
Bis(2-chloroisopropyl)ether	1.37	0.34	mg/Kg wet	1.67		82.4	40-140			
Bis(2-Ethylhexyl)phthalate	1.46	0.34	mg/Kg wet	1.67		87.5	40-140			
4-Bromophenylphenylether	1.22	0.34	mg/Kg wet	1.67		73.3	40-140			
Butylbenzylphthalate	1.42	0.34	mg/Kg wet	1.67		85.5	40-140			
4-Chloroaniline	0.614	0.66	mg/Kg wet	1.67		36.9	15-140			V-34 †
2-Chloronaphthalene	1.03	0.34	mg/Kg wet	1.67		61.6	40-140			
2-Chlorophenol	1.12	0.34	mg/Kg wet	1.67		67.0	30-130			
Chrysene	1.20	0.17	mg/Kg wet	1.67		71.8	40-140			
Dibenz(a,h)anthracene	1.27	0.17	mg/Kg wet	1.67		76.0	40-140			
Dibenzofuran	1.17	0.34	mg/Kg wet	1.67		69.9	40-140			
Di-n-butylphthalate	1.34	0.34	mg/Kg wet	1.67		80.2	40-140			
1,2-Dichlorobenzene	0.939	0.34	mg/Kg wet	1.67		56.3	40-140			
1,3-Dichlorobenzene	0.910	0.34	mg/Kg wet	1.67		54.6	40-140			
1,4-Dichlorobenzene	0.922	0.34	mg/Kg wet	1.67		55.3	40-140			
3,3-Dichlorobenzidine	0.818	0.17	mg/Kg wet	1.67		49.1	40-140			V-34
2,4-Dichlorophenol	1.10	0.34	mg/Kg wet	1.67		65.7	30-130			
Diethylphthalate	1.28	0.34	mg/Kg wet	1.67		77.0	40-140			
2,4-Dimethylphenol	1.15	0.34	mg/Kg wet	1.67		69.3	30-130			
Dimethylphthalate	1.25	0.34	mg/Kg wet	1.67		74.8	40-140			
2,4-Dinitrophenol	0.720	0.66	mg/Kg wet	1.67		43.2	15-140			†
2,4-Dinitrotoluene	1.20	0.34	mg/Kg wet	1.67		71.7	40-140			
2,6-Dinitrotoluene	1.25	0.34	mg/Kg wet	1.67		75.0	40-140			
Di-n-octylphthalate	1.44	0.34	mg/Kg wet	1.67		86.2	40-140			
1,2-Diphenylhydrazine/Azobenzene	1.32	0.34	mg/Kg wet	1.67		79.0	40-140			
Fluoranthene	1.17	0.17	mg/Kg wet	1.67		70.3	40-140			
Fluorene	1.20	0.17	mg/Kg wet	1.67		71.8	40-140			

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227222 - SW-846 3546

LCS (B227222-BS1)

Prepared: 04/02/19 Analyzed: 04/03/19

Hexachlorobenzene	1.16	0.34	mg/Kg wet	1.67		69.7	40-140			
Hexachlorobutadiene	0.986	0.34	mg/Kg wet	1.67		59.2	40-140			
Hexachloroethane	0.986	0.34	mg/Kg wet	1.67		59.1	40-140			
Indeno(1,2,3-cd)pyrene	1.29	0.17	mg/Kg wet	1.67		77.6	40-140			
Isophorone	1.18	0.34	mg/Kg wet	1.67		71.1	40-140			
2-Methylnaphthalene	1.13	0.17	mg/Kg wet	1.67		68.1	40-140			
2-Methylphenol	0.884	0.34	mg/Kg wet	1.67		53.0	30-130			V-05
3/4-Methylphenol	1.10	0.34	mg/Kg wet	1.67		66.3	30-130			
Naphthalene	1.03	0.17	mg/Kg wet	1.67		62.1	40-140			
Nitrobenzene	1.06	0.34	mg/Kg wet	1.67		63.3	40-140			
2-Nitrophenol	1.13	0.34	mg/Kg wet	1.67		67.7	30-130			
4-Nitrophenol	1.18	0.66	mg/Kg wet	1.67		70.8	15-140			†
Pentachlorophenol	1.09	0.34	mg/Kg wet	1.67		65.3	30-130			
Phenanthrene	1.22	0.17	mg/Kg wet	1.67		73.3	40-140			
Phenol	1.11	0.34	mg/Kg wet	1.67		66.7	15-140			†
Pyrene	1.32	0.17	mg/Kg wet	1.67		79.2	40-140			
Pyridine	0.677	0.34	mg/Kg wet	1.67		40.6	30-140			†
1,2,4-Trichlorobenzene	0.997	0.34	mg/Kg wet	1.67		59.8	40-140			
2,4,5-Trichlorophenol	1.17	0.34	mg/Kg wet	1.67		70.0	30-130			
2,4,6-Trichlorophenol	1.22	0.34	mg/Kg wet	1.67		73.1	30-130			
Surrogate: 2-Fluorophenol	4.31		mg/Kg wet	6.67		64.6	30-130			
Surrogate: Phenol-d6	4.70		mg/Kg wet	6.67		70.4	30-130			
Surrogate: Nitrobenzene-d5	2.31		mg/Kg wet	3.33		69.2	30-130			
Surrogate: 2-Fluorobiphenyl	2.42		mg/Kg wet	3.33		72.7	30-130			
Surrogate: 2,4,6-Tribromophenol	5.26		mg/Kg wet	6.67		78.8	30-130			
Surrogate: p-Terphenyl-d14	2.88		mg/Kg wet	3.33		86.5	30-130			

LCS Dup (B227222-BS1)

Prepared: 04/02/19 Analyzed: 04/03/19

Acenaphthene	1.03	0.17	mg/Kg wet	1.67		61.7	40-140	6.68	30	
Acenaphthylene	1.06	0.17	mg/Kg wet	1.67		63.4	40-140	6.68	30	
Acetophenone	1.01	0.34	mg/Kg wet	1.67		60.8	40-140	5.50	30	
Aniline	0.760	0.34	mg/Kg wet	1.67		45.6	40-140	22.4	30	V-34
Anthracene	1.14	0.17	mg/Kg wet	1.67		68.4	40-140	8.05	30	
Benzo(a)anthracene	1.10	0.17	mg/Kg wet	1.67		66.1	40-140	6.61	30	
Benzo(a)pyrene	1.21	0.17	mg/Kg wet	1.67		72.4	40-140	5.64	30	
Benzo(b)fluoranthene	1.14	0.17	mg/Kg wet	1.67		68.3	40-140	4.66	30	
Benzo(g,h,i)perylene	1.26	0.17	mg/Kg wet	1.67		75.7	40-140	6.61	30	
Benzo(k)fluoranthene	1.16	0.17	mg/Kg wet	1.67		69.5	40-140	6.27	30	
Bis(2-chloroethoxy)methane	1.21	0.34	mg/Kg wet	1.67		72.8	40-140	8.95	30	
Bis(2-chloroethyl)ether	1.06	0.34	mg/Kg wet	1.67		63.5	40-140	9.68	30	
Bis(2-chloroisopropyl)ether	1.25	0.34	mg/Kg wet	1.67		74.8	40-140	9.62	30	
Bis(2-Ethylhexyl)phthalate	1.32	0.34	mg/Kg wet	1.67		79.2	40-140	9.89	30	
4-Bromophenylphenylether	1.14	0.34	mg/Kg wet	1.67		68.5	40-140	6.74	30	
Butylbenzylphthalate	1.30	0.34	mg/Kg wet	1.67		78.0	40-140	9.15	30	
4-Chloroaniline	0.779	0.66	mg/Kg wet	1.67		46.7	15-140	23.6	30	V-34 †
2-Chloronaphthalene	0.973	0.34	mg/Kg wet	1.67		58.4	40-140	5.34	30	
2-Chlorophenol	1.05	0.34	mg/Kg wet	1.67		63.2	30-130	5.81	30	
Chrysene	1.13	0.17	mg/Kg wet	1.67		67.9	40-140	5.55	30	
Dibenz(a,h)anthracene	1.19	0.17	mg/Kg wet	1.67		71.5	40-140	6.05	30	
Dibenzofuran	1.09	0.34	mg/Kg wet	1.67		65.7	40-140	6.28	30	
Di-n-butylphthalate	1.22	0.34	mg/Kg wet	1.67		73.3	40-140	8.91	30	
1,2-Dichlorobenzene	0.887	0.34	mg/Kg wet	1.67		53.2	40-140	5.66	30	

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227222 - SW-846 3546										
LCS Dup (B227222-BSD1)										
					Prepared: 04/02/19 Analyzed: 04/03/19					
1,3-Dichlorobenzene	0.851	0.34	mg/Kg wet	1.67		51.1	40-140	6.70	30	
1,4-Dichlorobenzene	0.851	0.34	mg/Kg wet	1.67		51.0	40-140	8.01	30	
3,3-Dichlorobenzidine	0.935	0.17	mg/Kg wet	1.67		56.1	40-140	13.3	30	V-34
2,4-Dichlorophenol	1.03	0.34	mg/Kg wet	1.67		61.6	30-130	6.47	30	
Diethylphthalate	1.20	0.34	mg/Kg wet	1.67		72.2	40-140	6.43	30	
2,4-Dimethylphenol	1.06	0.34	mg/Kg wet	1.67		63.5	30-130	8.64	30	
Dimethylphthalate	1.17	0.34	mg/Kg wet	1.67		70.3	40-140	6.28	30	
2,4-Dinitrophenol	0.670	0.66	mg/Kg wet	1.67		40.2	15-140	7.24	30	†
2,4-Dinitrotoluene	1.14	0.34	mg/Kg wet	1.67		68.7	40-140	4.36	30	
2,6-Dinitrotoluene	1.17	0.34	mg/Kg wet	1.67		69.9	40-140	6.93	30	
Di-n-octylphthalate	1.30	0.34	mg/Kg wet	1.67		77.8	40-140	10.3	30	
1,2-Diphenylhydrazine/Azobenzene	1.19	0.34	mg/Kg wet	1.67		71.1	40-140	10.5	30	
Fluoranthene	1.11	0.17	mg/Kg wet	1.67		66.6	40-140	5.41	30	
Fluorene	1.13	0.17	mg/Kg wet	1.67		67.9	40-140	5.67	30	
Hexachlorobenzene	1.10	0.34	mg/Kg wet	1.67		65.9	40-140	5.69	30	
Hexachlorobutadiene	0.925	0.34	mg/Kg wet	1.67		55.5	40-140	6.42	30	
Hexachloroethane	0.922	0.34	mg/Kg wet	1.67		55.3	40-140	6.71	30	
Indeno(1,2,3-cd)pyrene	1.21	0.17	mg/Kg wet	1.67		72.5	40-140	6.72	30	
Isophorone	1.09	0.34	mg/Kg wet	1.67		65.7	40-140	7.96	30	
2-Methylnaphthalene	1.07	0.17	mg/Kg wet	1.67		64.2	40-140	5.84	30	
2-Methylphenol	0.840	0.34	mg/Kg wet	1.67		50.4	30-130	5.14	30	V-05
3/4-Methylphenol	1.03	0.34	mg/Kg wet	1.67		62.0	30-130	6.64	30	
Naphthalene	0.981	0.17	mg/Kg wet	1.67		58.8	40-140	5.36	30	
Nitrobenzene	0.976	0.34	mg/Kg wet	1.67		58.5	40-140	7.88	30	
2-Nitrophenol	1.06	0.34	mg/Kg wet	1.67		63.7	30-130	6.12	30	
4-Nitrophenol	1.09	0.66	mg/Kg wet	1.67		65.6	15-140	7.69	30	†
Pentachlorophenol	1.01	0.34	mg/Kg wet	1.67		60.7	30-130	7.17	30	
Phenanthrene	1.14	0.17	mg/Kg wet	1.67		68.7	40-140	6.54	30	
Phenol	1.03	0.34	mg/Kg wet	1.67		62.1	15-140	7.15	30	†
Pyrene	1.20	0.17	mg/Kg wet	1.67		72.3	40-140	9.21	30	
Pyridine	0.609	0.34	mg/Kg wet	1.67		36.6	30-140	10.6	30	†
1,2,4-Trichlorobenzene	0.946	0.34	mg/Kg wet	1.67		56.8	40-140	5.28	30	
2,4,5-Trichlorophenol	1.10	0.34	mg/Kg wet	1.67		66.3	30-130	5.55	30	
2,4,6-Trichlorophenol	1.15	0.34	mg/Kg wet	1.67		68.7	30-130	6.20	30	
Surrogate: 2-Fluorophenol	4.09		mg/Kg wet	6.67		61.4	30-130			
Surrogate: Phenol-d6	4.33		mg/Kg wet	6.67		64.9	30-130			
Surrogate: Nitrobenzene-d5	2.11		mg/Kg wet	3.33		63.4	30-130			
Surrogate: 2-Fluorobiphenyl	2.23		mg/Kg wet	3.33		66.9	30-130			
Surrogate: 2,4,6-Tribromophenol	5.07		mg/Kg wet	6.67		76.0	30-130			
Surrogate: p-Terphenyl-d14	2.60		mg/Kg wet	3.33		77.9	30-130			
Matrix Spike (B227222-MS1)										
					Source: 19C1572-02 Prepared: 04/02/19 Analyzed: 04/03/19					
Acenaphthene	1.41	0.18	mg/Kg dry	1.73	ND	81.3	40-140			
Acenaphthylene	1.45	0.18	mg/Kg dry	1.73	ND	83.8	40-140			
Acetophenone	1.37	0.35	mg/Kg dry	1.73	ND	79.0	40-140			
Aniline	0.952	0.35	mg/Kg dry	1.73	ND	55.0	40-140			V-34
Anthracene	1.56	0.18	mg/Kg dry	1.73	ND	90.1	40-140			
Benzo(a)anthracene	1.50	0.18	mg/Kg dry	1.73	ND	86.7	40-140			
Benzo(a)pyrene	1.63	0.18	mg/Kg dry	1.73	ND	94.1	40-140			
Benzo(b)fluoranthene	1.60	0.18	mg/Kg dry	1.73	ND	92.6	40-140			
Benzo(g,h,i)perylene	1.71	0.18	mg/Kg dry	1.73	ND	98.8	40-140			
Benzo(k)fluoranthene	1.62	0.18	mg/Kg dry	1.73	ND	93.5	40-140			

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227222 - SW-846 3546										
Matrix Spike (B227222-MS1)	Source: 19C1572-02			Prepared: 04/02/19 Analyzed: 04/03/19						
Bis(2-chloroethoxy)methane	1.70	0.35	mg/Kg dry	1.73	ND	98.0	40-140			
Bis(2-chloroethyl)ether	1.39	0.35	mg/Kg dry	1.73	ND	80.5	40-140			
Bis(2-chloroisopropyl)ether	1.64	0.35	mg/Kg dry	1.73	ND	94.6	40-140			
Bis(2-Ethylhexyl)phthalate	1.90	0.35	mg/Kg dry	1.73	ND	110	40-140			
4-Bromophenylphenylether	1.49	0.35	mg/Kg dry	1.73	ND	85.8	40-140			
Butylbenzylphthalate	1.89	0.35	mg/Kg dry	1.73	ND	109	40-140			
4-Chloroaniline	1.06	0.69	mg/Kg dry	1.73	ND	61.3	40-140			V-34
2-Chloronaphthalene	1.33	0.35	mg/Kg dry	1.73	ND	76.7	40-140			
2-Chlorophenol	1.35	0.35	mg/Kg dry	1.73	ND	77.8	30-130			
Chrysene	1.53	0.18	mg/Kg dry	1.73	ND	88.2	40-140			
Dibenz(a,h)anthracene	1.60	0.18	mg/Kg dry	1.73	ND	92.6	40-140			
Dibenzofuran	1.49	0.35	mg/Kg dry	1.73	ND	86.0	40-140			
Di-n-butylphthalate	1.69	0.35	mg/Kg dry	1.73	ND	97.5	40-140			
1,2-Dichlorobenzene	1.05	0.35	mg/Kg dry	1.73	ND	60.6	40-140			
1,3-Dichlorobenzene	0.978	0.35	mg/Kg dry	1.73	ND	56.5	40-140			
1,4-Dichlorobenzene	1.01	0.35	mg/Kg dry	1.73	ND	58.2	40-140			
3,3-Dichlorobenzidine	1.47	0.18	mg/Kg dry	1.73	ND	85.0	40-140			V-34
2,4-Dichlorophenol	1.34	0.35	mg/Kg dry	1.73	ND	77.4	30-130			
Diethylphthalate	1.64	0.35	mg/Kg dry	1.73	ND	94.9	40-140			
2,4-Dimethylphenol	1.36	0.35	mg/Kg dry	1.73	ND	78.6	30-130			
Dimethylphthalate	1.58	0.35	mg/Kg dry	1.73	ND	91.2	40-140			
2,4-Dinitrophenol	0.961	0.69	mg/Kg dry	1.73	ND	55.5	30-130			
2,4-Dinitrotoluene	1.58	0.35	mg/Kg dry	1.73	ND	91.5	40-140			
2,6-Dinitrotoluene	1.60	0.35	mg/Kg dry	1.73	ND	92.2	40-140			
Di-n-octylphthalate	2.33	0.35	mg/Kg dry	1.73	ND	135	40-140			
1,2-Diphenylhydrazine/Azobenzene	1.60	0.35	mg/Kg dry	1.73	ND	92.4	40-140			
Fluoranthene	1.57	0.18	mg/Kg dry	1.73	ND	90.9	40-140			
Fluorene	1.54	0.18	mg/Kg dry	1.73	ND	88.7	40-140			
Hexachlorobenzene	1.43	0.35	mg/Kg dry	1.73	ND	82.7	40-140			
Hexachlorobutadiene	1.18	0.35	mg/Kg dry	1.73	ND	68.4	40-140			
Hexachloroethane	1.06	0.35	mg/Kg dry	1.73	ND	61.0	40-140			
Indeno(1,2,3-cd)pyrene	1.62	0.18	mg/Kg dry	1.73	ND	93.4	40-140			
Isophorone	1.53	0.35	mg/Kg dry	1.73	ND	88.3	40-140			
2-Methylnaphthalene	1.46	0.18	mg/Kg dry	1.73	ND	84.4	40-140			
2-Methylphenol	1.10	0.35	mg/Kg dry	1.73	ND	63.5	30-130			V-05
3/4-Methylphenol	1.38	0.35	mg/Kg dry	1.73	ND	79.5	30-130			
Naphthalene	1.33	0.18	mg/Kg dry	1.73	ND	77.1	40-140			
Nitrobenzene	1.36	0.35	mg/Kg dry	1.73	ND	78.4	40-140			
2-Nitrophenol	1.45	0.35	mg/Kg dry	1.73	ND	84.0	30-130			
4-Nitrophenol	1.71	0.69	mg/Kg dry	1.73	ND	98.6	30-130			
Pentachlorophenol	1.33	0.35	mg/Kg dry	1.73	ND	77.1	30-130			
Phenanthrene	1.56	0.18	mg/Kg dry	1.73	ND	90.1	40-140			
Phenol	1.41	0.35	mg/Kg dry	1.73	ND	81.5	30-130			
Pyrene	1.68	0.18	mg/Kg dry	1.73	ND	96.8	40-140			
1,2,4-Trichlorobenzene	1.26	0.35	mg/Kg dry	1.73	ND	72.8	40-140			
2,4,5-Trichlorophenol	1.49	0.35	mg/Kg dry	1.73	ND	86.0	30-130			
2,4,6-Trichlorophenol	1.55	0.35	mg/Kg dry	1.73	ND	89.4	30-130			
Surrogate: 2-Fluorophenol	4.98		mg/Kg dry	6.92		71.9	30-130			
Surrogate: Phenol-d6	5.80		mg/Kg dry	6.92		83.8	30-130			
Surrogate: Nitrobenzene-d5	2.88		mg/Kg dry	3.46		83.1	30-130			
Surrogate: 2-Fluorobiphenyl	3.06		mg/Kg dry	3.46		88.3	30-130			
Surrogate: 2,4,6-Tribromophenol	6.71		mg/Kg dry	6.92		96.9	30-130			

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227222 - SW-846 3546										
Matrix Spike (B227222-MS1)		Source: 19C1572-02			Prepared: 04/02/19 Analyzed: 04/03/19					
Surrogate: p-Terphenyl-d14	3.56		mg/Kg dry	3.46		103	30-130			
Matrix Spike Dup (B227222-MSD1)		Source: 19C1572-02			Prepared: 04/02/19 Analyzed: 04/03/19					
Acenaphthene	1.41	0.18	mg/Kg dry	1.76	ND	80.2	40-140	0.349	30	
Acenaphthylene	1.42	0.18	mg/Kg dry	1.76	ND	80.6	40-140	2.23	30	
Acetophenone	1.35	0.36	mg/Kg dry	1.76	ND	76.9	40-140	0.981	30	
Aniline	0.897	0.36	mg/Kg dry	1.76	ND	51.0	40-140	5.95	30	V-34
Anthracene	1.51	0.18	mg/Kg dry	1.76	ND	85.9	40-140	3.16	30	
Benzo(a)anthracene	1.48	0.18	mg/Kg dry	1.76	ND	84.1	40-140	1.34	30	
Benzo(a)pyrene	1.59	0.18	mg/Kg dry	1.76	ND	90.5	40-140	2.35	30	
Benzo(b)fluoranthene	1.55	0.18	mg/Kg dry	1.76	ND	88.2	40-140	3.23	30	
Benzo(g,h,i)perylene	1.62	0.18	mg/Kg dry	1.76	ND	91.9	40-140	5.56	30	
Benzo(k)fluoranthene	1.58	0.18	mg/Kg dry	1.76	ND	89.9	40-140	2.25	30	
Bis(2-chloroethoxy)methane	1.65	0.36	mg/Kg dry	1.76	ND	93.9	40-140	2.59	30	
Bis(2-chloroethyl)ether	1.41	0.36	mg/Kg dry	1.76	ND	80.1	40-140	1.09	30	
Bis(2-chloroisopropyl)ether	1.67	0.36	mg/Kg dry	1.76	ND	95.0	40-140	2.00	30	
Bis(2-Ethylhexyl)phthalate	1.87	0.36	mg/Kg dry	1.76	ND	106	40-140	1.51	30	
4-Bromophenylphenylether	1.47	0.36	mg/Kg dry	1.76	ND	83.4	40-140	1.29	30	
Butylbenzylphthalate	1.86	0.36	mg/Kg dry	1.76	ND	106	40-140	1.66	30	
4-Chloroaniline	0.978	0.70	mg/Kg dry	1.76	ND	55.6	40-140	8.13	30	V-34
2-Chloronaphthalene	1.28	0.36	mg/Kg dry	1.76	ND	72.8	40-140	3.66	30	
2-Chlorophenol	1.36	0.36	mg/Kg dry	1.76	ND	77.1	30-130	0.707	30	
Chrysene	1.51	0.18	mg/Kg dry	1.76	ND	85.6	40-140	1.26	30	
Dibenz(a,h)anthracene	1.50	0.18	mg/Kg dry	1.76	ND	85.3	40-140	6.48	30	
Dibenzofuran	1.47	0.36	mg/Kg dry	1.76	ND	83.3	40-140	1.55	30	
Di-n-butylphthalate	1.64	0.36	mg/Kg dry	1.76	ND	93.2	40-140	2.90	30	
1,2-Dichlorobenzene	1.12	0.36	mg/Kg dry	1.76	ND	63.8	40-140	6.65	30	
1,3-Dichlorobenzene	1.07	0.36	mg/Kg dry	1.76	ND	60.6	40-140	8.67	30	
1,4-Dichlorobenzene	1.09	0.36	mg/Kg dry	1.76	ND	61.8	40-140	7.57	30	
3,3-Dichlorobenzidine	1.40	0.18	mg/Kg dry	1.76	ND	79.6	40-140	4.88	30	V-34
2,4-Dichlorophenol	1.34	0.36	mg/Kg dry	1.76	ND	76.3	30-130	0.179	30	
Diethylphthalate	1.60	0.36	mg/Kg dry	1.76	ND	90.7	40-140	2.80	30	
2,4-Dimethylphenol	1.32	0.36	mg/Kg dry	1.76	ND	75.2	30-130	2.79	30	
Dimethylphthalate	1.55	0.36	mg/Kg dry	1.76	ND	88.1	40-140	1.89	30	
2,4-Dinitrophenol	0.961	0.70	mg/Kg dry	1.76	ND	54.6	30-130	0.0384	30	
2,4-Dinitrotoluene	1.56	0.36	mg/Kg dry	1.76	ND	88.5	40-140	1.61	30	
2,6-Dinitrotoluene	1.57	0.36	mg/Kg dry	1.76	ND	89.0	40-140	1.85	30	
Di-n-octylphthalate	2.19	0.36	mg/Kg dry	1.76	ND	124	40-140	6.52	30	
1,2-Diphenylhydrazine/Azobenzene	1.57	0.36	mg/Kg dry	1.76	ND	89.3	40-140	1.75	30	
Fluoranthene	1.55	0.18	mg/Kg dry	1.76	ND	88.0	40-140	1.63	30	
Fluorene	1.52	0.18	mg/Kg dry	1.76	ND	86.1	40-140	1.29	30	
Hexachlorobenzene	1.40	0.36	mg/Kg dry	1.76	ND	79.7	40-140	2.06	30	
Hexachlorobutadiene	1.19	0.36	mg/Kg dry	1.76	ND	67.4	40-140	0.223	30	
Hexachloroethane	1.13	0.36	mg/Kg dry	1.76	ND	64.0	40-140	6.56	30	
Indeno(1,2,3-cd)pyrene	1.52	0.18	mg/Kg dry	1.76	ND	86.6	40-140	5.94	30	
Isophorone	1.52	0.36	mg/Kg dry	1.76	ND	86.4	40-140	0.607	30	
2-Methylnaphthalene	1.45	0.18	mg/Kg dry	1.76	ND	82.1	40-140	1.08	30	
2-Methylphenol	1.08	0.36	mg/Kg dry	1.76	ND	61.2	30-130	1.92	30	V-05
3/4-Methylphenol	1.34	0.36	mg/Kg dry	1.76	ND	75.9	30-130	3.05	30	
Naphthalene	1.32	0.18	mg/Kg dry	1.76	ND	74.8	40-140	1.39	30	
Nitrobenzene	1.33	0.36	mg/Kg dry	1.76	ND	75.7	40-140	1.92	30	
2-Nitrophenol	1.44	0.36	mg/Kg dry	1.76	ND	81.7	30-130	1.14	30	

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227222 - SW-846 3546										
Matrix Spike Dup (B227222-MSD1)	Source: 19C1572-02			Prepared: 04/02/19 Analyzed: 04/03/19						
4-Nitrophenol	1.62	0.70	mg/Kg dry	1.76	ND	92.1	30-130	5.22	30	
Pentachlorophenol	1.32	0.36	mg/Kg dry	1.76	ND	74.8	30-130	1.34	30	
Phenanthrene	1.52	0.18	mg/Kg dry	1.76	ND	86.4	40-140	2.58	30	
Phenol	1.39	0.36	mg/Kg dry	1.76	ND	79.0	30-130	1.46	30	
Pyrene	1.67	0.18	mg/Kg dry	1.76	ND	95.1	40-140	0.157	30	
1,2,4-Trichlorobenzene	1.25	0.36	mg/Kg dry	1.76	ND	70.9	40-140	0.952	30	
2,4,5-Trichlorophenol	1.47	0.36	mg/Kg dry	1.76	ND	83.4	30-130	1.39	30	
2,4,6-Trichlorophenol	1.53	0.36	mg/Kg dry	1.76	ND	87.1	30-130	0.948	30	
Surrogate: 2-Fluorophenol	5.09		mg/Kg dry	7.04		72.3	30-130			
Surrogate: Phenol-d6	5.72		mg/Kg dry	7.04		81.3	30-130			
Surrogate: Nitrobenzene-d5	2.85		mg/Kg dry	3.52		80.9	30-130			
Surrogate: 2-Fluorobiphenyl	2.99		mg/Kg dry	3.52		85.1	30-130			
Surrogate: 2,4,6-Tribromophenol	6.58		mg/Kg dry	7.04		93.5	30-130			
Surrogate: p-Terphenyl-d14	3.53		mg/Kg dry	3.52		100	30-130			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227240 - SW-846 3540C

Blank (B227240-BLK1)

Prepared: 04/02/19 Analyzed: 04/04/19

Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	0.209		mg/Kg wet	0.200		105	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.207		mg/Kg wet	0.200		103	30-150			
Surrogate: Tetrachloro-m-xylene	0.218		mg/Kg wet	0.200		109	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.220		mg/Kg wet	0.200		110	30-150			

LCS (B227240-BS1)

Prepared: 04/02/19 Analyzed: 04/04/19

Aroclor-1016	0.18	0.020	mg/Kg wet	0.200		91.4	40-140			
Aroclor-1016 [2C]	0.16	0.020	mg/Kg wet	0.200		80.2	40-140			
Aroclor-1260	0.18	0.020	mg/Kg wet	0.200		87.9	40-140			
Aroclor-1260 [2C]	0.16	0.020	mg/Kg wet	0.200		79.0	40-140			
Surrogate: Decachlorobiphenyl	0.191		mg/Kg wet	0.200		95.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.188		mg/Kg wet	0.200		93.9	30-150			
Surrogate: Tetrachloro-m-xylene	0.192		mg/Kg wet	0.200		96.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.190		mg/Kg wet	0.200		94.8	30-150			

LCS Dup (B227240-BSD1)

Prepared: 04/02/19 Analyzed: 04/04/19

Aroclor-1016	0.20	0.020	mg/Kg wet	0.200		99.7	40-140	8.74	30	
Aroclor-1016 [2C]	0.18	0.020	mg/Kg wet	0.200		88.1	40-140	9.34	30	
Aroclor-1260	0.19	0.020	mg/Kg wet	0.200		94.4	40-140	7.06	30	
Aroclor-1260 [2C]	0.17	0.020	mg/Kg wet	0.200		85.2	40-140	7.53	30	
Surrogate: Decachlorobiphenyl	0.205		mg/Kg wet	0.200		102	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.202		mg/Kg wet	0.200		101	30-150			
Surrogate: Tetrachloro-m-xylene	0.208		mg/Kg wet	0.200		104	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.208		mg/Kg wet	0.200		104	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227240 - SW-846 3540C

Matrix Spike (B227240-MS1)

Source: 19C1572-01

Prepared: 04/02/19 Analyzed: 04/04/19

Aroclor-1016	0.21	0.082	mg/Kg dry	0.206	ND	101	40-140			
Aroclor-1016 [2C]	0.19	0.082	mg/Kg dry	0.206	ND	92.5	40-140			
Aroclor-1260	0.20	0.082	mg/Kg dry	0.206	ND	94.7	40-140			
Aroclor-1260 [2C]	0.18	0.082	mg/Kg dry	0.206	ND	85.0	40-140			
Surrogate: Decachlorobiphenyl	0.196		mg/Kg dry	0.206		95.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.182		mg/Kg dry	0.206		88.3	30-150			
Surrogate: Tetrachloro-m-xylene	0.201		mg/Kg dry	0.206		97.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.196		mg/Kg dry	0.206		95.1	30-150			

Matrix Spike Dup (B227240-MSD1)

Source: 19C1572-01

Prepared: 04/02/19 Analyzed: 04/04/19

Aroclor-1016	0.22	0.079	mg/Kg dry	0.196	ND	114	40-140	6.50	50	
Aroclor-1016 [2C]	0.19	0.079	mg/Kg dry	0.196	ND	98.8	40-140	1.67	50	
Aroclor-1260	0.19	0.079	mg/Kg dry	0.196	ND	97.8	40-140	1.72	50	
Aroclor-1260 [2C]	0.17	0.079	mg/Kg dry	0.196	ND	88.4	40-140	0.925	50	
Surrogate: Decachlorobiphenyl	0.194		mg/Kg dry	0.196		98.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.181		mg/Kg dry	0.196		92.1	30-150			
Surrogate: Tetrachloro-m-xylene	0.207		mg/Kg dry	0.196		105	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.203		mg/Kg dry	0.196		103	30-150			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227221 - SW-846 3546										
Blank (B227221-BLK1)										
					Prepared: 04/02/19 Analyzed: 04/03/19					
TPH (C9-C36)	ND	8.3	mg/Kg wet							
Surrogate: 2-Fluorobiphenyl	1.65		mg/Kg wet	3.33		49.6	40-140			
LCS (B227221-BS1)										
					Prepared: 04/02/19 Analyzed: 04/03/19					
TPH (C9-C36)	24.6	8.3	mg/Kg wet	33.3		73.8	40-140			
Surrogate: 2-Fluorobiphenyl	2.68		mg/Kg wet	3.33		80.5	40-140			
LCS Dup (B227221-BSD1)										
					Prepared: 04/02/19 Analyzed: 04/03/19					
TPH (C9-C36)	25.8	8.3	mg/Kg wet	33.3		77.3	40-140	4.63	30	
Surrogate: 2-Fluorobiphenyl	2.83		mg/Kg wet	3.33		85.0	40-140			
Matrix Spike (B227221-MS1)										
			Source: 19C1572-01		Prepared: 04/02/19 Analyzed: 04/04/19					
TPH (C9-C36)	29.7	8.4	mg/Kg dry	33.8	6.28	69.3	40-140			
Surrogate: 2-Fluorobiphenyl	2.75		mg/Kg dry	3.38		81.3	40-140			
Matrix Spike Dup (B227221-MSD1)										
			Source: 19C1572-01		Prepared: 04/02/19 Analyzed: 04/04/19					
TPH (C9-C36)	28.2	8.6	mg/Kg dry	34.4	6.28	63.7	40-140	5.31	30	
Surrogate: 2-Fluorobiphenyl	2.69		mg/Kg dry	3.44		78.2	40-140			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227094 - SW-846 7471										
Blank (B227094-BLK1) Prepared: 04/02/19 Analyzed: 04/03/19										
Mercury	ND	0.025	mg/Kg wet							
LCS (B227094-BS1) Prepared: 04/02/19 Analyzed: 04/03/19										
Mercury	2.63	0.37	mg/Kg wet	3.71		70.8	65-135			
LCS Dup (B227094-BSD1) Prepared: 04/02/19 Analyzed: 04/03/19										
Mercury	3.19	0.37	mg/Kg wet	3.71		86.0	65-135	19.3	30	
Batch B227367 - SW-846 3050B										
Blank (B227367-BLK1) Prepared: 04/03/19 Analyzed: 04/04/19										
Antimony	ND	1.7	mg/Kg wet							
Arsenic	ND	1.7	mg/Kg wet							
Barium	ND	1.7	mg/Kg wet							
Beryllium	ND	0.17	mg/Kg wet							
Cadmium	ND	0.17	mg/Kg wet							
Chromium	ND	0.33	mg/Kg wet							
Lead	ND	0.50	mg/Kg wet							
Nickel	ND	0.33	mg/Kg wet							
Selenium	ND	3.3	mg/Kg wet							
Silver	ND	0.33	mg/Kg wet							
Thallium	ND	1.7	mg/Kg wet							
Vanadium	ND	0.67	mg/Kg wet							
Zinc	ND	0.67	mg/Kg wet							
LCS (B227367-BS1) Prepared: 04/03/19 Analyzed: 04/04/19										
Antimony	64.2	4.8	mg/Kg wet	89.6		71.6	3.3-196.4			
Arsenic	200	4.8	mg/Kg wet	202		99.1	82.7-117.3			
Barium	260	4.8	mg/Kg wet	270		96.2	82.6-117.8			
Beryllium	90.8	0.48	mg/Kg wet	96.8		93.8	83.4-116.7			
Cadmium	128	0.48	mg/Kg wet	141		91.0	83-117			
Chromium	159	0.96	mg/Kg wet	167		95.4	81.4-118			
Lead	70.9	1.4	mg/Kg wet	73.8		96.0	82.9-117.1			
Nickel	85.7	0.96	mg/Kg wet	89.4		95.8	82.9-117.5			
Selenium	50.0	9.6	mg/Kg wet	49.9		100	79.2-120.6			
Silver	72.1	0.96	mg/Kg wet	71.1		101	79.7-120.1			
Thallium	59.2	4.8	mg/Kg wet	58.5		101	80.7-119.5			
Vanadium	52.7	1.9	mg/Kg wet	58.2		90.6	79-121			
Zinc	246	1.9	mg/Kg wet	264		93.2	80.7-119.3			
LCS Dup (B227367-BSD1) Prepared: 04/03/19 Analyzed: 04/04/19										
Antimony	60.6	4.9	mg/Kg wet	89.6		67.7	3.3-196.4	5.72	30	
Arsenic	183	4.9	mg/Kg wet	202		90.4	82.7-117.3	9.17	30	
Barium	240	4.9	mg/Kg wet	270		89.0	82.6-117.8	7.82	30	
Beryllium	85.0	0.49	mg/Kg wet	96.8		87.8	83.4-116.7	6.53	30	
Cadmium	125	0.49	mg/Kg wet	141		88.7	83-117	2.48	30	
Chromium	150	0.97	mg/Kg wet	167		89.6	81.4-118	6.23	30	
Lead	65.4	1.5	mg/Kg wet	73.8		88.6	82.9-117.1	8.08	30	
Nickel	82.6	0.97	mg/Kg wet	89.4		92.4	82.9-117.5	3.57	30	
Selenium	46.8	9.7	mg/Kg wet	49.9		93.8	79.2-120.6	6.57	30	
Silver	66.3	0.97	mg/Kg wet	71.1		93.2	79.7-120.1	8.46	30	
Thallium	56.0	4.9	mg/Kg wet	58.5		95.6	80.7-119.5	5.66	30	
Vanadium	48.9	1.9	mg/Kg wet	58.2		84.1	79-121	7.49	30	
Zinc	232	1.9	mg/Kg wet	264		88.0	80.7-119.3	5.71	30	

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B227367 - SW-846 3050B

Duplicate (B227367-DUP1)

Source: 19C1572-06

Prepared: 04/03/19 Analyzed: 04/04/19

Antimony	ND	1.8	mg/Kg dry		ND			NC	35	
Arsenic	5.81	1.8	mg/Kg dry		5.00			14.9	35	
Barium	22.7	1.8	mg/Kg dry		20.9			8.09	35	
Beryllium	0.242	0.18	mg/Kg dry		0.252			4.07	35	
Cadmium	0.195	0.18	mg/Kg dry		ND			NC	35	
Chromium	9.31	0.35	mg/Kg dry		9.05			2.80	35	
Lead	4.65	0.53	mg/Kg dry		3.89			17.7	35	
Nickel	7.38	0.35	mg/Kg dry		7.14			3.33	35	
Selenium	ND	3.5	mg/Kg dry		ND			NC	35	
Silver	ND	0.35	mg/Kg dry		ND			NC	35	
Thallium	ND	1.8	mg/Kg dry		ND			NC	35	
Vanadium	12.6	0.71	mg/Kg dry		12.4			2.10	35	
Zinc	17.1	0.71	mg/Kg dry		16.6			2.58	35	

MRL Check (B227367-MRL1)

Prepared: 04/03/19 Analyzed: 04/04/19

Lead	0.492	0.48	mg/Kg wet	0.482		102		80-120		
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Matrix Spike (B227367-MS1)

Source: 19C1572-06

Prepared: 04/03/19 Analyzed: 04/04/19

Antimony	7.26	1.7	mg/Kg dry	17.2	ND	42.2	*	75-125		MS-07
Arsenic	20.8	1.7	mg/Kg dry	17.2	5.00	91.9		75-125		
Barium	39.9	1.7	mg/Kg dry	17.2	20.9	110		75-125		
Beryllium	15.8	0.17	mg/Kg dry	17.2	0.252	90.6		75-125		
Cadmium	15.8	0.17	mg/Kg dry	17.2	0.151	91.2		75-125		
Chromium	25.8	0.34	mg/Kg dry	17.2	9.05	97.3		75-125		
Lead	19.5	0.52	mg/Kg dry	17.2	3.89	90.6		75-125		
Nickel	24.2	0.34	mg/Kg dry	17.2	7.14	99.4		75-125		
Selenium	19.5	3.4	mg/Kg dry	17.2	ND	113		75-125		
Silver	16.7	0.34	mg/Kg dry	17.2	0.306	95.4		75-125		
Thallium	16.4	1.7	mg/Kg dry	17.2	ND	95.1		75-125		
Vanadium	30.1	0.69	mg/Kg dry	17.2	12.4	103		75-125		
Zinc	49.7	0.69	mg/Kg dry	34.4	16.6	96.2		75-125		

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227022 - SW-846 9014										
Blank (B227022-BLK1) Prepared: 03/30/19 Analyzed: 03/31/19										
Reactive Cyanide	ND	0.40	mg/Kg							
LCS (B227022-BS1) Prepared: 03/30/19 Analyzed: 03/31/19										
Reactive Cyanide	9.7	0.40	mg/Kg	10.0		96.9	83.6-111			
Batch B227024 - SW-846 9030A										
Blank (B227024-BLK1) Prepared: 03/30/19 Analyzed: 03/31/19										
Reactive Sulfide	ND	2.0	mg/L							
LCS (B227024-BS1) Prepared: 03/30/19 Analyzed: 03/31/19										
Reactive Sulfide	12	2.0	mg/L	14.8		83.8	54.9-121			
Batch B227052 - SW-846 9045C										
LCS (B227052-BS1) Prepared & Analyzed: 03/30/19										
pH	6.03		pH Units	6.00		101	90-110			
LCS (B227052-BS2) Prepared & Analyzed: 03/30/19										
pH	6.01		pH Units	6.00		100	90-110			
Duplicate (B227052-DUP1) Source: 19C1572-08 Prepared & Analyzed: 03/30/19										
pH	6.2		pH Units		6.4			2.53	5	H-03
Batch B227054 - SM21-22 2510B Modified										
Blank (B227054-BLK1) Prepared & Analyzed: 03/31/19										
Specific conductance	ND	2.0	µmhos/cm							
LCS (B227054-BS1) Prepared & Analyzed: 03/31/19										
Specific conductance	190		µmhos/cm	192		99.3	90-110			
Batch B227087 - SM21-22 2510B Modified										
Blank (B227087-BLK1) Prepared & Analyzed: 04/01/19										
Specific conductance	ND	2.0	µmhos/cm							
LCS (B227087-BS1) Prepared & Analyzed: 04/01/19										
Specific conductance	200		µmhos/cm	192		102	90-110			

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B227087 - SM21-22 2510B Modified

Duplicate (B227087-DUP1)		Source: 19C1572-06			Prepared & Analyzed: 04/01/19					
Specific conductance	5.0	2.0	µmhos/cm		4.7			5.36	21	

Batch B227324 - % Solids

Duplicate (B227324-DUP7)		Source: 19C1572-04			Prepared: 04/03/19 Analyzed: 04/04/19					
% Solids	94.9		% Wt		94.8			0.0636	20	

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

LCS

SW-846 8082A

Lab Sample ID: B227240-BS1 Date(s) Analyzed: 04/04/2019 04/04/2019

Instrument ID (1): ECD5 Instrument ID (2): ECD5

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	-0.030	0.030	0.18	
	2	0.000	-0.030	0.030	0.16	11.8
Aroclor-1260	1	0.000	-0.030	0.030	0.18	
	2	0.000	-0.030	0.030	0.16	11.8

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

LCS Dup

SW-846 8082A

Lab Sample ID: B227240-BSD1 Date(s) Analyzed: 04/04/2019 04/04/2019

Instrument ID (1): ECD5 Instrument ID (2): ECD5

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	-0.030	0.030	0.20	
	2	0.000	-0.030	0.030	0.18	10.5
Aroclor-1260	1	0.000	-0.030	0.030	0.19	
	2	0.000	-0.030	0.030	0.17	11.1

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

Matrix Spike

SW-846 8082A

Lab Sample ID: B227240-MS1 Date(s) Analyzed: 04/04/2019 04/04/2019

Instrument ID (1): ECD5 Instrument ID (2): ECD5

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	-0.030	0.030	0.21	
	2	0.000	-0.030	0.030	0.19	10.0
Aroclor-1260	1	0.000	-0.030	0.030	0.20	
	2	0.000	-0.030	0.030	0.18	10.5

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

Matrix Spike Dup

SW-846 8082A

Lab Sample ID: B227240-MSD1 Date(s) Analyzed: 04/04/2019 04/04/2019

Instrument ID (1): ECD5 Instrument ID (2): ECD5

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	-0.030	0.030	0.22	
	2	0.000	-0.030	0.030	0.19	14.6
Aroclor-1260	1	0.000	-0.030	0.030	0.19	
	2	0.000	-0.030	0.030	0.17	11.1

FLAG/QUALIFIER SUMMARY

- * QC result is outside of established limits.
 - † Wide recovery limits established for difficult compound.
 - ‡ Wide RPD limits established for difficult compound.
 - # Data exceeded client recommended or regulatory level
 - ND Not Detected
 - RL Reporting Limit is at the level of quantitation (LOQ)
 - DL Detection Limit is the lower limit of detection determined by the MDL study
 - MCL Maximum Contaminant Level
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
- No results have been blank subtracted unless specified in the case narrative section.
- H-03 Sample received after recommended holding time was exceeded.
 - L-04 Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
 - L-07 Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
 - L-14 Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.
 - MS-07 Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.
 - O-32 A dilution was performed as part of the standard analytical procedure.
 - V-05 Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
 - V-16 Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
 - V-20 Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
 - V-34 Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 1030 in Soil	
Ignitability	NY,NH,CT,NC,ME,VA
SW-846 6010D in Soil	
Antimony	CT,NH,NY,ME,VA,NC
Arsenic	CT,NH,NY,ME,VA,NC
Barium	CT,NH,NY,ME,VA,NC
Beryllium	CT,NH,NY,ME,VA,NC
Cadmium	CT,NH,NY,ME,VA,NC
Chromium	CT,NH,NY,ME,VA,NC
Lead	CT,NH,NY,AIHA,ME,VA,NC
Nickel	CT,NH,NY,ME,VA,NC
Selenium	CT,NH,NY,ME,VA,NC
Silver	CT,NH,NY,ME,VA,NC
Thallium	CT,NH,NY,ME,VA,NC
Vanadium	CT,NH,NY,ME,VA,NC
Zinc	CT,NH,NY,ME,VA,NC
SW-846 7471B in Soil	
Mercury	CT,NH,NY,NC,ME,VA
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC,VA
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1221	CT,NH,NY,ME,NC,VA
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1232	CT,NH,NY,ME,NC,VA
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1242	CT,NH,NY,ME,NC,VA
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1248	CT,NH,NY,ME,NC,VA
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1254	CT,NH,NY,ME,NC,VA
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1260	CT,NH,NY,ME,NC,VA
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1262	NY,NC,VA
Aroclor-1262 [2C]	NY,NC,VA
Aroclor-1268	NY,NC,VA
Aroclor-1268 [2C]	NY,NC,VA
SW-846 8260C in Soil	
Acetone	CT,NH,NY,ME
Benzene	CT,NH,NY,ME
Bromobenzene	NH,NY,ME
Bromochloromethane	NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260C in Soil</i>	
n-Butylbenzene	CT,NH,NY,ME
sec-Butylbenzene	CT,NH,NY,ME
tert-Butylbenzene	CT,NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
2-Chlorotoluene	CT,NH,NY,ME
4-Chlorotoluene	CT,NH,NY,ME
1,2-Dibromo-3-chloropropane (DBCP)	NY
Dibromomethane	NH,NY,ME
1,2-Dichlorobenzene	CT,NH,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
Dichlorodifluoromethane (Freon 12)	NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	CT,NH,NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,3-Dichloropropane	NH,NY,ME
2,2-Dichloropropane	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
1,4-Dioxane	NY
Ethylbenzene	CT,NH,NY,ME
Hexachlorobutadiene	NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	CT,NH,NY,ME
p-Isopropyltoluene (p-Cymene)	NH,NY
Methyl tert-Butyl Ether (MTBE)	NH,NY
Methylene Chloride	CT,NH,NY,ME
4-Methyl-2-pentanone (MIBK)	CT,NH,NY
Naphthalene	NH,NY,ME
n-Propylbenzene	NH,NY
Styrene	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
1,2,3-Trichlorobenzene	NY
1,2,4-Trichlorobenzene	NH,NY,ME

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Soil	
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,4-Trimethylbenzene	CT,NH,NY,ME
1,3,5-Trimethylbenzene	CT,NH,NY,ME
Vinyl Chloride	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME
SW-846 8270D in Soil	
Acenaphthene	CT,NY,NH
Acenaphthylene	CT,NY,NH
Acetophenone	NY,NH
Aniline	NY,NH
Anthracene	CT,NY,NH
Benzo(a)anthracene	CT,NY,NH
Benzo(a)pyrene	CT,NY,NH
Benzo(b)fluoranthene	CT,NY,NH
Benzo(g,h,i)perylene	CT,NY,NH
Benzo(k)fluoranthene	CT,NY,NH
Bis(2-chloroethoxy)methane	CT,NY,NH
Bis(2-chloroethyl)ether	CT,NY,NH
Bis(2-chloroisopropyl)ether	CT,NY,NH
Bis(2-Ethylhexyl)phthalate	CT,NY,NH
4-Bromophenylphenylether	CT,NY,NH
Butylbenzylphthalate	CT,NY,NH
4-Chloroaniline	CT,NY,NH
2-Chloronaphthalene	CT,NY,NH
2-Chlorophenol	CT,NY,NH
Chrysene	CT,NY,NH
Dibenz(a,h)anthracene	CT,NY,NH
Dibenzofuran	CT,NY,NH
Di-n-butylphthalate	CT,NY,NH
1,2-Dichlorobenzene	NY,NH
1,3-Dichlorobenzene	NY,NH
1,4-Dichlorobenzene	NY,NH
3,3-Dichlorobenzidine	CT,NY,NH
2,4-Dichlorophenol	CT,NY,NH
Diethylphthalate	CT,NY,NH
2,4-Dimethylphenol	CT,NY,NH
Dimethylphthalate	CT,NY,NH
2,4-Dinitrophenol	CT,NY,NH
2,4-Dinitrotoluene	CT,NY,NH
2,6-Dinitrotoluene	CT,NY,NH
Di-n-octylphthalate	CT,NY,NH

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8270D in Soil</i>	
1,2-Diphenylhydrazine/Azobenzene	NY,NH
Fluoranthene	CT,NY,NH
Fluorene	NY,NH
Hexachlorobenzene	CT,NY,NH
Hexachlorobutadiene	CT,NY,NH
Hexachloroethane	CT,NY,NH
Indeno(1,2,3-cd)pyrene	CT,NY,NH
Isophorone	CT,NY,NH
2-Methylnaphthalene	CT,NY,NH
2-Methylphenol	CT,NY,NH
3/4-Methylphenol	CT,NY,NH
Naphthalene	CT,NY,NH
Nitrobenzene	CT,NY,NH
2-Nitrophenol	CT,NY,NH
4-Nitrophenol	CT,NY,NH
Pentachlorophenol	CT,NY,NH
Phenanthrene	CT,NY,NH
Phenol	CT,NY,NH
Pyrene	CT,NY,NH
1,2,4-Trichlorobenzene	CT,NY,NH
2,4,5-Trichlorophenol	CT,NY,NH
2,4,6-Trichlorophenol	CT,NY,NH

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2019
CT	Connecticut Department of Public Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2019
FL	Florida Department of Health	E871027 NELAP	06/30/2019
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2019
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2019
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2019
NC-DW	North Carolina Department of Health	25703	07/31/2019

HELP://www.contestlabs.com
CHAIN OF CUSTODY RECORD

DLH 19C 157d

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

Client Name: **VORTEX**
Address: **100N Washington St, Suite 302, Boston MA**
Phone: **617-275-5407**
Project Location: **River's Edge, MA**
Project Number: **400417**
Project Manager: **K. Sarson**
Con-Test Quote Name/Number:
Invoice Recipient: **K. Sarson**
Sampled By: **K. Sarson**

7-Day 10-Day
Due Date: **5-Day**
1-Day 3-Day
2-Day 4-Day
Format: PDF EXCEL
Other: **EDD**
CLP Like Data Pkg Required:
Email To: **Ksarson@vortexeng.com**
Fax To #:

Con-Test Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	Matrix Code	Conc Code
1	V-107 (5-10)	3/27/19	1305	X		S	
2	V-108 (0-5)		1315				
3	V-109 (5-10)		1325				
4	V-110 (5-10)		1335				
5	V-111 (0-10)		1345				
6	V-112 (0-5)		1400				
7	V-113 (0-5)	3/28/19	1100				
8	V-114 (5-10)		1135				
9	V-115 (5-10)		1200				
10	V-116 (0-5)		1230				

Comments:

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature) **[Signature]** Date/Time: **1090**
 Relinquished by: (signature) **[Signature]** Date/Time: **1090**
 Relinquished by: (signature) **[Signature]** Date/Time: **1910**
 Relinquished by: (signature) **[Signature]** Date/Time: **1646**
 Relinquished by: (signature) **[Signature]** Date/Time: **[Blank]**
 Relinquished by: (signature) **[Signature]** Date/Time: **[Blank]**

Special Requirements
 MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required
 PWSID #

Project Entity
 Government
 Federal
 City
 Municipality
 21 J
 Brownfield
 MWRA
 School
 MBTA
 WRIA
 Chromatogram
 AIHA-LAP, LLC
 Other

PCB ONLY
 Soxhlet
 Non Soxhlet



I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Vertex

Received By SL Date 3/29/19 Time 1040

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 3 Actual Temp - 4.2
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? N/A Were Samples Tampered with? N/A
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? F
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? M. V. M.

Is there enough Volume? T
 Is there Headspace where applicable? F MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? N/A Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-	8	250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-	16	Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-	1	250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-	16	Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

PH pres hold

**APPENDIX E:
Public Involvement Records and
Notifications**



April 19, 2022

Owner of 468 Boston Post Road
c/o US Fish & Wildlife Service
300 Westgate Center Drive
Hadley, MA 01035

**Re: Downgradient Property Status Opinion
River's Edge
484 – 490 Boston Post Road
Wayland, Massachusetts 01778
MassDEP Release Tracking Numbers (RTN) 3-36013 & 3-37278**

To Whom it May Concern:

In accordance with the provisions of 310 CMR 40.0183(5) of the Massachusetts Contingency Plan (MCP), notice is hereby given that Alta River's Edge, LLC. has filed a Downgradient Property Status Opinion with the Massachusetts Department of Environmental Protection (MassDEP) with regard to a release of oil and/or hazardous material at the above referenced property.

A Downgradient Property Status Opinion has been prepared by The Vertex Companies, LLC. (VERTEX) with regard to this property. The Downgradient Property Status Opinion stamped by the Licensed Site Professional is attached. A complete copy of the Downgradient Property Status Opinion report and the disposal site file for RTN 3-36013 and RTN 3-37278 can be reviewed at the Northeast Regional Office of the MassDEP, 205B Lowell Street, Wilmington, MA, or on the MassDEP Searchable Sites Database:

<https://eeasonline.eea.state.ma.us/portal#!/wastesite/3-0036013>

THE VERTEX COMPANIES, LLC
100 NORTH WASHINGTON STREET, SUITE 302
BOSTON, MA 02114

617.275.5407 | VERTEXENG.COM

If you have any questions regarding the Downgradient Property Status Opinion, please do not hesitate to contact the undersigned at 781-952-6000 or at wgibbons@vertexeng.com.

Thank you,

The Vertex Companies, LLC



Kristen Sarson
Project Manager
781-917-5360 (mobile)



William J. Gibbons, PG, LSP
Senior Project Manager
617-830-1540 (office)



April 19, 2022

Owner of 471 Boston Post Road
c/o Town of Wayland Board of Selectmen
41 Cochituate Road
Wayland, MA 01778

**Re: Downgradient Property Status Opinion
River's Edge
484 – 490 Boston Post Road
Wayland, Massachusetts 01778
MassDEP Release Tracking Numbers (RTN) 3-36013 & 3-37278**

To Whom it May Concern:

In accordance with the provisions of 310 CMR 40.0183(5) of the Massachusetts Contingency Plan (MCP), notice is hereby given that Alta River's Edge, LLC. has filed a Downgradient Property Status Opinion with the Massachusetts Department of Environmental Protection (MassDEP) with regard to a release of oil and/or hazardous material at the above referenced property.

A Downgradient Property Status Opinion has been prepared by The Vertex Companies, LLC. (VERTEX) with regard to this property. The Downgradient Property Status Opinion stamped by the Licensed Site Professional is attached. A complete copy of the Downgradient Property Status Opinion report and the disposal site file for RTN 3-36013 and RTN 3-37278 can be reviewed at the Northeast Regional Office of the MassDEP, 205B Lowell Street, Wilmington, MA, or on the MassDEP Searchable Sites Database:

<https://eeasonline.eea.state.ma.us/portal#!/wastesite/3-0036013>

THE VERTEX COMPANIES, LLC
100 NORTH WASHINGTON STREET, SUITE 302
BOSTON, MA 02114

617.275.5407 | VERTEXENG.COM

If you have any questions regarding the Downgradient Property Status Opinion, please do not hesitate to contact the undersigned at 781-952-6000 or at wgibbons@vertexeng.com.

Thank you,

The Vertex Companies, LLC



Kristen Sarson
Project Manager
781-917-5360 (mobile)



William J. Gibbons, PG, LSP
Senior Project Manager
617-830-1540 (office)



April 19, 2022

Town of Sudbury Transfer Station
c/o Town of Sudbury Department of Public Works
275 Old Lancaster Road
Sudbury, MA 01776

**Re: Downgradient Property Status Opinion
River's Edge
484 – 490 Boston Post Road
Wayland, Massachusetts 01778
MassDEP Release Tracking Numbers (RTN) 3-36013 & 3-37278**

To Whom it May Concern:

In accordance with the provisions of 310 CMR 40.0183(5) of the Massachusetts Contingency Plan (MCP), notice is hereby given that Alta River's Edge, LLC. has filed a Downgradient Property Status Opinion with the Massachusetts Department of Environmental Protection (MassDEP) with regard to a release of oil and/or hazardous material at the above referenced property.

A Downgradient Property Status Opinion has been prepared by The Vertex Companies, LLC. (VERTEX) with regard to this property. The Downgradient Property Status Opinion stamped by the Licensed Site Professional is attached. A complete copy of the Downgradient Property Status Opinion report and the disposal site file for RTN 3-36013 and RTN 3-37278 can be reviewed at the Northeast Regional Office of the MassDEP, 205B Lowell Street, Wilmington, MA, or on the MassDEP Searchable Sites Database:

<https://eeasonline.eea.state.ma.us/portal#!/wastesite/3-0036013>

THE VERTEX COMPANIES, LLC
100 NORTH WASHINGTON STREET, SUITE 302
BOSTON, MA 02114

617.275.5407 | VERTEXENG.COM

If you have any questions regarding the Downgradient Property Status Opinion, please do not hesitate to contact the undersigned at 781-952-6000 or at wgibbons@vertexeng.com.

Thank you,

The Vertex Companies, LLC



Kristen Sarson
Project Manager
781-917-5360 (mobile)



William J. Gibbons, PG, LSP
Senior Project Manager
617-830-1540 (office)

**APPENDIX F:
Response to Public Comment**

Comments Received on the Draft Downgradient Property Status Opinion Report

Public Comment	Response
<p>General Comment: As Vertex is well aware, DEP has issued RTN 3-37278 to identify the reportable concentration of per- and polyfluorinated alkyl substances (PFAS) in groundwater which Alta Rivers Edge, LLC notified DEP about on February 8, 2022. The Town of Wayland notes that Vertex should replace all instances of "RTN XXXXXX" and "RTN 3-XXXXX" in the final DPS Opinion with "RTN 3-37278."</p>	<p>This has been updated in the final DPS Opinion Report.</p>
<p>Section 1.0: It would appear that from the data presented on Figures 4A through 4C, the closed Sand Hill Landfill cannot be said to be hydraulically upgradient from the River's Edge site. Any attribution of that facility being the source of the constituents detected in groundwater or that the constituents of concern are coming onto the site from property due north is pure, unsubstantiated speculation. Please remove the references here and elsewhere in the report.</p>	<p>The Sand Hill Landfill is located northwest of the Site and is located immediately north of a wetland area that, based on aerial photographs, may be hydrogeologically connected to the wetland area abutting the Site. VERTEX acknowledges there is no data upon which to conclude that a releases of oil or hazardous materials from the Sand Hill Landfill has migrated to the Site. Some stormwater and groundwater from the area of the Sand Hill Landfill would be expected to discharge to the wetland and landfills are considered likely sources of PFAS release to the environment; however, the Sand Hill Landfill has not been conclusively shown to be a source of PFAS or metals release to the Site. The DPS Opinion has been modified to note the existence of the Sand Hill Landfill as a potential source of PFAS and metals release to the area and to clarify it is not a known source of contaminant migration to the Site. Future investigations of potential sources of the PFAS release, particularly the PFAS that is migrating onto the Site from the northerly abutting wetland, should evaluate whether the Sand Hill Landfill is a contributing source to PFAS in the wetland.</p>
<p>Section 2.1: See comment re: Section 1.0 above.</p>	
<p>Section 2.1: Section 310 CMR 40.0183(4)(e) requires that a DPS Opinion provide "a plan showing the downgradient or downstream property and the disposal site boundaries (to the extent known)..." The first paragraph on text page 2 of the draft DPS report indicates that Figure 2 shows the "known Disposal Site boundaries." However Figure 2 in the draft DPS report (Site Schematic) shows the RTN 3-34474 boundary; that RTN is for asbestos issues in soi formerly stockpiled at the Property and unrelated to the DPS Opinion. Figure 3 in the draft DPS Report (Surrounding Properties) shows the estimated boundaries of RTNs 3-36013 and "3-XXXXX" (i.e., 3-37278). Figure 3 shows the easterly (downgradient) extent of RTN 3-37278 approximately 30' beyond the easterly Property boundary when in fact Vertex does not know the extent of PFAS contamination beyond Property boundaries; in such cases it is customary to leave the extent open (as Vertex did with the westerly (upgradient) bound, or else use a lesser line weight to indicate 'extent unknown.' The Town of Wayland requests that Vertex correct their reference at the end of Section 2.1 in the final DPS Opinion to indicate Figure 3 and also alter the current yellow dotted line to indicate that the easterly extent of PFAS contamination in groundwater is not yet known.</p>	<p>This has been updated in the final DPS Opinion Report.</p>
<p>Section 2.2: During the February 17, 2022 public meeting, Mr. Sciacca of the SuAsCo River Stewardship Council explained that the Sudbury River is much closer to the property than the 1,400 feet stated in your report. Please confirm and revise the distance accordingly.</p>	<p>The distance to the river has been updated in the final report.</p>
<p>Section 2.3: In initial comments on the draft Public Involvement Plan (PIP), you were advised that the previous use of the site was by the Wayland-Sudbury Septage Treatment Facility (as distinct from the Town of Wayland wastewater treatment plant which is located within the Town Center shopping center). Although you did revise it in the final PIP, for some reason you reverted to the confusing nomenclature here. Please revise the reference here to avoid confusion to future readers. The Wayland Department of Public Works did not come into existence until 2010. The Wayland Highway Department was the organization that stored stockpiles on the site in the early years.</p>	<p>This has been updated in the final DPS Opinion Report.</p>

Comments Received on the Draft Downgradient Property Status Opinion Report

Public Comment	Response
<p>Section 2.5.3 (& 4.2 & 8.1): On text page 8 of the draft DPS report, Vertex notes that ammonia identified as an RCGW-1 reportable concentration exceedance (at 2 mg/L) may not be an actual exceedance because the laboratory analysis was for total ammonia as nitrogen and the MCP has no reportable concentration standards for either ammonia as nitrogen or total ammonia. Vertex repeats this conclusion in the last paragraph on text page 22 of the draft DPS report and summarizes it again in the first bullet on text page 9 of the report. However, DEP did promulgate an RCGW-1 reportable concentration of 1 mg/L for (dissolved) ammonia in Subpart P of the MCP. Vertex had groundwater samples they collected from the Property on April 2, 2019 analyzed for several nitrogen parameters (ammonia as N, nitrate as N, nitrite as N, total Kjeldahl nitrogen & total nitrogen). However, they did not analyze any groundwater samples from the property for dissolved ammonia (which can be done as a screening test on field-filtered samples using an ion-selective electrode, similar to pH testing). The Town of Wayland requests that Vertex either test groundwater samples from the Property for dissolved ammonia to verify or refute whether this parameter is present at or above reportable concentrations, or else provide an explanation as to why such testing is not necessary in their final DPS Opinion.</p>	<p>VERTEX analyzed groundwater at the property for constituents of concern based upon previous subsurface investigations and based on specific requests by the Town of Wayland. Although, there are no promulgated RCGW-1 Reportable Concentrations for total ammonia as nitrogen, the groundwater flow direction and detected concentration gradient of total ammonia as nitrogen indicate that it is most likely originating from the upgradient landfill. The highest concentrations of total ammonia as nitrogen at the Site were detected in groundwater samples collected from wells V-302(MW) and V-303(MW) located at the western edge of the Site and immediately downgradient of the landfill, and not in locations where impacts from the historical operation of the former Wayland-Sudbury Septage Treatment Facility would be expected. The concentration of total ammonia as nitrogen detected in well V-306(MW) located in the former septage facility infiltration bed, which is also located at the western edge of the Site and immediately downgradient of the landfill, was lower than the concentrations detected in wells V-302(MW) and V-303(MW), which is consistent with a conceptual site model of well V-306(MW) being located downgradient of less of the landfill waste mass than wells V-302(MW) and V-303(MW), which are located downgradient of the center of the landfill waste mass. This is supported by historical aerial photographs showing the area of landfill activity (see publicly available historical aerial photographs at www.historicalaerials.com). This distribution of total ammonia as nitrogen is also consistent with the cessation of activity at the former Wayland-Sudbury Septage Treatment Facility 11 years ago. Additionally, the speciation of ammonia present within groundwater is highly dependent on pH and water temperatures. The higher the pH and warmer the water, the more prevalent ammonia would be. Based on pH measurements of groundwater at the property (5.8 to 6.7), and average Massachusetts groundwater temperatures, the speciation of ammonia most likely to be present is the less harmful ammonium (which does not have a promulgated RCGW-1 Reportable Concentration). Therefore, based on an absence of a current source of ammonia at the property, the mapped groundwater flow and gradient of total ammonia detects across the property, and measured groundwater pH, dissolved ammonia was not considered for this investigation. VERTEX also notes, that any historical releases of ammonia from the former Wayland-Sudbury Septage Treatment Facility would be exempt from the MCP notification requirements pursuant to 310 CMR 40.0317(10) and that concentrations of total ammonia as nitrogen were not detectable in groundwater samples collected the two furthest downgradient monitoring wells at the Site. The table summarizing groundwater analytical results in the DPS Opinion has been modified to clarify, consistent with the laboratory reports, that both the 2019 and 2020 groundwater samples were analyzed for total ammonia as nitrogen by the same analytical method.</p>
<p>Section 3.2.1: The last sentence of the first paragraph on text page 14 of the draft DPS report indicates that Con-Test Analytical Laboratory (Con-Test, of East Longmeadow MA) conducted soil testing for the 11 listed parameters. It is true that Vertex had Con-Test analyze soil samples for 10 of those parameters. However, Vertex submitted samples for the 11th listed parameter (asbestos) to CEI Labs, Inc. of Cary, North Carolina. The Town of Wayland requests that Vertex correct this slight error in their final DPS Opinion.</p>	<p>This has been updated in the final DPS Opinion Report.</p>

Comments Received on the Draft Downgradient Property Status Opinion Report

Public Comment	Response
<p>Section 5.1: Please remove the Wayland Transfer Station from Section 5.0 because, from the data that has been presented, there are no data to support its being upgradient of the site. The September 19, 2019 GeoHydroCycle, Inc. “Hydrogeologic Evaluation and Groundwater Mounding Analyses” submitted to Kevin Brander of the DEP, at page 4 (page count 110 of the DPS Report), states that based on groundwater elevation data, “groundwater flows in an easterly direction toward the Sudbury River and adjoining wetlands at a gradient of 0.00129 feet per foot (1.3 feet in 1,000 feet).” See Figure 6 “Groundwater Elevation Contours, 8/1/19” in that GeoHydroCycle, Inc. report at page count 123 of your DPS Report. None of the data collected since that time shows any appreciable difference from which to infer a different flow direction (see Figures 4A through 4C and Table 3).</p>	<p>Please see answer above.</p>
<p>Section 7.0: I) At page 33, under (c), please clarify what is meant by “the extent of non-retarded PFAS migration at relatively uniform concentrations would be expected to be much greater than the observed extent”. Because of the difficult syntax being used, the reader cannot understand the point that is trying to be conveyed. II) At page 33, under (e), rather than the cursory statement that “the groundwater in well V-201(MW) flows from the wetland”, please provide substantive numerical detail and dates of data acquisition to support the statement. III) At page 37, under (f), the report argues that there are no readily apparent effects to human health because of “the average depth to water across the Site (24 feet bgs)”. However, on page 26, the report states that “depth to water is approximately 15 to 30 feet bgs.” Isn’t it the 15 foot bgs that is the most relevant? Please clarify in the text.</p>	<p>I) This statement is meant to describe the rate of PFAS migration across the property. If the PFAS migrated at the same rate as the estimated advective groundwater flow rate (336 to 572 feet per year), it would be expected that the detected concentrations of PFAS would be uniform across the property. However, detections decreased across the property. PFAS is not amenable to natural degradation and PFAS releases from the landfill have likely been ongoing for many years, therefore the most likely explanation for the observed distribution is natural retardation of PFAS migration from organic carbon adsorption and dilution. Therefore, the rate of PFAS migration is lower than the estimated groundwater flow rate. II) According to the groundwater flow directions calculated from groundwater depth measurements collected on October 10 and 11, 2021, and February 7, 2022, the wetlands appear to influence groundwater conditions at the property. The groundwater elevations measured on February 7, 2022, best illustrate the groundwater flow from the wetland. The highest groundwater elevations on that date were clearly located in the northwestern portion of the Site. Given the measured groundwater elevations, VERTEX has not identified any reasonable groundwater flow direction scenario that would not show groundwater flow from the wetland onto the Site. Additionally, the highest concentration of PFAS in groundwater detected on the property was in the groundwater sample collected from V-201 (MW), the furthest north monitoring well, which is located approximately 60 feet due west and approximately 50 feet due south of the wetland. Given the measured groundwater elevations, there is no feasible groundwater flow direction to the location of well V-201(MW) that doesn’t emanate from the wetland. Based on the mapped groundwater flow and the absence of potential sources of PFAS near the well, it is likely that PFAS is present within the wetlands directly north of monitoring well V-201 (MW). III) This has been updated in the report.</p>
<p>Section 8.1: 8.1 at page 40, first bullet under (b), kindly remove the words “and potentially downgradient of the Sand Hill Landfill.” As stated previously, no data has been presented to support, or from which one could conclude, that the Sand Hill Landfill is upgradient or upstream of the site</p>	<p>Please see answer above.</p>
<p>Section 8.2: 8.2 at page 43, there is reference to the Sand Hill Landfill as a potential source of the constituents of concern at the site. The MCP requirement is that the DPS Opinion “shall include an explanation and documentation of the technical basis for the conclusions stated (emphasis supplied).” Please clearly support this statement with already collected data or remove it from your conclusion.</p>	<p>Please see answer above.</p>