

Hole 9 (continued)

- 12-24 in. bgs: light grey sandy gravel with fines, rounded, well-graded, dry, some cobble (9 inch)

Hole 10 • Location: on boundary line, 50 ft S/SE from Hole 9

• Total Depth: 21.5 inches  
(no obstructions)

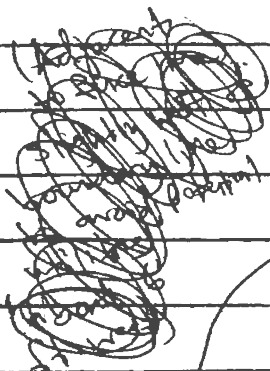
• Layers:

- surface: veg. top soil
- 0-3 in. bgs: roots, light grey sandy gravel with fines
- 3-11 in. bgs: light brown/grey 6-in. minus sandy quarry spall, angular
- 11-21.5 in. bgs: light grey sandy gravel with fines, rounded, dry, compacted, well-graded

Hole 11 | Location on boundary line, 50 ft S/SE from Hole 10

Total Depth = 23.5 inches (no obstructions)

- surface: <sup>grass</sup> veg ~~top~~ soil w/ cherts
- 0-3 in bgs: roots, light grey sandy gravel w/ fines
- 3"-23.5 in bgs: light brown grey, sandy gravel with fines rounded, dry, compacted, well-graded  
up to 5 inch cobbles hard excavating dense
- 3-7" med bgs: green to light brown, 2-inch minus sandy quarry spalls  
angular



Hole 12 Location on boundary w/ fence S/SE of Hole 11

Total Depth 19" (no obstructions)

Surface: grass, vegetation, ~~point~~ shells

0-2": roots, light grey sandy gravel w/ fines

2"-8": grey to light brown, sandy gravel (quarry spalls) <sup>3/4 inch minus</sup>, angular

8-19": light grey sandy gravel with fines

rounded, dry, compacted, wet glades

up to 5-inch cobbles, hard excavating, dense

about  
6 ft west  
of boundary  
line to  
avoid utilities.  
otherwise  
would be  
endpoint  
for parcel  
6/7 boundary  
segment

Hole 13 Location on boundary w/ fence S of Hole 12

Total Depth 18" (no obstructions)

Surface: grass, vegetation, shells

0-2": roots, light grey sandy gravel w/ fines

2"-5": grey to light brown, sandy gravel (quarry spalls) <sup>3/4 inch minus</sup>, angular, dry

5"-18": light grey, sandy gravel with fines

rounded, dry compacted wet glades

up to 5-inch cobbles, hard excavating, dense

# **Appendix F**

## **Well Decommissioning Field Sheets**

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

R065632

Consulting Firm \_\_\_\_\_

Unique Ecology Well IDTag No. ALA 237 (mw 9)

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

City Olympia County Thurston

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

EWM  or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee

Name (Print Last, First Name) Newman, Casey

Driller/Engineer/Trainee Signature Casey Newman

Driller or Trainee License No. 3157

Cased or Uncased Diameter 3" 1" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/14/2017

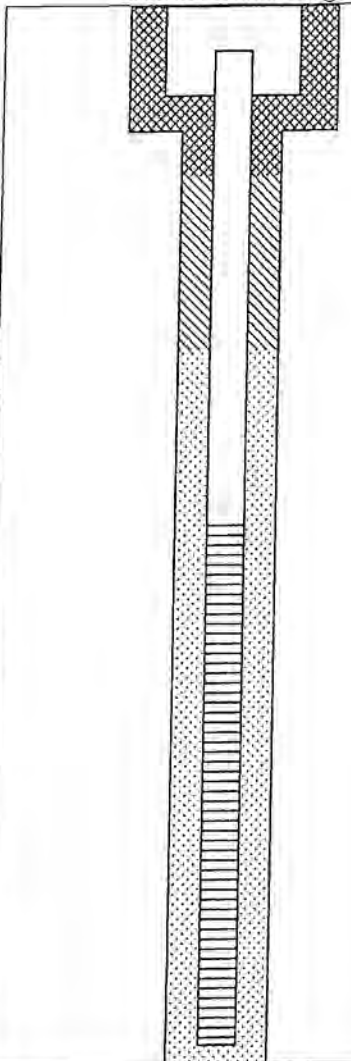
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description



MONUMENT TYPE:

flush

REMOVED MONUMENT: YES  NO

PVC BLANK: \_\_\_\_\_

SCREEN: \_\_\_\_\_

WELL DEPTH: 8'

FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES  NO

WELL WAS CHIPPED/GROUTED IN PLACE

ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP



Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

R065632

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

Consulting Firm \_\_\_\_\_

City Olympia County Thurston

Unique Ecology Well IDTag No. ALA 230 (MW 8)

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

EWM  or WWM

Lat/Long (s, t, r Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee

Name (Print Last, First Name) Newman, Casey

Driller/Engineer/Trainee Signature Casey Newman

Driller or Trainee License No. 3152

Cased or Uncased Diameter 3 1/2" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/14/2017

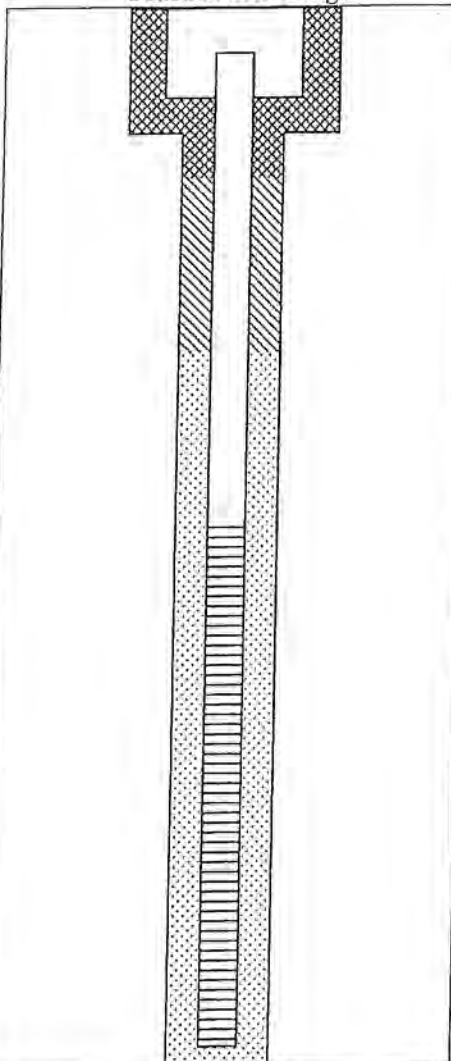
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description



MONUMENT TYPE:

flush

REMOVED MONUMENT: YES/NO

PVC BLANK: \_\_\_\_\_

SCREEN: \_\_\_\_\_

WELL DEPTH: 12'

FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES /  NO

WELL WAS CHIPPED/GROUTED IN PLACE

ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

RE63445

Consulting Firm \_\_\_\_\_

Unique Ecology Well IDTag No. BBR 331 (MW 25)

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

City Olympia County Thurston

Location NE1/4-1/4 NE1/4 Sec 47 TwN 18 R 02

EWM  or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee

Name (Print Last, First Name) Newman, Casey

Driller/Engineer/Trainee Signature Casey Newman

Driller or Trainee License No. 3152

Cased or Uncased Diameter 2" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/14/2017

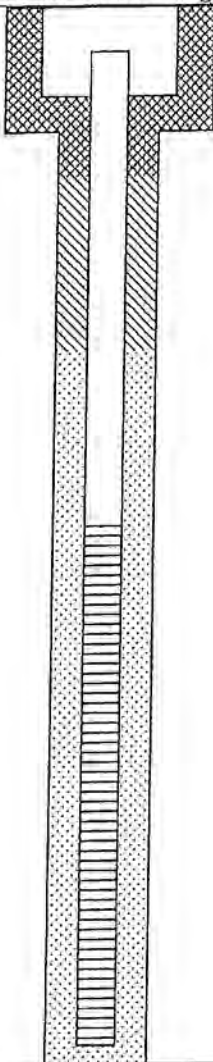
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description

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SCALE: 1"= \_\_\_\_\_ PAGE 3 OF 16

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

R 065632

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

Consulting Firm \_\_\_\_\_

City Olympia County Thurston

Unique Ecology Well IDTag No: ALA 231 (MW07)

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

EWM  or WWM

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee

Name (Print Last, First Name) Newman, Casey

Driller/Engineer/Trainee Signature Casey Newman

Driller or Trainee License No. 3152

Cased or Uncased Diameter 1" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/14/2017

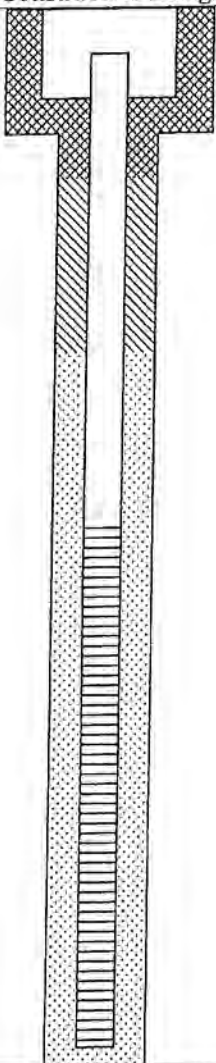
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description

	<p>MONUMENT TYPE: <u>flush</u></p> <p>REMOVED MONUMENT: YES <input checked="" type="checkbox"/> NO</p> <p>PVC BLANK: _____</p> <p>SCREEN: _____</p> <p>WELL DEPTH: <u>10.5'</u></p>	<p>FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED</p> <p>REMOVED MONUMENT: YES / <input checked="" type="checkbox"/> NO</p> <p><input checked="" type="checkbox"/> WELL WAS CHIPPED/GROUTED IN PLACE</p> <p><input type="checkbox"/> ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP</p>
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SCALE: 1"= \_\_\_\_\_ PAGE 4 OF 18

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number: R065228

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

Consulting Firm \_\_\_\_\_

City Olympia County Thurston

Unique Ecology Well IDTag No. AKA 409 (MW14)

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

EWM  or WWM

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee  
 Name (Print Last, First Name) Newman, Casey  
 Driller/Engineer /Trainee Signature Casey Newman  
 Driller or Trainee License No. 3152

Cased or Uncased Diameter 4" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/14/2017

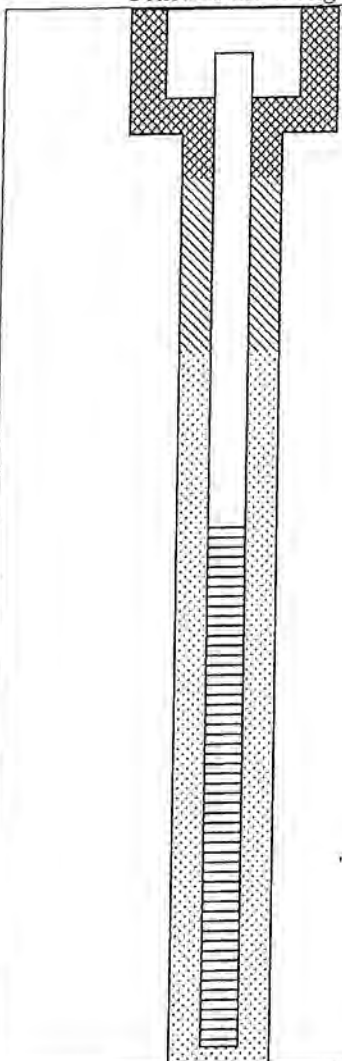
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description



MONUMENT TYPE:

flush

REMOVED MONUMENT: YES/NO

PVC BLANK: \_\_\_\_\_

SCREEN: \_\_\_\_\_

WELL DEPTH: 10'

FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES / NO

WELL WAS CHIPPED/GROUTED IN PLACE

ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

RE03445

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

Consulting Firm \_\_\_\_\_

City Olympia County Thurston

Unique Ecology Well IDTag No. BBK 332 (MW 225)

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

EWM  or WWM

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee

Name (Print Last, First Name) Newman, Casey

Driller/Engineer/Trainee Signature Casey Newman

Driller or Trainee License No. 3152

Cased or Uncased Diameter 2" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/14/2017

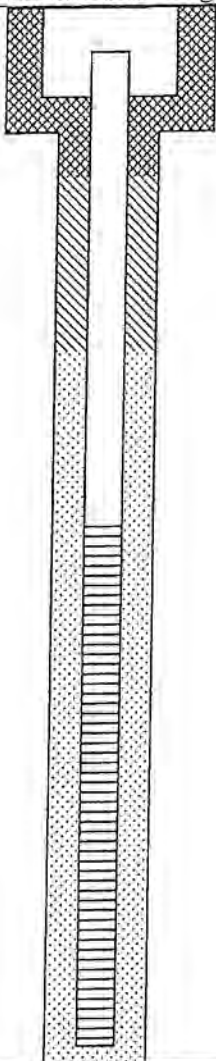
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description

	<p>MONUMENT TYPE: <u>flush</u></p> <p>REMOVED MONUMENT: YES <input checked="" type="checkbox"/> NO</p> <p>PVC BLANK: _____</p> <p>SCREEN: _____</p> <p>WELL DEPTH: <u>6'</u></p>	<p>FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED</p> <p>REMOVED MONUMENT: YES / <input checked="" type="checkbox"/> NO</p> <p><input checked="" type="checkbox"/> WELL WAS CHIPPED/GROUTED IN PLACE</p> <p><input type="checkbox"/> ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP</p>
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SCALE: 1"= \_\_\_\_\_ PAGE 6 OF 18



Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

R065632

Consulting Firm \_\_\_\_\_

Unique Ecology Well IDTag No. ALA 229 (MN6)

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

City Olympia County Thurston

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

EWM  or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee

Name (Print Last, First Name) Newman, Casey

Driller/Engineer/Trainee Signature Casey Newman

Driller or Trainee License No. 3152

Cased or Uncased Diameter 1" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/14/2017

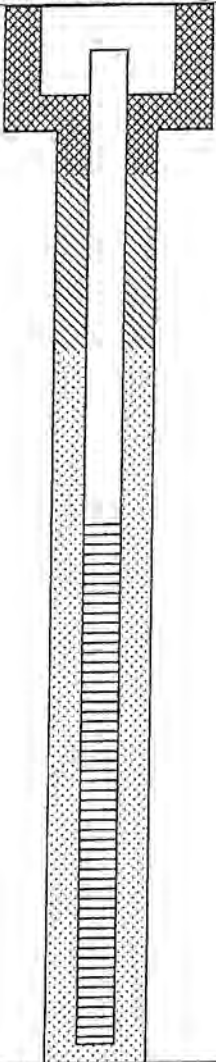
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description

	<p>MONUMENT TYPE: <u>flush</u></p> <p>REMOVED MONUMENT: YES <input checked="" type="checkbox"/> NO</p> <p>PVC BLANK: _____</p> <p>SCREEN: _____</p> <p>WELL DEPTH: <u>12'</u></p>	<p>FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED</p> <p>REMOVED MONUMENT: YES / <input checked="" type="checkbox"/> NO</p> <p><input checked="" type="checkbox"/> WELL WAS CHIPPED/GROUTED IN PLACE</p> <p><input type="checkbox"/> ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP</p>
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SCALE: 1"= \_\_\_\_\_ PAGE 7 OF 16

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

R065632

Consulting Firm \_\_\_\_\_

Unique Ecology Well IDTag No. ALA 227 (mw10)

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Driller  Engineer  Trainee  
 Name (Print Last, First Name) Newman, Casey  
 Driller/Engineer/Trainee Signature Casey Newman  
 Driller or Trainee License No. 3157

If trainee, licensed driller's Signature and License Number:

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

City Olympia County Thurston

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

EWM  or WWM

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_  
still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Cased or Uncased Diameter 8" 1" Static Level \_\_\_\_\_

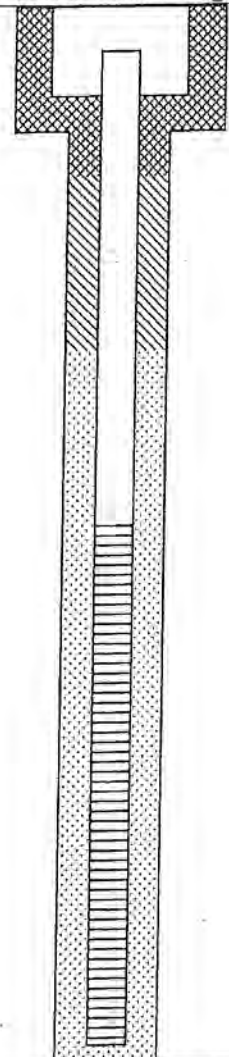
Work/Decommission Start Date 9/14/2017

Work/Decommission Completed Date 9/14/2017

### Construction Design

### Well Data

### Formation Description

	<p>MONUMENT TYPE: <u>flush</u></p> <p>REMOVED MONUMENT: YES/NO <input checked="" type="checkbox"/></p> <p>PVC BLANK: _____</p> <p>SCREEN: _____</p> <p>WELL DEPTH: <u>12'</u></p>	<p>FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED</p> <p>REMOVED MONUMENT: YES / NO <input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/> WELL WAS CHIPPED/GROUTED IN PLACE</p> <p><input type="checkbox"/> ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP</p>
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SCALE: 1"= \_\_\_\_\_ PAGE 8 OF 14

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

RD65228

Consulting Firm \_\_\_\_\_

Unique Ecology Well IDTag No. AKA 410 (MW12)

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

City Olympia County Thurston

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

EWM  or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee

Name (Print Last, First Name) Newman, Casey

Driller/Engineer/Trainee Signature Casey Newman

Driller or Trainee License No. 3152

Cased or Uncased Diameter 8" 1" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/14/2017

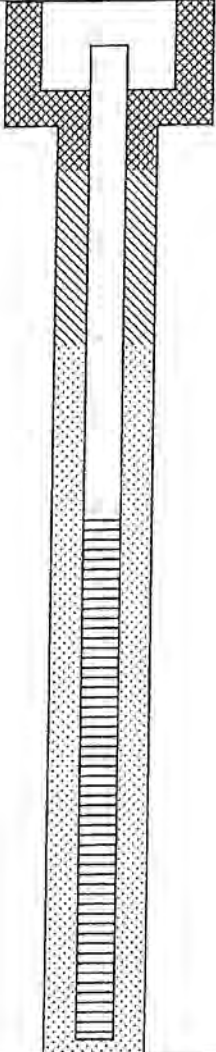
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description

	<p>MONUMENT TYPE: <u>Flush</u></p> <p>REMOVED MONUMENT: YES/NO <input checked="" type="checkbox"/></p> <p>PVC BLANK: _____</p> <p>SCREEN: _____</p> <p>WELL DEPTH: <u>12'</u></p>	<p>FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED</p> <p>REMOVED MONUMENT: YES / NO <input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/> WELL WAS CHIPPED/GROUTED IN PLACE</p> <p><input type="checkbox"/> ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP</p>
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SCALE: 1"= \_\_\_\_\_ PAGE 9 OF 18



Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

R065228

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

Consulting Firm \_\_\_\_\_

City Olympia County Thurston

Unique Ecology Well IDTag No. APF 827 (MW/1)

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

EWM  or WWM

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee

Name (Print Last, First Name) Newman, Casey

Driller/Engineer/Trainee Signature Casey Newman

Driller or Trainee License No. 3152

Cased or Uncased Diameter 3" 1" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/14/2017

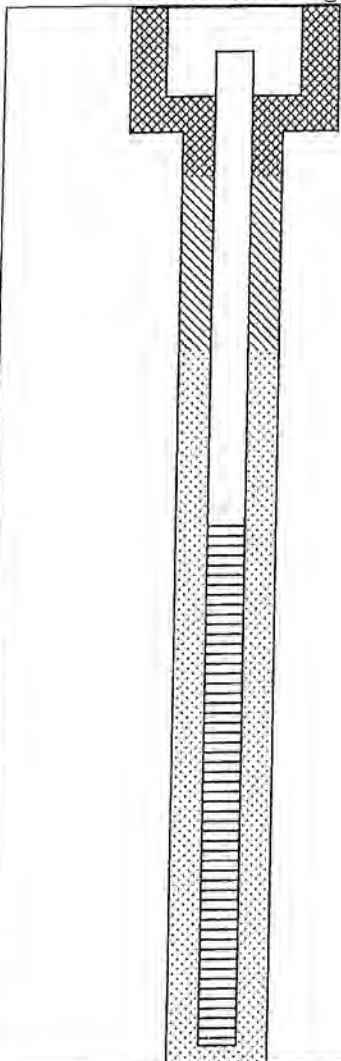
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description



MONUMENT TYPE:

flush

REMOVED MONUMENT: YES  NO

PVC BLANK: \_\_\_\_\_

SCREEN: \_\_\_\_\_

WELL DEPTH: 10'

FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES  NO

WELL WAS CHIPPED/GROUTED IN PLACE

ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

R065228

Consulting Firm \_\_\_\_\_

Unique Ecology Well IDTag No. ALN 983 (MW15)

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

City Olympia County Thurston

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

EWM  or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee

Name (Print Last, First Name) Newman, Casey

Driller/Engineer/Trainee Signature Casey Newman

Driller or Trainee License No. 3152

Cased or Uncased Diameter All 1" Static Level

Work/Decommission Start Date 9/14/2017

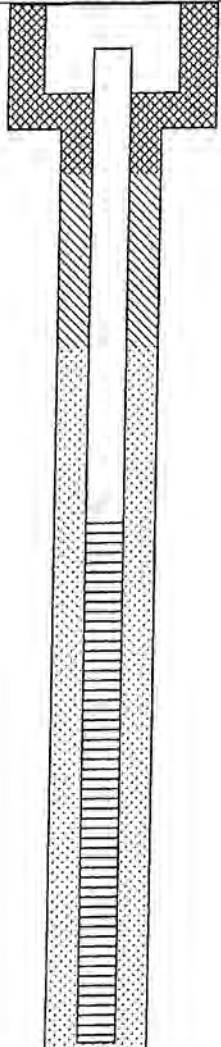
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description

	<p>MONUMENT TYPE: <u>flush</u></p> <p>REMOVED MONUMENT: YES <input checked="" type="checkbox"/> NO</p> <p>PVC BLANK: _____</p> <p>SCREEN: _____</p> <p>WELL DEPTH: <u>8'</u></p>	<p>FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED</p> <p>REMOVED MONUMENT: YES / <input checked="" type="checkbox"/> NO</p> <p><input checked="" type="checkbox"/> WELL WAS CHIPPED/GROUTED IN PLACE</p> <p><input type="checkbox"/> ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP</p>
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SCALE: 1"= \_\_\_\_\_ PAGE 14 OF 18

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

R065228

Consulting Firm \_\_\_\_\_

Unique Ecology Well IDTag No. ALN 982 (mw19)

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

City Olympia County Thurston

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

EWM  or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee

Name (Print Last, First Name) Newman, Casey

Driller/Engineer/Trainee Signature Casey Newman

Driller or Trainee License No. 3157

Cased or Uncased Diameter 3 1/2" Static Level

Work/Decommission Start Date 9/14/2017

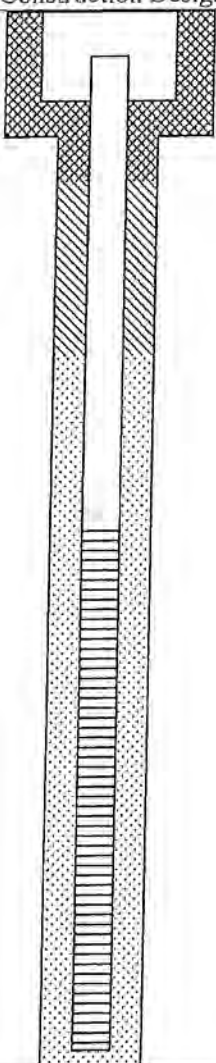
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description

	<p>MONUMENT TYPE: <u>flush</u></p> <p>REMOVED MONUMENT: YES/NO <input checked="" type="checkbox"/></p> <p>PVC BLANK: _____</p> <p>SCREEN: _____</p> <p>WELL DEPTH: <u>9'</u></p>	<p>FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED</p> <p>REMOVED MONUMENT: YES/NO <input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/> WELL WAS CHIPPED/GROUTED IN PLACE</p> <p><input type="checkbox"/> ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP</p>
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SCALE: 1"= \_\_\_\_\_ PAGE 12 OF 18

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

RE 03445

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

Consulting Firm \_\_\_\_\_

City Olympia County Thurston

Unique Ecology Well IDTag No. BAF 399 (mw25)

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

EWM  or WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_  
Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee  
Name (Print Last, First Name) Newman, Casey

Driller/Engineer /Trainee Signature Casey Newman

Driller or Trainee License No. 3152

Cased or Uncased Diameter 2" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/14/2017

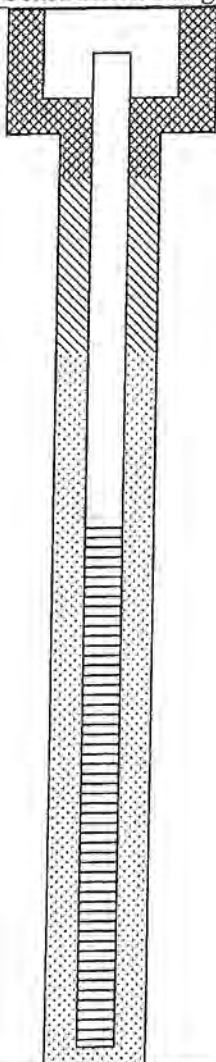
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description

	<p>MONUMENT TYPE: <u>flush</u></p> <p>REMOVED MONUMENT: YES <input checked="" type="checkbox"/> NO</p> <p>PVC BLANK: _____</p> <p>SCREEN: _____</p> <p>WELL DEPTH: <u>7'</u></p>	<p>FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED</p> <p>REMOVED MONUMENT: YES / <input checked="" type="checkbox"/> NO</p> <p><input checked="" type="checkbox"/> WELL WAS CHIPPED/GROUTED IN PLACE</p> <p><input type="checkbox"/> ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP</p>
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SCALE: 1"= \_\_\_\_\_ PAGE 18 OF 18

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

R 065228

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

Consulting Firm \_\_\_\_\_

City Olympia County Thurston

Unique Ecology Well ID Tag No. APF 848

(mw20)

Location NE 1/4-1/4 NE 1/4 Sec 47 Twn 18 R 02

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

EWM  or WWM

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee

Name (Print Last, First Name) Newman, Casey

Driller/Engineer /Trainee Signature Casey Newman

Driller or Trainee License No. 3152

Cased or Uncased Diameter 8" 1" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/14/2017

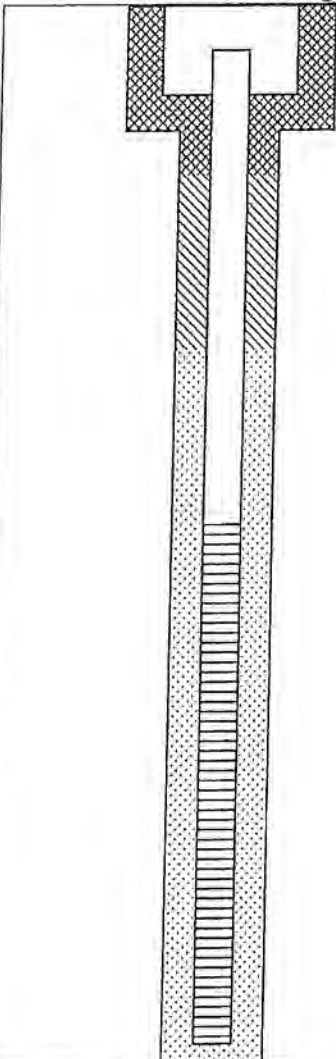
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description



MONUMENT TYPE:

flush

REMOVED MONUMENT: YES  NO

PVC BLANK: \_\_\_\_\_

SCREEN: \_\_\_\_\_

WELL DEPTH: 9'

FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES /  NO

WELL WAS CHIPPED/GROUTED IN PLACE

ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

SCALE: 1"= \_\_\_\_\_ PAGE 19 OF 19



Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

R065228

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

Consulting Firm \_\_\_\_\_

City Olympia County Thurston

Unique Ecology Well IDTag No. ALN 983 (mw13)

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

EWM  or WWM

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_  
still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee

Name (Print Last, First Name) Newman, Casey

Driller/Engineer /Trainee Signature Casey Newman

Driller or Trainee License No. 3152

Cased or Uncased Diameter 2 1/4" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/14/2017

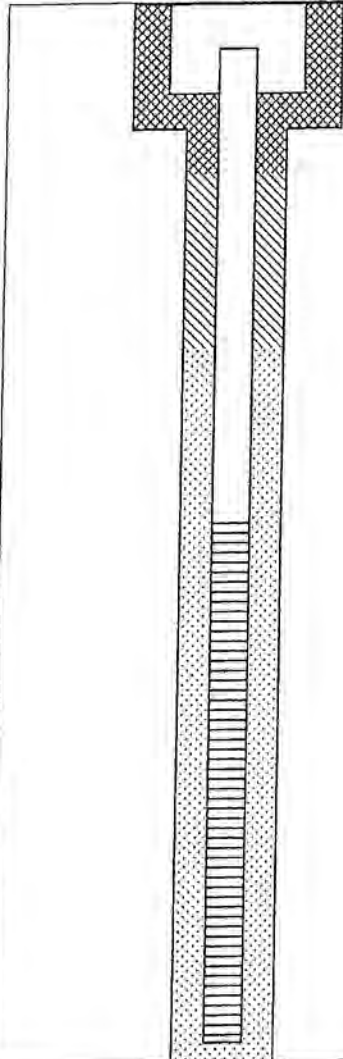
Work/Decommission Completed Date 9/14/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description



MONUMENT TYPE:

flush

REMOVED MONUMENT: YES/NO

PVC BLANK: \_\_\_\_\_

SCREEN: \_\_\_\_\_

WELL DEPTH: 8'

FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES /  NO

WELL WAS CHIPPED/GROUTED IN PLACE

ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

RE10418

Consulting Firm \_\_\_\_\_

Unique Ecology Well IDTag No. Bim 027 (rmw27)

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

City Olympia County Thurston

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

EWM  or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_  
still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee  
Name (Print Last, First Name) Newman, Casey

Driller/Engineer /Trainee Signature Casey Newman

Driller or Trainee License No. 3157

Cased or Uncased Diameter 2" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/19/2017

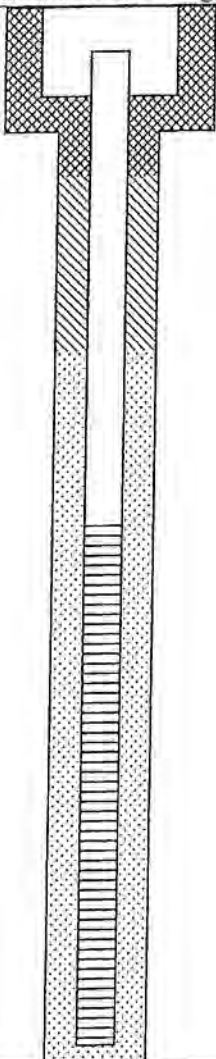
Work/Decommission Completed Date 9/19/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description

	<p>MONUMENT TYPE: <u>flush</u></p> <p>REMOVED MONUMENT: YES/NO <input checked="" type="checkbox"/></p> <p>PVC BLANK: _____</p> <p>SCREEN: _____</p> <p>WELL DEPTH: <u>16'</u></p>	<p>FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED</p> <p>REMOVED MONUMENT: YES / <input checked="" type="checkbox"/> NO</p> <p><input checked="" type="checkbox"/> WELL WAS CHIPPED/GROUTED IN PLACE</p> <p><input type="checkbox"/> ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP</p>
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SCALE: 1"= \_\_\_\_\_ PAGE 16 OF 18

Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

R065228

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

Consulting Firm \_\_\_\_\_

City Olympia County Thurston

Unique Ecology Well IDTag No. APF 850 (mw78)

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

EWM  or WWM

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_  
still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee  
Name (Print Last, First Name) Newman, Casey

Driller/Engineer/Trainee Signature Casey Newman

Driller or Trainee License No. 3157

Cased or Uncased Diameter 2" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/19/2017

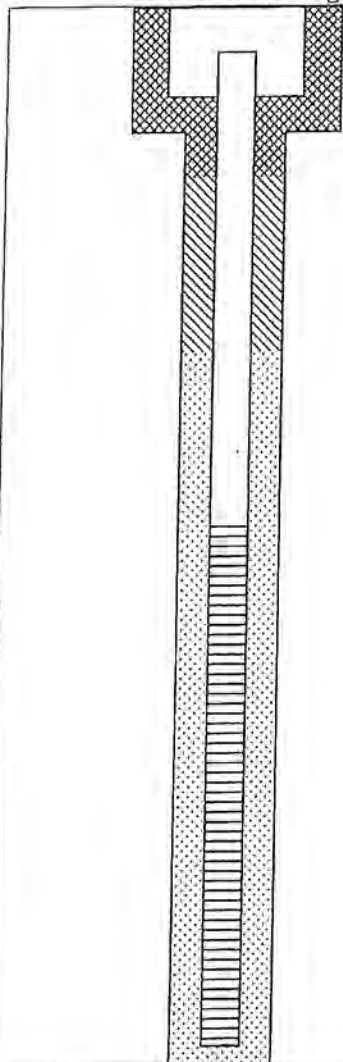
Work/Decommission Completed Date 9/19/2017

If trainee, licensed driller's Signature and License Number:

### Construction Design

### Well Data

### Formation Description



MONUMENT TYPE:

flush

REMOVED MONUMENT: YES/NO

PVC BLANK: \_\_\_\_\_

SCREEN: \_\_\_\_\_

WELL DEPTH: 12'

FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES /  NO

WELL WAS CHIPPED/GROUTED IN PLACE

ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP



Please print, sign and return to the Department of Ecology

# RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE45100

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- Construction
- Decommission

Type of Well ("x" in box)

- Resource Protection
- Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

RE10418

Property Owner Port of Olympia

Site Address Jefferson Street & Olympia Ave NE

Consulting Firm \_\_\_\_\_

City Olympia County Thurston

Unique Ecology Well IDTag No. BIM 028 (MW 26)

Location NE1/4-1/4 NE1/4 Sec 47 Twn 18 R 02

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

EWM  or WWM

Lat/Long (s, t, r) Lat Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

still REQUIRED) Long Deg \_\_\_\_\_ Min \_\_\_\_\_ Sec \_\_\_\_\_

Tax Parcel No. 66130000402

Driller  Engineer  Trainee

Name (Print Last, First Name) Newman, Casey

Driller/Engineer /Trainee Signature Casey Newman

Driller or Trainee License No. 3152

Cased or Uncased Diameter 2" Static Level \_\_\_\_\_

Work/Decommission Start Date 9/19/2017

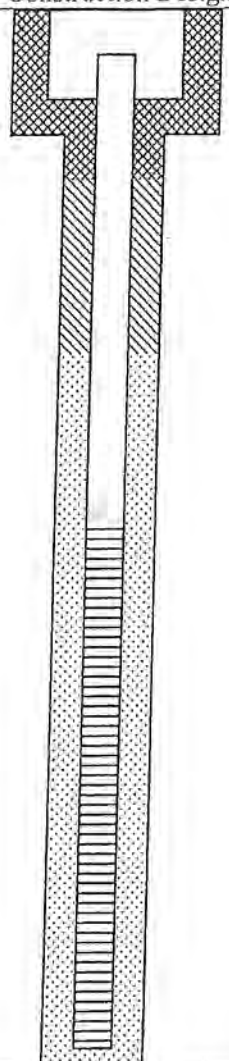
If trainee, licensed driller's Signature and License Number:

Work/Decommission Completed Date 9/19/2017

### Construction Design

### Well Data

### Formation Description

	<p>MONUMENT TYPE: <u>flush</u></p> <p>REMOVED MONUMENT: YES/NO <input checked="" type="checkbox"/></p> <p>PVC BLANK: _____</p> <p>SCREEN: _____</p> <p>WELL DEPTH: <u>16'</u></p>	<p>FORMATION NOT OBSERVED - WELL WAS DECOMMISSIONED</p> <p>REMOVED MONUMENT: YES / NO <input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/> WELL WAS CHIPPED/GROUTED IN PLACE</p> <p><input type="checkbox"/> ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP</p>
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SCALE: 1"= \_\_\_\_\_ PAGE 18 OF 18

# **Appendix G**

## **Dust Monitoring Memo**

# Memo



5205 Corporate Ctr. Ct. SE, Ste. A  
Olympia, WA 98503-5901  
Phone: 360.570.1700  
Fax: 360.570.1777  
www.uspioneer.com

**To:** Steve Teel, LHG (Washington State Department of Ecology)  
**From:** Heather McPherson, EIT  
**Cc:** Chris Waldron, PE (PIONEER Technologies Corporation)  
Levi Fernandes, PE (PIONEER Technologies Corporation)  
Tyson Carpenter, PE (Port of Olympia)  
Rachael Jamison (Port of Olympia)  
**Date:** October 18, 2017  
**Subject:** Dust Monitoring Results at the Port of Olympia East Bay Redevelopment Site  
Agreed Order DE14072, Ecology Facility/Site No. 5785176, Cleanup Site ID No. 407

---

PIONEER Technologies Corporation (PIONEER) conducted dust level monitoring in Parcels 2 and 3 of the East Bay Redevelopment Site (site) between September 13, 2017 and October 4, 2017 to ensure that dust levels were below the Washington State permissible exposure limit for the respirable fraction of nuisance dust ( $5 \text{ mg/m}^3$ ) during construction activities. The dust monitoring event was conducted in accordance with the Engineering Design Report (EDR) for the site.<sup>1</sup> However, because dioxins and furans were detected in one on-site excavation, a more protective airborne dust action level of 1 milligram per cubic meter ( $1 \text{ mg/m}^3$ ) was used to evaluate dust levels instead of the  $5 \text{ mg/m}^3$  specified in the EDR. The purpose of this memo is to document the results of the dust monitoring event and describe the procedures used to collect the data.

## Dust Monitoring Results

Forty-one averaged dust monitoring measurements were collected over 12 work days at the site, which included the days with intrusive soil work and the highest potential to generate dust. All 8-hour time-weighted average dust particulate concentrations collected during work days were below  $1 \text{ mg/m}^3$  (see Table 1).<sup>2,3</sup> The best management practices (BMPs) employed by the construction contractor (e.g., covering stockpiles, wetting soil with a water truck during soil work, general good housekeeping practices) have shown to be effective in managing dust levels. Consequently, dust monitoring will be discontinued at the site unless there is a change in conditions or a change in BMPs or construction methods that would increase the potential for dust generation.

## Dust Monitoring Procedures

Dust monitoring was performed during soil excavation activities, during the first week of gravel cover installation, and on days when the potential for dust generation was high due to other soil-disturbing activities (e.g., grading, trench filling) and dry soil conditions. Three passive *personal/DataRAM*<sup>TM</sup> (model pDR-1000AN) air sampling units (dust monitoring units) were used to log concentrations of airborne particulates every minute. These manufacturer-calibrated units were

---

<sup>1</sup> PIONEER 2017. Engineering Design Report for Cleanup Implementation, East Bay Redevelopment Site, June.

<sup>2</sup> Not every 8-hour time-weighted average concentration was representative of an entire 8-hour duration. Dust monitors were turned off during heavy precipitation (which typically decreases dust generation and transport) or if dust generating activities were not being conducted. In these cases, the time-weighted average concentration is overestimated.

<sup>3</sup> Only one time-weighted average was above the  $1 \text{ mg/m}^3$  action level. The measurement was collected on 9/21/17 at a concentration of  $1.290 \text{ mg/m}^3$  during a 14-minute monitoring session, which was cut short and not representative of a full work day at the site. See Table 1 for further details.

zeroed daily and then placed on the fence that borders the site and/or on a construction crew member. Border fence units were positioned to be between the site activity and the nearby Hands On Children's Museum and East Bay water body receptors, and/or positioned at the closest site boundary to dust-generating activity. The dust monitoring units were programmed to produce an audible alarm if the measured particulate concentration exceeded  $1 \text{ mg/m}^3$ . At the end of the work day, dust monitoring units were switched off and collected, and the logged data were downloaded.

## Enclosures

Table 1: Dust Monitoring Tracking Table

**Table 1: Dust Monitoring Tracking Table**

Output (Date_Unit_StartTime)	Date	Start Time (may be estimated)	End Time (may be estimated)	Monitor Location	Primary Activities During Run	8-Hour Time-Weighted Avg. Concentration <sup>1</sup> (mg/m <sup>3</sup> )	Additional Notes
<b>Unit 1</b>							
091317_Unit01_0730	9/13/2017	7:30:00 AM	2:30:00 PM	On crew member	Digging/grading to ~1 foot below current ground level, mainly perimeter near Olympia Ave. and 1982 fill boundary	0.083	
091417_Unit01_0727	9/14/2017	7:27:00 AM	3:10:00 PM	On crew member (Riley)	Digging/grading to ~1 foot below current ground level, mainly perimeter near State Ave and Jefferson St (combination of hand tools and excavator). Extending eastern construction entrance (placing liner and rocks).	0.171	
091517_Unit01_0750	9/15/2017	7:43:00 AM	7:56:00 AM	Northern fence line across eastern side of Marine Dr. / Olympia Ave. intersection (across from pedestrian sign)	Crew continuing to place quarry spall rock to extend construction entrance from Chestnut St. to 1982 fill boundary; moving/grading soil just west of 1982 fill boundary line; dump truck rock deliveries	0.015	Battery too low to log data, run stopped / battery replaced before beginning new run
091517_Unit01_0850	9/15/2017	8:55:00 AM	2:20:00 PM	Northern fence line across eastern side of Marine Dr. / Olympia Ave. intersection (across from pedestrian sign)	Crew continuing to place quarry spall rock to extend construction entrance from Chestnut St. to 1982 fill boundary; moving/grading soil just west of 1982 fill boundary line; dump truck rock deliveries	0.012	2nd run for Unit 1 on 9/15/17 (after battery replacement)
091917_Unit01_1101	9/19/2017	11:01:00 AM	12:45:00 PM	On northern fence line across Olympia Ave. from the Children's Museum (directly across from "bike lane" sign); north of asphalt and grading activities	Removing/piling asphalt pads, some grading on western edge of Parcel 3, vegetation cutting/removal, creating more ditches/channels to help direct water to primary infiltration trench (to drain wetland-like area)	0.000	Rain heavy at times; removed dust monitors from fences

**Table 1: Dust Monitoring Tracking Table**

Output (Date_Unit_StartTime)	Date	Start Time (may be estimated)	End Time (may be estimated)	Monitor Location	Primary Activities During Run	8-Hour Time-Weighted Avg. Concentration <sup>1</sup> (mg/m <sup>3</sup> )	Additional Notes
092117_Unit01_0753	9/21/2017	7:53:00 AM	8:07:00 AM	On crew member (Tyler)	Filling in trenches with quarry spall / rock, rock delivered in piles, shallow square excavations dug for lining and storing contaminated soil.	1.290	Crew member alerted Heather that unit had turned off / accidentally ended run (continued with a new run for remainder of work day). This concentration data is not reflective of a full work shift (only reflects about 15 minutes of activity). See monitoring output 092117_Unit01_0830 for more representative results.
092117_Unit01_0830	9/21/2017	8:30:00 AM	2:50:00 PM	On crew member (Tyler)	Filling in trenches with quarry spall / rock, rock delivered in piles, shallow square excavations dug for lining and storing contaminated soil.	0.214	Second run of the day (9/21/17) for Unit #1
092217_Unit01_0852	9/22/2017	8:52:00 AM	4:30:00 PM	On north fence line approximately 60 yards from northwest property corner	Excavation of MW24 (began at 2:30pm) to the depth of 9 ft bgs and stockpiling of removed soil.	0.004	
092517_Unit01_0824	9/25/2017	8:24:00 AM	3:00:00 PM	North of MW24S excavation (on Northern fence line)	Preparing area and laying soil cover/grading in southwest corner of site; quarry rock deliveries; extending MW24S excavation and retrieving sidewall/bottom soil samples	0.004	
092617_Unit01_0752	9/26/2017	7:52:00 AM	3:04:00 PM	On south fence line across from west portion of Stave Ave and Cherry St intersection	Laying soil cover rock, leveling, placing quarry spall-like rock in engineered drainage trenches	0.019	
092917_Unit01_0733	9/29/2017	7:33:00 AM	8:47:00 AM	On crew member (Riley) during catch basin/piping soil work	Catch basin/piping work in SE part of site; rock pile deliveries from trucks; smaller rock being laid around utilities at SW corner of site.	0.158	Run 1 of 2 for the day; monitor taken down temporarily due to rain.
092917_Unit01_1024	9/29/2017	10:24:00 AM	12:15:00 PM	On north fence line, about 20 ft west of 1982 fill boundary line	Crew excavating/jack hammering preexisting concrete foundation in catch basin/piping vicinity; piling concrete rubble; hosing with water truck to prevent dust generation.	0.000	Run 2 of 2 for the day; monitor taken down early due to more rain.
100217_Unit01_0739	10/2/2017	7:39:00 AM	2:43:00 PM	On northern fence line across Olympia Ave. from the Children's Museum (directly across from "bike lane" sign)	Catch basin/piping work in S/SE portion of site; spreading of gravel for cover in SW portion of site	0.004	Morning fog
100317_Unit01_0749	10/3/2017	7:49:00 AM	2:57:00 PM	On north fence line, just east of Marine Dr. & Olympia Ave. intersection, ~55 ft west of 1982 fill boundary line	Rock deliveries; more soil work for catch basins/piping in SE part of site; more moving/spreading of gravel onto the geotextile liner in the W/SW part of site	0.088	Morning fog; concentrations approximately 0.5 mg/m <sup>3</sup> (instantaneous) and 0.375 mg/m <sup>3</sup> (time-weighted avg.) at dust monitor startup in the fog

**Table 1: Dust Monitoring Tracking Table**

Output (Date_Unit_StartTime)	Date	Start Time (may be estimated)	End Time (may be estimated)	Monitor Location	Primary Activities During Run	8-Hour Time-Weighted Avg. Concentration <sup>1</sup> (mg/m <sup>3</sup> )	Additional Notes
100417_Unit01_0832	10/4/2017	8:32:00 AM	4:15:00 PM	On north fence line, just east of Marine Dr. & Olympia Ave. intersection, ~55 ft west of 1982 fill boundary line	Connecting SE catch basins/piping to the street storm drain system; continuing to lay/spread gravel for the cover in the west and central portions of the site; soil sampling from the targeted excavation stockpiles	0.005	Construction crew soil work ended around 3:30 pm. Dust monitors were collected at 4:15 pm due to soil sampling schedule. Therefore, last ~45 minutes of sampling logs are not reflective of soil-related activities at the site.
<b>Unit 2</b>							
091317_Unit02_0800	9/13/2017	8:00:00 AM	2:40:00 PM	On northern fence line across Olympia Ave. from the Children's Museum (directly across from "bike lane" sign)	Digging/grading to ~1 foot below current grade, mainly perimeter near Olympia Ave. and 1982 fill boundary	0.040	
091417_Unit02_0800	9/14/2017	7:54:00 AM	3:20:00 PM	Northern fence line, across intersection of Olympia Ave. and Marine Dr. (across from intersection street signs)	Digging/grading to ~1 foot below current ground level, mainly perimeter near State Ave and Jefferson St (combination of hand tools and excavator). Extending eastern construction entrance (placing liner and rocks).	0.005	
091517_Unit02_0753	9/15/2017	7:53:00 AM	9:30:00 AM	On southern fence line, across State Ave. from Spoon Auto Part's garage door	Crew continuing to place quarry spall rock to extend construction entrance from Chestnut St. to 1982 fill boundary; moving/grading soil just west of 1982 fill boundary line; dump truck rock deliveries	0.011	First run of 9/15/17 before battery replacement
091517_Unit02_0940	9/15/2017	9:38:00 AM	2:20:00 PM	On southern fence line, across State Ave. from Spoon Auto Part's garage door	Crew continuing to place quarry spall rock to extend construction entrance from Chestnut St. to 1982 fill boundary; moving/grading soil just west of 1982 fill boundary line; dump truck rock deliveries	0.002	Second run of 9/15/17 after battery replacement
091917_Unit02_1112	9/19/2017	11:12:00 AM	12:45:00 PM	West fence line (near dozer action), across Jefferson St. from southeast corner of gray auction/warehouse building	Removing/piling asphalt pads, some grading on western edge of Parcel 3, vegetation cutting/removal, creating more ditches/channels to help direct water to primary infiltration trench (to drain wetland-like area)	0.000	Rain heavy at times; removed dust monitors from fences
092217_Unit02_0855	9/22/2017	8:55:00 AM	4:30:00 PM	On north fence line approximately 30 yards from northwest property corner	Excavation of MW24 (began at 2:30pm) to the depth of 9 ft bgs and stockpiling of removed soil.	0.000	
092517_Unit02_0834	9/25/2017	8:34:00 AM	3:00:00 PM	West of DP04 excavation (on western fence line)	Preparing area and laying soil cover/grading in southwest corner of site; quarry rock deliveries; extending MW24S excavation and retrieving sidewall/bottom soil samples	0.003	

**Table 1: Dust Monitoring Tracking Table**

Output (Date_Unit_StartTime)	Date	Start Time (may be estimated)	End Time (may be estimated)	Monitor Location	Primary Activities During Run	8-Hour Time-Weighted Avg. Concentration <sup>1</sup> (mg/m <sup>3</sup> )	Additional Notes
092617_Unit02_0743	9/26/2017	7:43:00 AM	2:55:00 PM	On north fence line across street from Children's Museum, about 25 ft east of the "bike lane" sign across street	Laying soil cover rock, leveling, placing quarry spall-like rock in engineered drainage trenches	0.004	
092917_Unit02_0739	9/29/2017	7:39:00 AM	8:55:00 AM	On north fence line across from Olympia Ave. and Marine Dr. intersection crosswalk.	Catch basin/piping work in SE part of site; rock pile deliveries from trucks; smaller rock being laid around utilities at SW corner of site.	0.000	Run 1 of 2 for the day; monitor taken down temporarily due to rain.
092917_Unit02_1021	9/29/2017	10:21:00 AM	12:15:00 PM	On north fence line across from Olympia Ave. and Marine Dr. intersection crosswalk.	Crew excavating/jack hammering preexisting concrete foundation in catch basin/piping vicinity; piling concrete rubble; hosing with water truck to prevent dust generation.	0.000	Run 2 of 2 for the day; monitor taken down early due to more rain.
100217_Unit02_0734	10/2/2017	7:34:00 AM	2:40:00 PM	On north fence line, across Olympia Ave. from eastern part of Olympia Ave. & Marine Dr. intersection	Catch basin/piping work in S/SE portion of site; spreading of gravel for cover in SW portion of site	0.003	Morning fog
100317_Unit02_0756	10/3/2017	7:56:00 AM	2:58:00 PM	On northern fence line across Olympia Ave. from the Children's Museum (directly across from "bike lane" sign)	Rock deliveries; more soil work for catch basins/piping in SE part of site; more moving/spreading of gravel onto the geotextile liner in the W/SW part of site	0.072	Morning fog; concentrations approximately 0.3-0.4 mg/m <sup>3</sup> at dust monitor startup in the fog
100417_Unit02_0837	10/4/2017	8:37:00 AM	4:15:00 PM	On northern fence line across Olympia Ave. from the Children's Museum (directly across from "bike lane" sign)	Connecting SE catch basins/piping to the street storm drain system; continuing to lay/spread gravel for the cover in the west and central portions of the site; soil sampling from the targeted excavation stockpiles	0.005	Construction crew soil work ended around 3:30 pm. Dust monitors were collected at 4:15 pm due to soil sampling schedule. Therefore, last ~45 minutes of sampling logs are not reflective of soil-related activities at the site.
<b>Unit 3</b>							
091417_Unit03_0810	9/14/2017	8:10:00 AM	3:20:00 PM	Southern fence line, across State Ave. from Olympia Fireplace and Spa (northeast corner of building) - this is close to the proposed soil work of the day	Digging/grading to ~1 foot below current ground level, mainly perimeter near State Ave and Jefferson St (combination of hand tools and excavator). Extending eastern construction entrance (placing liner and rocks).	0.023	
091517_Unit03_0725	9/15/2017	7:24:00 AM	7:48:00 AM	On crew member	Crew continuing to place quarry spall rock to extend construction entrance from Chestnut St. to 1982 fill boundary; moving/grading soil just west of 1982 fill boundary line; dump truck rock deliveries	0.774	First run of 9/15/17 before battery replacement



**Table 1: Dust Monitoring Tracking Table**

Output (Date_Unit_StartTime)	Date	Start Time (may be estimated)	End Time (may be estimated)	Monitor Location	Primary Activities During Run	8-Hour Time-Weighted Avg. Concentration <sup>1</sup> (mg/m <sup>3</sup> )	Additional Notes
091517_Unit03_0920	9/15/2017	9:20:00 AM	2:20:00 PM	On crew member	Crew continuing to place quarry spall rock to extend construction entrance from Chestnut St. to 1982 fill boundary; moving/grading soil just west of 1982 fill boundary line; dump truck rock deliveries	0.148	Second run of 9/15/17 after battery replacement
091917_Unit03_1108	9/19/2017	11:08:00 AM	2:38:00 PM	On dozer operator (open cab with roof)	Removing/piling asphalt pads, some grading on western edge of Parcel 3, vegetation cutting/removal, creating more ditches/channels to help direct water to primary infiltration trench (to drain wetland-like area)	0.027	
092117_Unit03_0807	9/21/2017	8:07:00 AM	2:45:00 PM	North fence line, across Olympia Ave. from the intersection street signs for Olympia Ave./Marine Dr. intersection.	Filling in trenches with quarry spall / rock, rock delivered in piles, shallow square excavations dug for lining and storing contaminated soil.	0.013	
092217_Unit03_0855	9/22/2017	8:55:00 AM	4:30:00 PM	On crew member (Tyler)	Excavation of DP06, DP04, and MW24 (9:00am to 4:30pm) to the depth of 9 ft bgs and stockpiling of removed soil.	0.087	
092517_Unit03_0826	9/25/2017	8:26:00 AM	3:00:00 PM	North of DP06 excavation (on northern fence line)	Preparing area and laying soil cover/grading in southwest corner of site; quarry rock deliveries; extending MW24S excavation and retrieving sidewall/bottom soil samples	0.016	
092617_Unit03_0737	9/26/2017	7:37:00 AM	2:51:00 PM	On north fence line across from Budd Inlet, approximately 20 ft west of the 1982 fill boundary line	Laying soil cover rock, leveling, placing quarry spall-like rock in engineered drainage trenches	0.005	
092917_Unit03_0746	9/29/2017	7:46:00 AM	8:55:00 AM	On south fence line, across State Ave. from northeast corner of Olympia Fireplace and Spa building	Catch basin/piping work in SE part of site; rock pile deliveries from trucks; smaller rock being laid around utilities at SW corner of site.	0.016	Run 1 of 2 for the day; monitor taken down temporarily due to rain.
092917_Unit03_1017	9/29/2017	10:17:00 AM	2:40:00 PM	On south fence line, adjacent to fence dust liner for concrete excavating and jack hammering activity, across State Ave. from Spoon Auto Parts (east of Cherry St.)	Crew excavating/jack hammering preexisting concrete foundation in catch basin/piping vicinity; piling concrete rubble; hosing with water truck to prevent dust generation.	0.011	Run 2 of 2 for the day.
100217_Unit03_0756	10/2/2017	7:56:00 AM	2:53:00 PM	On southern fence line, across State Ave. from northwest section of State Ave. & Cherry St. intersection	Catch basin/piping work in S/SE portion of site; spreading of gravel for cover in SW portion of site	0.017	Morning fog

**Table 1: Dust Monitoring Tracking Table**

Output (Date_Unit_StartTime)	Date	Start Time (may be estimated)	End Time (may be estimated)	Monitor Location	Primary Activities During Run	8-Hour Time-Weighted Avg. Concentration <sup>1</sup> (mg/m <sup>3</sup> )	Additional Notes
100317_Unit03_0806	10/3/2017	8:06:00 AM	3:02:00 PM	On south fence line, across from western side of State Ave. & Cherry St. intersection, between catch basin soil work and gravel pile movement	Rock deliveries; more soil work for catch basins/piping in SE part of site; more moving/spreading of gravel onto the geotextile liner in the W/SW part of site	0.071	Morning fog
100417_Unit03_0845	10/4/2017	8:45:00 AM	4:15:00 PM	On southern fence line, across State Ave. from Spoon Auto Part's garage door	Connecting SE catch basins/piping to the street storm drain system; continuing to lay/spread gravel for the cover in the west and central portions of the site; soil sampling from the targeted excavation stockpiles	0.007	Construction crew soil work ended around 3:30 pm. Dust monitors were collected at 4:15 pm due to soil sampling schedule. Therefore, last ~45 minutes of sampling logs are not reflective of soil-related activities at the site.

**Notes:**

1. Not every 8-hour time-weighted average concentration was representative of an entire 8-hour duration. Dust monitors were turned off during heavy precipitation (which typically decreases dust generation and transport) or if dust generating activities were not being conducted. In these cases, the time-weighted average concentration is overestimated.

# **Appendix H**

## **Contaminated Soil Excavation and Confirmation Sampling Memo**

# Memo



5205 Corporate Ctr. Ct. SE, Ste. A  
Olympia, WA 98503-5901  
Phone: 360.570.1700  
Fax: 360.570.1777  
www.uspioneer.com

**To:** Steve Teel, LHG (Ecology)  
**From:** Chris Waldron, PE  
**Cc:** Tyson Carpenter, PE and Rachael Jamison  
**Date:** October 5, 2017  
**Subject:** East Bay Redevelopment Site - Surgical Excavation Update - Round 01 Excavations and Confirmation Soil Sampling Results  
Agreed Order DE14072, Ecology Facility/Site No. 5785176, Cleanup Site ID No. 407

On September 22 and 25, initial (i.e., Round 01) excavations were completed at three locations exceeding remediation levels (RLs) (i.e., DP06/SVP-2SO, DP04, and MW24S) per the Ecology-approved Engineering Design Report (EDR) (PIONEER 2017). In general, the soil excavations were completed over an area approximately 10 feet by 10 feet, centered on the location of the RL exceedance. DP06/SVP-2SO, DP04, and MW24S were excavated to depths of 4.5, 7, and 9 feet below ground surface (bgs), respectively, with specified overburden and contaminated soil segregated and stockpiled separately. Groundwater dewatering and temporary storage in an above-ground tank was performed to facilitate collection of confirmation soil samples within the specified soil profile and depth. Confirmation sidewall and bottom samples were collected in accordance with the EDR except when subsurface features were encountered as follows (see Table below for laboratory analytical results):

- DP06/SVP-2SO – All soil samples were collected in accordance with the EDR (see Photo 1). Soil samples were submitted to Friedman & Bruya, Inc. for Total Petroleum Hydrocarbon Gasoline Fraction (TPH-G) analysis and total naphthalene analysis. TPH-G and total naphthalenes were not detected in the four sidewall confirmation soil samples (< 5.0 and < 0.01 milligrams per kilogram (mg/kg), respectively) and the reporting limits were less than the remediation levels (RLs). The RLs for TPH-G and total naphthalenes are 100 mg/kg and 5 mg/kg, respectively. Note: Collection of a bottom soil sample was not required per the EDR. Since there were no exceedances of the RLs in the confirmation soil samples, no further excavation/action is required for this location. The excavation will be backfilled with clean fill to the original ground surface elevation, a geotextile/membrane will be installed, and this area will be covered with at least 12 inches of cover material in accordance with the EDR. All stockpiled material will be addressed in accordance with the EDR.

## Confirmation Soil Sample Results for Excavation: DP06/SVP-2SO

Sample	Location	Depth (ft bgs)	TPH-G (mg/kg)	Total Naphthalenes (mg/kg)
SO-DPO6SW-01-092217-3.75	Sidewall	3.75	<5	<0.01
SO-DPO6SW-02-092217-3.75	Sidewall	3.75	<5	<0.01
SO-DPO6SW-03-092217-3.75	Sidewall	3.75	<5	<0.01

SO-DPO6SW-04-092217-3.75	Sidewall	3.75	<5	<0.01
Not Collected <sup>(1)</sup>	Bottom	4.5	n/a/	n/a

<sup>(1)</sup>Per the EDR, a bottom sample was not collected from the DP06/SVP-2SO excavation because the initial excavation depth was at the point of compliance (POC) depth of 4.5 feet bgs.

The RL for TPH-G is 100 mg/kg and the RL for Total Naphthalenes is 5 mg/kg.

- DP04 – All soil samples, with the exception of the east sidewall sample, were collected in accordance with the EDR. A step-down concrete footer was observed in the east side of the excavation between 2 and 6 feet below ground surface (bgs) (see Photo 2). As a result, the confirmation soil sample on the east wall of the excavation was collected from 6 to 7 feet bgs (as opposed to the specified 4 to 6 feet zone). Soil samples were submitted to Friedman & Bruya, Inc. for arsenic analysis. Arsenic was detected in the four sidewall and bottom confirmation soil samples at a maximum concentration of 10.8 mg/kg, below the RL of 20 mg/kg. Arsenic was not detected above the method reporting limit in the equipment blank water sample. Since there were no exceedances of the RL in the confirmation soil samples, no further excavation/action is required for this location. The excavation will be backfilled with clean fill to the original ground surface elevation, a geotextile/membrane will be installed, and this area will be covered with at least 12 inches of cover material in accordance with the EDR. All stockpiled material will be addressed in accordance with the EDR.

#### Confirmation Soil Sample Results for Excavation: DP04

Sample	Location	Depth (ft bgs)	Arsenic (mg/kg)
SO-DP04SW-01-092217-4-6	Sidewall	4 to 6	4.28
SO-DP04SW-02-092217-6-7	Sidewall	6 to 7	2.4
SO-DP04SW-03-092217-4-6	Sidewall	4 to 6	10.8
SO-DP04SW-04-092217-4-6	Sidewall	4 to 6	5.31
SO-DP04BO-01-092217-7	Bottom	7	3.57
SO-DP04BO-01-092217-7-(01) - Field Duplicate	Bottom	7	5.10

The RL for arsenic is 20 mg/kg.

- MW24S – All soil samples, with the exception of the northern sidewall sample, were collected in accordance with the EDR. A concrete structure was encountered at approximately 3 feet bgs bisecting the excavation in a northwest-southeast orientation (see Photo 3). The concrete structure encompassed the northeastern half of the excavation and included a solid floor at 8.5 feet bgs. Given the bisection, the northern sidewall confirmation soil sample was collected 3 feet west of centerline. Soil samples were submitted to Frontier Analytical Laboratory for dioxins/furans analysis. Total 2,3,7,8 tetrachlorodibenzo-p-dioxin toxic equivalents (2,3,7,9-TCDD

TEQs) were detected at concentrations between 63 and 564 nanogram per kilogram(ng/kg), below the RL of 590 ng/kg. Dioxins/furans were not detected above the method reporting limit in the equipment blank water sample. Since there were no exceedances of the RL in the confirmation soil samples, no further excavation/action is required for this location. The excavation will be backfilled with clean fill to the original ground surface elevation, a geotextile/membrane will be installed, and this area will be covered with at least 12 inches of cover material in accordance with the EDR. All stockpiled material will be addressed in accordance with the EDR.

**Confirmation Soil Sample Results for Excavation: MW24S**

Sample	Location	Depth (ft bgs)	Total 2,3,7,8-TCDD TEQs <sup>(1)</sup> (ng/kg)
SO-MW24SSW-01-092517-6.5-8	Sidewall	6.5 to 8	561
SO-MW24SSW-02-092517-6.5-8	Sidewall	6.5 to 8	224
SO-MW24SSW-03-092517-6.5-8	Sidewall	6.5 to 8	564
SO-MW24SSW-04-092517-6.5-8	Sidewall	6.5 to 8	487
SO-MW24SBO-01-092517-9	Bottom	9	63

<sup>(1)</sup> Total 2,3,7,8-TCDD TEQs concentrations were calculated using toxicity equivalency factors (TEFs) for 2,3,7,8-tetrachlorodibenzo-p-dioxin in accordance with Washington Administrative Code (WAC) 173-340-708(d)(d).

The RL for Total 2,3,7,8-TCDD TEQs is 590 ng/kg.

**Attachments**

Friedman & Bruya, Inc. Analytical Laboratory Report, dated October 3, 2017 (arsenic, TPH-G, and total naphthalenes)

Frontier Analytical Laboratory Report, dated October 2, 2017 (total dioxins/furans).

**Reference**

PIONEER 2017. Engineering Design Report for Cleanup Implementation. East Bay Redevelopment Site. Olympia, Washington. Agreed Order No. DE14072. Facility/Site No. 5785176 . PIONEER Technologies Corporation. June 2017.





**Photo 1: Surgical Excavation DP06/SVP-2SO – Round 01 Excavation (looking to the south)**

*Note: Not to scale. All sample locations are approximated.*

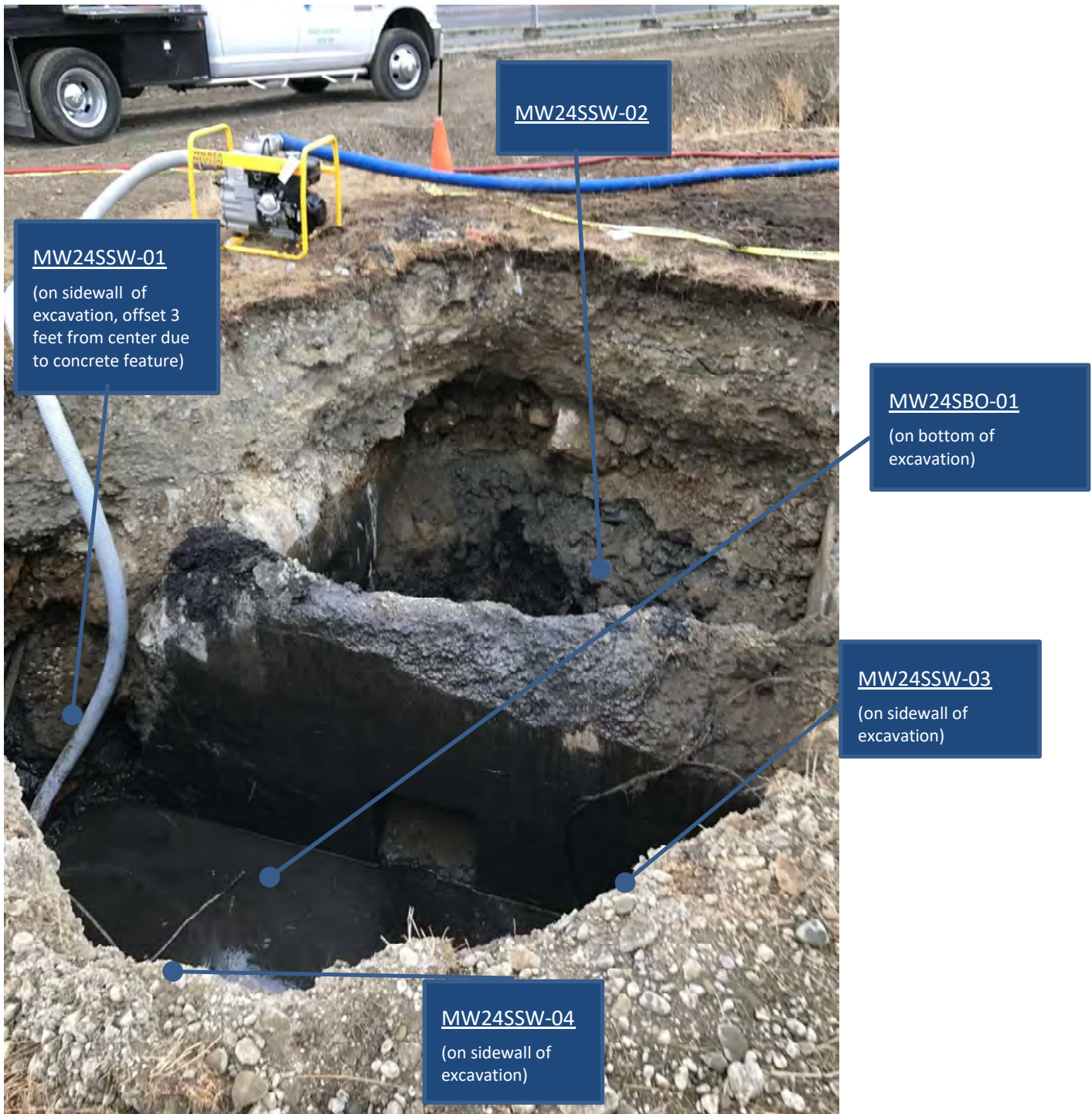




**Photo 2: Surgical Excavation DP04 – Round 01 Excavation (looking to the east)**

*Note: Not to scale. All sample locations are approximated.*





**Photo 3: Surgical Excavation MW24S – Round 01 Excavation (looking to the northeast)**

*Note: Not to scale. All sample locations are approximated.*

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Arina Podnozova, B.S.  
Eric Young, B.S.

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October 3, 2017

Levi Fernandes, Project Manager  
Pioneer  
5205 Corporate Ctr. Ct. SE, Ste. A  
Olympia, WA 98503

Dear Mr. Fernandes:

Included are the results from the testing of material submitted on September 23, 2017 from the Port of Olympia East Bay, F&BI 709400 project. There are 21 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
c: fernandesl@uspioneer.com  
NAA1003R.DOC

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 23, 2017 by Friedman & Bruya, Inc. from the Pioneer Port of Olympia East Bay, F&BI 709400 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Pioneer</u>
709400 -01	SO-DP04SW-01-092217-4-6
709400 -02	SO-DP04SW-02-092217-6-7
709400 -03	SO-DP04SW-03-092217-4-6
709400 -04	SO-DP04SW-04-092217-4-6
709400 -05	SO-DP04BO-01-092217-7
709400 -06	SO-DP04BO-01-092217-7-(01)
709400 -07	EB-DP04WSW-02-092217
709400 -08	SO-DP06SW-01-092217-3.75
709400 -09	SO-DP06SW-02-092217-3.75
709400 -10	SO-DP06SW-03-092217-3.75
709400 -11	SO-DP06SW-04-092217-3.75

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Date of Report: 10/03/17  
Date Received: 09/23/17  
Project: Port of Olympia East Bay, F&BI 709400  
Date Extracted: 09/26/17  
Date Analyzed: 09/26/17

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
SO-DP06SW-01-092217-3.75 709400-08	<5	98
SO-DP06SW-02-092217-3.75 709400-09	<5	123
SO-DP06SW-03-092217-3.75 709400-10	<5	116
SO-DP06SW-04-092217-3.75 709400-11	<5	104
Method Blank 07-2057 MB	<5	113



FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SW-01-092217-4-6	Client:	Pioneer
Date Received:	09/23/17	Project:	Port of Olympia East Bay
Date Extracted:	09/26/17	Lab ID:	709400-01
Date Analyzed:	09/29/17	Data File:	709400-01.161
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	4.28
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SW-02-092217-6-7	Client:	Pioneer
Date Received:	09/23/17	Project:	Port of Olympia East Bay
Date Extracted:	09/26/17	Lab ID:	709400-02
Date Analyzed:	09/29/17	Data File:	709400-02.162
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.40
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SW-03-092217-4-6	Client:	Pioneer
Date Received:	09/23/17	Project:	Port of Olympia East Bay
Date Extracted:	09/26/17	Lab ID:	709400-03
Date Analyzed:	09/29/17	Data File:	709400-03.163
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	10.8
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SW-04-092217-4-6	Client:	Pioneer
Date Received:	09/23/17	Project:	Port of Olympia East Bay
Date Extracted:	09/26/17	Lab ID:	709400-04
Date Analyzed:	09/29/17	Data File:	709400-04.164
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	5.31
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04BO-01-092217-7	Client:	Pioneer
Date Received:	09/23/17	Project:	Port of Olympia East Bay
Date Extracted:	09/26/17	Lab ID:	709400-05
Date Analyzed:	09/29/17	Data File:	709400-05.165
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	3.57
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04BO-01-092217-7-(01)	Client:	Pioneer
Date Received:	09/23/17	Project:	Port of Olympia East Bay
Date Extracted:	09/26/17	Lab ID:	709400-06
Date Analyzed:	09/29/17	Data File:	709400-06.166
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	5.10
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Pioneer
Date Received:	NA	Project:	Port of Olympia East Bay
Date Extracted:	09/26/17	Lab ID:	I7-519 mb2
Date Analyzed:	09/29/17	Data File:	I7-519 mb2.160
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	<1
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	EB-DP04WSW-02-092217	Client:	Pioneer
Date Received:	09/23/17	Project:	Port of Olympia East Bay
Date Extracted:	09/28/17	Lab ID:	709400-07
Date Analyzed:	09/28/17	Data File:	709400-07.147
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Arsenic	<1
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Pioneer
Date Received:	NA	Project:	Port of Olympia East Bay
Date Extracted:	09/28/17	Lab ID:	I7-524 mb
Date Analyzed:	10/02/17	Data File:	I7-524 mb.081
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Arsenic	<1
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# FRIEDMAN & BRUYA, INC.

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## ENVIRONMENTAL CHEMISTS

### Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SO-DP06SW-01-092217-3.75	Client:	Pioneer
Date Received:	09/23/17	Project:	Port of Olympia East Bay
Date Extracted:	09/25/17	Lab ID:	709400-08 1/5
Date Analyzed:	09/26/17	Data File:	092606.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	94	31	163
Benzo(a)anthracene-d12	114	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SO-DP06SW-02-092217-3.75	Client:	Pioneer
Date Received:	09/23/17	Project:	Port of Olympia East Bay
Date Extracted:	09/25/17	Lab ID:	709400-09 1/5
Date Analyzed:	09/26/17	Data File:	092610.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	105	31	163
Benzo(a)anthracene-d12	120	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SO-DP06SW-03-092217-3.75	Client:	Pioneer
Date Received:	09/23/17	Project:	Port of Olympia East Bay
Date Extracted:	09/25/17	Lab ID:	709400-10 1/5
Date Analyzed:	09/26/17	Data File:	092607.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	100	31	163
Benzo(a)anthracene-d12	122	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SO-DP06SW-04-092217-3.75	Client:	Pioneer
Date Received:	09/23/17	Project:	Port of Olympia East Bay
Date Extracted:	09/25/17	Lab ID:	709400-11 1/5
Date Analyzed:	09/26/17	Data File:	092611.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	104	31	163
Benzo(a)anthracene-d12	122	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Pioneer
Date Received:	Not Applicable	Project:	Port of Olympia East Bay
Date Extracted:	09/25/17	Lab ID:	07-2109 mb 1/5
Date Analyzed:	09/25/17	Data File:	092513.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	100	31	163
Benzo(a)anthracene-d12	116	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Date of Report: 10/03/17

Date Received: 09/23/17

Project: Port of Olympia East Bay, F&BI 709400

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TPH AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Laboratory Code: 709419-08 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	100	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/03/17

Date Received: 09/23/17

Project: Port of Olympia East Bay, F&BI 709400

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL METALS USING EPA METHOD 6020A**

Laboratory Code: 709379-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	1.67	100	99	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	100	80-120

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Date of Report: 10/03/17

Date Received: 09/23/17

Project: Port of Olympia East Bay, F&BI 709400

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL METALS USING EPA METHOD 6020A**

Laboratory Code: 709334-20 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<10	78	78	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	101	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/03/17

Date Received: 09/23/17

Project: Port of Olympia East Bay, F&BI 709400

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL  
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: 709365-02 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	82	44-129
2-Methylnaphthalene	mg/kg (ppm)	0.17	<0.01	85	45-135
1-Methylnaphthalene	mg/kg (ppm)	0.17	<0.01	83	40-141

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	89	90	58-121	1
2-Methylnaphthalene	mg/kg (ppm)	0.17	95	95	58-123	0
1-Methylnaphthalene	mg/kg (ppm)	0.17	94	93	60-124	1

**Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

7094010

SAMPLE CHAIN OF CUSTODY

ME 09/23/12

BR 2/05/1

Report To Levi Fernandez

Company PIONEER

Address 6205 Corporate Ctr, Ct. SE, Ste. A

City, State, ZIP Olympia, WA 98503

Phone 360-520-1700 Email fernandezl@uspioneer.com

SAMPLERS <i>(signature)</i>	PROJECT NAME <u>Part of Olympia East Bay</u>	PO #
REMARKS	INVOICE TO	

Page # 1 of 2

TURNAROUND TIME  
 Standard Turnaround  
 RUSH 5-day  
 Rush charges authorized by: \_\_\_\_\_

SAMPLE DISPOSAL  
 Dispose after 30 days  
 Archive Samples  
 Other \_\_\_\_\_

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED						Notes		
						TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D		PAHs 8270D SIM	Arsenic
50-DR0450-01-092217-4-6	01	9/22/12	13:00	Soil	1								X	
50-DR0450-02-092217-6-7	03		13:40		1									
50-DR0450-03-092217-4-b	03		12:45		1									
50-DR0450-04-092217-4-b	04		13:20		1									
50-DR0450-01-092217-7	05		13:55		1									
50-DR0450-01-092217-7-10	06		13:55		1									
50-DR0450-02-092217-7	07		13:50	Water	1									

Relinquished by: <i>(signature)</i>	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <i>(signature)</i>		Levi Fernandez	PIONEER	9/23/12	1335
Received by: <i>(signature)</i>		David Down	ESB	9/24/12	1335
Received by: _____					

Samples received at 4 °C

Friedman & Bruja, Inc.  
 3012 16th Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282

709400

SAMPLE CHAIN OF CUSTODY

ME 09/23/17

USI/BJJ  
Page # 2 of 2 BT

Report To Levi Fernandes

Company PIONEER

Address 5205 Corporate Ct. Ct. SE, Ste 114

City, State, ZIP Olympia, WA 98553

Phone 360-570-1700 Email fernandesl@pioneer.com

SAMPLERS (signature)

PROJECT NAME  
Port of Olympia East Bay

PO #

REMARKS

INVOICE TO

TURNAROUND TIME  
 Standard Turnaround  
 RUSH 5-day  
Rush charges authorized by:

SAMPLE DISPOSAL  
 Dispose after 30 days  
 Archive Samples  
 Other

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes	
						TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	Total Hydrocarbons 8270D				
20-090630-01-092217-375	08 A.E	9/22/17	9:30	S <sub>11</sub>	5			X									
20-090630-02-092217-375	09 1		9:45		5												
20-090630-03-092217-375	10 1		9:50		5												
20-090630-04-092217-375	11 1		10:00		5												

Friedman & Bruya, Inc.

3012 16<sup>th</sup> Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

SIGNATURE

PRINT NAME

COMPANY

DATE TIME

Relinquished by:

Received by:

Relinquished by:

Received by:

Levi Fernandes

Eric Youn

PIONEER

PAF

9/22/17 9:13:35

9/22/17 13:35

Samples received at 4 °C





October 2, 2017

**FAL Project: 10950**

Mr. Levi Fernandes  
Pioneer Technologies Corporation  
52505 Corporate Center Court SE, Suite A  
Olympia, WA 98503

Dear Mr. Fernandes,

The following results are associated with Frontier Analytical Laboratory project **10950**. This corresponds to your project number: **001009.000101.00102.0102**. One aqueous sample and five soil samples were received on 9/27/2017 in good condition. These samples were extracted and analyzed by EPA Method 8290 for tetra through octa chlorinated dibenzo dioxins and furans. The Toxic Equivalency (TEQ) for these samples has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs). The TEQ value is located in the upper right hand portion of each sample data sheet. A rush turnaround time of five business days was provided for project **10950**.

The following level I/II report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The attached results and electronic data deliverables (EDDs) are specifically for the samples referenced in this report only. These results meet all NELAP requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP Certificate number is **4041**. Frontier Analytical Laboratory's State of Washington Department of Ecology Certificate number is **C844**. This report and the associated EDD have been emailed to you. A hardcopy of this report will also be mailed to you as per you chain of custody request.

If you have any questions regarding project **10950**, please contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

A handwritten signature in black ink, appearing to read "Bradley B. Silverbush".

Bradley B. Silverbush  
Director of Operations

## Frontier Analytical Laboratory

### Sample Tracking Log

FAL Project ID: 10950

Received on: 09/27/2017

Project Due: 10/04/2017 Storage: R3

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
10950-001-SA 1		Port of Olympia - East Bay	SO-MW24SSW-01-092517-6.5-8	EPA 8290 D/F	Soil	09/25/2017	02:20 pm	10/25/2017
10950-002-SA 1		Port of Olympia - East Bay	SO-MW24SSW-02-092517-6.5-8	EPA 8290 D/F	Soil	09/25/2017	01:55 pm	10/25/2017
10950-003-SA 1		Port of Olympia - East Bay	SO-MW24SSW-03-092517-6.5-8	EPA 8290 D/F	Soil	09/25/2017	02:05 pm	10/25/2017
10950-004-SA 1		Port of Olympia - East Bay	SO-MW24SSW-04-092517-6.5-8	EPA 8290 D/F	Soil	09/25/2017	02:30 pm	10/25/2017
10950-005-SA 0		Port of Olympia - East Bay	EB-MW24SSW-04-092517	EPA 8290 D/F	Aqueous	09/25/2017	02:40 pm	10/25/2017
10950-006-SA 1		Port of Olympia - East Bay	SO-MW24SBO-01-092517-9	EPA 8290 D/F	Soil	09/25/2017	02:50 pm	10/25/2017

FAL  
Sample ID      Notes

10950-001-SA 'Use sample ID from bottle label per Levi to Kathy.'  
 10950-002-SA 'Sample ID provided by Levi to Kathy.'  
 10950-003-SA 'Sample ID provided by Levi to Kathy.'  
 10950-004-SA 'Use sample ID from bottle label per Levi to Kathy.'  
 10950-005-SA 'Sample ID provided by Levi to Kathy.'  
 10950-006-SA 'Sample ID provided by Levi to Kathy.'

EPA Method 8290  
PCDD/F



FAL ID: 10950-001-MB  
Client ID: Method Blank  
Matrix: Aqueous  
Batch No: X4254

Date Extracted: 09-28-2017  
Date Received: NA  
Amount: 1,000 L

ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/L

Acquired: 09-29-2017  
2005 WHO TEQ: 0.0

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.490		-	0.178				
1,2,3,7,8-PeCDD	ND	0.781		-	0.289				
1,2,3,4,7,8-HxCDD	ND	1.13		-	0.311				
1,2,3,6,7,8-HxCDD	ND	1.32		-	0.370	Total TCDD	ND	0.490	
1,2,3,7,8,9-HxCDD	ND	1.13		-	0.324	Total PeCDD	ND	0.781	
1,2,3,4,6,7,8-HpCDD	ND	1.32		-	0.393	Total HxCDD	ND	1.32	
OCDD	ND	2.60		-	1.10	Total HpCDD	ND	1.32	
2,3,7,8-TCDF	ND	0.468		-	0.174				
1,2,3,7,8-PeCDF	ND	0.715		-	0.300				
2,3,4,7,8-PeCDF	ND	0.715		-	0.311				
1,2,3,4,7,8-HxCDF	ND	0.730		-	0.290				
1,2,3,6,7,8-HxCDF	ND	0.684		-	0.264				
2,3,4,6,7,8-HxCDF	ND	0.755		-	0.318				
1,2,3,7,8,9-HxCDF	ND	0.782		-	0.359	Total TCDF	ND	0.468	
1,2,3,4,6,7,8-HpCDF	ND	1.08		-	0.346	Total PeCDF	ND	0.715	
1,2,3,4,7,8,9-HpCDF	ND	1.21		-	0.484	Total HxCDF	ND	0.782	
OCDF	ND	1.73		-	0.858	Total HpCDF	ND	1.21	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	96.2	40.0 - 135	
13C-1,2,3,7,8-PeCDD	106	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	94.2	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	87.6	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	102	40.0 - 135	
13C-OCDD	106	40.0 - 135	
13C-2,3,7,8-TCDF	99.7	40.0 - 135	
13C-1,2,3,7,8-PeCDF	105	40.0 - 135	
13C-2,3,4,7,8-PeCDF	110	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	98.2	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	90.6	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	102	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	112	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	101	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	120	40.0 - 135	
13C-OCDF	116	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	113	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst: 

Date: 10/2/2017

Reviewed By: 

Date: 10/2/2017

EPA Method 8290  
PCDD/F



FAL ID: 10950-001-OPR  
Client ID: OPR  
Matrix: Aqueous  
Batch No: X4254


Date Extracted: 09-28-2017  
Date Received: NA  
Amount: 1,000 L


ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: ng/ml

Acquired: 09-29-2017  
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	11.2	7.00 - 13.0	
1,2,3,7,8-PeCDD	55.9	35.0 - 65.0	
1,2,3,4,7,8-HxCDD	58.5	35.0 - 65.0	
1,2,3,6,7,8-HxCDD	57.2	35.0 - 65.0	
1,2,3,7,8,9-HxCDD	57.5	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDD	54.9	35.0 - 65.0	
OCDD	110	70.0 - 130	
2,3,7,8-TCDF	10.4	7.00 - 13.0	
1,2,3,7,8-PeCDF	52.4	35.0 - 65.0	
2,3,4,7,8-PeCDF	54.0	35.0 - 65.0	
1,2,3,4,7,8-HxCDF	53.6	35.0 - 65.0	
1,2,3,6,7,8-HxCDF	54.9	35.0 - 65.0	
2,3,4,6,7,8-HxCDF	54.7	35.0 - 65.0	
1,2,3,7,8,9-HxCDF	54.0	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	54.1	35.0 - 65.0	
1,2,3,4,7,8,9-HpCDF	53.3	35.0 - 65.0	
OCDF	109	70.0 - 130	
Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	88.6	40.0 - 135	
13C-1,2,3,7,8-PeCDD	91.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	77.1	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	71.0	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	86.1	40.0 - 135	
13C-OCDD	83.3	40.0 - 135	
13C-2,3,7,8-TCDF	91.2	40.0 - 135	
13C-1,2,3,7,8-PeCDF	90.1	40.0 - 135	
13C-2,3,4,7,8-PeCDF	95.9	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	83.2	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	76.1	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	84.6	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	95.9	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	88.7	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	105	40.0 - 135	
13C-OCDF	95.5	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	110	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 10/2/2017

Reviewed By:   
Date: 10/2/2017

EPA Method 8290  
PCDD/F



FAL ID: 10950-005-SA  
Client ID: EB-MW24SSWV-04-092517  
Matrix: Aqueous  
Batch No: X4254

Date Extracted: 09-28-2017  
Date Received: 09-27-2017  
Amount: 1,031 L


ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/L


Acquired: 09-29-2017  
2005 WHO TEQ: 0.0

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.784		-	0.178				
1,2,3,7,8-PeCDD	ND	1.12		-	0.289				
1,2,3,4,7,8-HxCDD	ND	1.64		-	0.311				
1,2,3,6,7,8-HxCDD	ND	1.61		-	0.370	Total TCDD	ND	0.784	
1,2,3,7,8,9-HxCDD	ND	1.50		-	0.324	Total PeCDD	ND	1.12	
1,2,3,4,6,7,8-HpCDD	ND	1.89		-	0.393	Total HxCDD	ND	1.64	
OCDD	ND	3.72		-	1.10	Total HpCDD	ND	1.89	
2,3,7,8-TCDF	ND	0.550		-	0.174				
1,2,3,7,8-PeCDF	ND	0.933		-	0.300				
2,3,4,7,8-PeCDF	ND	0.962		-	0.311				
1,2,3,4,7,8-HxCDF	ND	0.826		-	0.290				
1,2,3,6,7,8-HxCDF	ND	0.881		-	0.264				
2,3,4,6,7,8-HxCDF	ND	0.854		-	0.318				
1,2,3,7,8,9-HxCDF	ND	1.12		-	0.359	Total TCDF	ND	0.550	
1,2,3,4,6,7,8-HpCDF	ND	1.08		-	0.346	Total PeCDF	ND	0.962	
1,2,3,4,7,8,9-HpCDF	ND	1.43		-	0.484	Total HxCDF	ND	1.12	
OCDF	ND	2.93		-	0.858	Total HpCDF	ND	1.43	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	69.6	40.0 - 135	
13C-1,2,3,7,8-PeCDD	71.5	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	61.3	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	58.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	65.2	40.0 - 135	
13C-OCDD	61.6	40.0 - 135	
13C-2,3,7,8-TCDF	73.4	40.0 - 135	
13C-1,2,3,7,8-PeCDF	69.1	40.0 - 135	
13C-2,3,4,7,8-PeCDF	73.5	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	66.6	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	61.0	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	67.2	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	73.3	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	65.4	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	74.5	40.0 - 135	
13C-OCDF	69.3	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	90.3	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 10/2/2017

Reviewed By:   
Date: 10/2/2017

EPA Method 8290  
PCDD/F



FAL ID: 10950-001-MB  
Client ID: Method Blank  
Matrix: Soil  
Batch No: X4253

Date Extracted: 09-27-2017  
Date Received: NA  
Amount: 5.00 g


ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/g


Acquired: 09-29-2017  
2005 WHO TEQ: 0.0  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.0899		-	0.0273				
1,2,3,7,8-PeCDD	ND	0.128		-	0.0570				
1,2,3,4,7,8-HxCDD	ND	0.159		-	0.0793				
1,2,3,6,7,8-HxCDD	ND	0.175		-	0.0940	Total TCDD	ND	0.0899	
1,2,3,7,8,9-HxCDD	ND	0.154		-	0.0823	Total PeCDD	ND	0.128	
1,2,3,4,6,7,8-HpCDD	ND	0.229		-	0.0842	Total HxCDD	ND	0.175	
OCDD	ND	0.684		-	0.172	Total HpCDD	ND	0.229	
2,3,7,8-TCDF	ND	0.0609		-	0.0269				
1,2,3,7,8-PeCDF	ND	0.0987		-	0.0449				
2,3,4,7,8-PeCDF	ND	0.103		-	0.0468				
1,2,3,4,7,8-HxCDF	ND	0.118		-	0.0437				
1,2,3,6,7,8-HxCDF	ND	0.110		-	0.0417				
2,3,4,6,7,8-HxCDF	ND	0.128		-	0.0574				
1,2,3,7,8,9-HxCDF	ND	0.147		-	0.0657	Total TCDF	ND	0.0609	
1,2,3,4,6,7,8-HpCDF	ND	0.131		-	0.0747	Total PeCDF	ND	0.103	
1,2,3,4,7,8,9-HpCDF	ND	0.152		-	0.0883	Total HxCDF	ND	0.147	
OCDF	ND	0.295		-	0.170	Total HpCDF	ND	0.152	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	101	40.0 - 135	
13C-1,2,3,7,8-PeCDD	111	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	104	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	96.9	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	111	40.0 - 135	
13C-OCDD	104	40.0 - 135	
13C-2,3,7,8-TCDF	105	40.0 - 135	
13C-1,2,3,7,8-PeCDF	109	40.0 - 135	
13C-2,3,4,7,8-PeCDF	113	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	107	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	97.0	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	106	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	118	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	112	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	129	40.0 - 135	
13C-OCDF	118	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	112	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 10/2/2017

Reviewed By:   
Date: 10/2/2017

EPA Method 8290  
PCDD/F



FAL ID: 10950-001-OPR  
Client ID: OPR  
Matrix: Soil  
Batch No: X4253


Date Extracted: 09-27-2017  
Date Received: NA  
Amount: 5.00 g


ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: ng/ml

Acquired: 09-29-2017  
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	11.0	7.00 - 13.0	
1,2,3,7,8-PeCDD	55.7	35.0 - 65.0	
1,2,3,4,7,8-HxCDD	55.9	35.0 - 65.0	
1,2,3,6,7,8-HxCDD	55.2	35.0 - 65.0	
1,2,3,7,8,9-HxCDD	55.5	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDD	54.7	35.0 - 65.0	
OCDD	109	70.0 - 130	
2,3,7,8-TCDF	10.2	7.00 - 13.0	
1,2,3,7,8-PeCDF	53.6	35.0 - 65.0	
2,3,4,7,8-PeCDF	53.8	35.0 - 65.0	
1,2,3,4,7,8-HxCDF	53.6	35.0 - 65.0	
1,2,3,6,7,8-HxCDF	54.1	35.0 - 65.0	
2,3,4,6,7,8-HxCDF	54.4	35.0 - 65.0	
1,2,3,7,8,9-HxCDF	54.0	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	53.5	35.0 - 65.0	
1,2,3,4,7,8,9-HpCDF	54.3	35.0 - 65.0	
OCDF	106	70.0 - 130	
Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	104	40.0 - 135	
13C-1,2,3,7,8-PeCDD	114	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	105	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	97.9	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	111	40.0 - 135	
13C-OCDD	104	40.0 - 135	
13C-2,3,7,8-TCDF	107	40.0 - 135	
13C-1,2,3,7,8-PeCDF	113	40.0 - 135	
13C-2,3,4,7,8-PeCDF	116	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	110	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	102	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	109	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	120	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	113	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	129	40.0 - 135	
13C-OCDF	119	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	114	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 10/2/2017

Reviewed By:   
Date: 10/2/2017

EPA Method 8290  
PCDD/F



FAL ID: 10950-001-SA  
Client ID: SO-MW24SSW-01-092517-6,5-8  
Matrix: Soil  
Batch No: X4253

Date Extracted: 09-27-2017  
Date Received: 09-27-2017  
Amount: 5.13 g  
% Solids: 39.32

ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/g

Acquired: 09-29-2017  
2005 WHO TEQ: 561  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	69.1	-		69.1	0.0273				
1,2,3,7,8-PeCDD	231	-		231	0.0570				
1,2,3,4,7,8-HxCDD	238	-		23.8	0.0793				
1,2,3,6,7,8-HxCDD	320	-		32.0	0.0940	Total TCDD	3870	-	
1,2,3,7,8,9-HxCDD	204	-		20.4	0.0823	Total PeCDD	4450	-	
1,2,3,4,6,7,8-HpCDD	2740	-		27.4	0.0842	Total HxCDD	4840	-	
OCDD	15300	-		4.59	0.172	Total HpCDD	4760	-	
2,3,7,8-TCDF	166	-	F	16.6	0.0269				
1,2,3,7,8-PeCDF	163	-		4.89	0.0449				
2,3,4,7,8-PeCDF	250	-		75.0	0.0468				
1,2,3,4,7,8-HxCDF	129	-		12.9	0.0437				
1,2,3,6,7,8-HxCDF	150	-		15.0	0.0417				
2,3,4,6,7,8-HxCDF	153	-		15.3	0.0574				
1,2,3,7,8,9-HxCDF	32.8	-		3.28	0.0657	Total TCDF	3110	-	D,M
1,2,3,4,6,7,8-HpCDF	869	-		8.69	0.0747	Total PeCDF	2530	-	D,M
1,2,3,4,7,8,9-HpCDF	53.0	-		0.530	0.0883	Total HxCDF	1740	-	D,M
OCDF	3150	-		0.945	0.170	Total HpCDF	3090	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	106	40.0 - 135	
13C-1,2,3,7,8-PeCDD	119	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	108	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	99.4	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	118	40.0 - 135	
13C-OCDD	117	40.0 - 135	
13C-2,3,7,8-TCDF	107	40.0 - 135	
13C-1,2,3,7,8-PeCDF	117	40.0 - 135	
13C-2,3,4,7,8-PeCDF	123	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	109	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	96.7	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	106	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	117	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	110	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	126	40.0 - 135	
13C-OCDF	120	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	116	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst: 

Date: 10/2/2017

Reviewed By: 

Date: 10/2/2017



EPA Method 8290  
PCDD/F



FAL ID: 10950-002-SA  
Client ID: SO-MW24SSW-02-092517-6,5-8  
Matrix: Soil  
Batch No: X4253

Date Extracted: 09-27-2017  
Date Received: 09-27-2017  
Amount: 5.43 g  
% Solids: 19.65


ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/g


Acquired: 09-29-2017  
2005 WHO TEQ: 224  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	31.9	-		31.9	0.0273				
1,2,3,7,8-PeCDD	90.1	-		90.1	0.0570				
1,2,3,4,7,8-HxCDD	73.2	-		7.32	0.0793				
1,2,3,6,7,8-HxCDD	109	-		10.9	0.0940	Total TCDD	1270	-	
1,2,3,7,8,9-HxCDD	83.1	-		8.31	0.0823	Total PeCDD	1520	-	
1,2,3,4,6,7,8-HpCDD	1010	-		10.1	0.0842	Total HxCDD	1650	-	
OCDD	4490	-		1.35	0.172	Total HpCDD	1700	-	
2,3,7,8-TCDF	88.3	-	F	8.83	0.0269				
1,2,3,7,8-PeCDF	71.2	-		2.14	0.0449				
2,3,4,7,8-PeCDF	110	-		33.0	0.0468				
1,2,3,4,7,8-HxCDF	47.3	-		4.73	0.0437				
1,2,3,6,7,8-HxCDF	58.7	-		5.87	0.0417				
2,3,4,6,7,8-HxCDF	58.0	-		5.80	0.0574				
1,2,3,7,8,9-HxCDF	11.1	-		1.11	0.0657	Total TCDF	1450	-	D,M
1,2,3,4,6,7,8-HpCDF	177	-		1.77	0.0747	Total PeCDF	868	-	
1,2,3,4,7,8,9-HpCDF	13.6	-		0.136	0.0883	Total HxCDF	466	-	
OCDF	555	-		0.167	0.170	Total HpCDF	497	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	103	40.0 - 135	
13C-1,2,3,7,8-PeCDD	116	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	103	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	99.1	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	117	40.0 - 135	
13C-OCDD	116	40.0 - 135	
13C-2,3,7,8-TCDF	104	40.0 - 135	
13C-1,2,3,7,8-PeCDF	112	40.0 - 135	
13C-2,3,4,7,8-PeCDF	118	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	98.5	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	91.3	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	102	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	116	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	97.0	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	130	40.0 - 135	
13C-OCDF	124	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	114	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 10/2/2017

Reviewed By:   
Date: 10/2/2017

EPA Method 8290  
PCDD/F



FAL ID: 10950-003-SA  
Client ID: SO-MW24SSW-03-092517-6,5-8  
Matrix: Soil  
Batch No: X4253

Date Extracted: 09-27-2017  
Date Received: 09-27-2017  
Amount: 5.05 g  
% Solids: 54.76

ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/g

Acquired: 09-29-2017  
2005 WHO TEQ: 564  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	52.9	-		52.9	0.0273				
1,2,3,7,8-PeCDD	195	-		195	0.0570				
1,2,3,4,7,8-HxCDD	177	-		17.7	0.0793				
1,2,3,6,7,8-HxCDD	401	-		40.1	0.0940	Total TCDD	3380	-	
1,2,3,7,8,9-HxCDD	247	-		24.7	0.0823	Total PeCDD	4380	-	
1,2,3,4,6,7,8-HpCDD	5720	-		57.2	0.0842	Total HxCDD	5690	-	
OCDD	43800	-		13.1	0.172	Total HpCDD	9600	-	
2,3,7,8-TCDF	137	-	F	13.7	0.0269				
1,2,3,7,8-PeCDF	130	-		3.90	0.0449				
2,3,4,7,8-PeCDF	223	-		66.9	0.0468				
1,2,3,4,7,8-HxCDF	168	-		16.8	0.0437				
1,2,3,6,7,8-HxCDF	157	-		15.7	0.0417				
2,3,4,6,7,8-HxCDF	223	-		22.3	0.0574				
1,2,3,7,8,9-HxCDF	44.5	-		4.45	0.0657	Total TCDF	2770	-	D,M
1,2,3,4,6,7,8-HpCDF	1650	-		16.5	0.0747	Total PeCDF	2430	-	D,M
1,2,3,4,7,8,9-HpCDF	137	-		1.37	0.0883	Total HxCDF	2820	-	D,M
OCDF	6170	-		1.85	0.170	Total HpCDF	6170	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	108	40.0 - 135	
13C-1,2,3,7,8-PeCDD	120	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	103	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	95.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	118	40.0 - 135	
13C-OCDD	119	40.0 - 135	
13C-2,3,7,8-TCDF	114	40.0 - 135	
13C-1,2,3,7,8-PeCDF	121	40.0 - 135	
13C-2,3,4,7,8-PeCDF	126	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	102	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	92.9	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	99.1	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	113	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	107	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	134	40.0 - 135	
13C-OCDF	126	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	119	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst: 

Date: 10/2/2017

Reviewed By: 

Date: 10/2/2017



EPA Method 8290  
PCDD/F



FAL ID: 10950-006-SA  
Client ID: SO-MW24SBO-01-092517-9  
Matrix: Soil  
Batch No: X4253

Date Extracted: 09-27-2017  
Date Received: 09-27-2017  
Amount: 5.06 g  
% Solids: 23.10

ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/g

Acquired: 09-29-2017  
2005 WHO TEQ: 63.4  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	9.09	-		9.09	0.0273				
1,2,3,7,8-PeCDD	23.5	-		23.5	0.0570				
1,2,3,4,7,8-HxCDD	15.3	-		1.53	0.0793				
1,2,3,6,7,8-HxCDD	33.7	-		3.37	0.0940	Total TCDD	266	-	M
1,2,3,7,8,9-HxCDD	21.2	-		2.12	0.0823	Total PeCDD	294	-	
1,2,3,4,6,7,8-HpCDD	477	-		4.77	0.0842	Total HxCDD	352	-	
OCDD	4000	-		1.20	0.172	Total HpCDD	793	-	
2,3,7,8-TCDF	22.9	-	F	2.29	0.0269				
1,2,3,7,8-PeCDF	20.1	-		0.603	0.0449				
2,3,4,7,8-PeCDF	26.3	-		7.89	0.0468				
1,2,3,4,7,8-HxCDF	18.9	-		1.89	0.0437				
1,2,3,6,7,8-HxCDF	16.9	-		1.69	0.0417				
2,3,4,6,7,8-HxCDF	16.4	-		1.64	0.0574				
1,2,3,7,8,9-HxCDF	4.26	-	J	0.426	0.0657	Total TCDF	343	-	D,M
1,2,3,4,6,7,8-HpCDF	110	-		1.10	0.0747	Total PeCDF	265	-	
1,2,3,4,7,8,9-HpCDF	10.4	-		0.104	0.0883	Total HxCDF	211	-	
OCDF	580	-		0.174	0.170	Total HpCDF	443	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	75.8	40.0 - 135	
13C-1,2,3,7,8-PeCDD	85.1	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	77.1	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	68.8	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	89.1	40.0 - 135	
13C-OCDD	86.6	40.0 - 135	
13C-2,3,7,8-TCDF	72.7	40.0 - 135	
13C-1,2,3,7,8-PeCDF	78.8	40.0 - 135	
13C-2,3,4,7,8-PeCDF	82.5	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	78.6	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	70.9	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	78.7	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	88.5	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	80.4	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	99.5	40.0 - 135	
13C-OCDF	93.7	40.0 - 135	

Cleanup Surrogate

37Cl-2,3,7,8-TCDD 85.2 50.0 - 150

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
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- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst: 

Date: 10/2/2017

Reviewed By: 

Date: 10/2/2017



Frontier Analytical Laboratory  
 5172 Hillside Circle  
 El Dorado Hills, CA 95762  
 Tel: 916-934-0900  
 Fax: 916-934-0999

**FAL USE ONLY**  
 Laboratory Project No.: 10950  
 Temperature: 0 °C

**Chain of Custody**  
 www.frontieranalytical.com

Please Print in Pen Page 1 of 1

<b>CLIENT INFORMATION</b>		<b>INVOICE INFORMATION</b> (if different from client info)		<b>PROJECT INFORMATION</b>	
Company Name: <u>Pioneer Technologies Corporation</u>		Company Name: <u>Same as client</u>		FAL Quote #: <u>3165</u>	
Contact Name: <u>Levi Fernandez</u>		Contact Name: _____		P.O. #: _____	
Address: <u>5205 Corporate Ctr. Ct. SE 5th Olympia WA</u>		Address: _____		Project #: <u>001009, 000107, 00102, 0102</u>	
Phone: <u>360-570-1700</u> Fax: <u>360-570-1777</u>		Phone: _____ Fax: _____		Project Name: <u>Port of Olympia - Eagle Bay</u>	
Email: <u>fernandesl@pioneer1.com</u>		Email: _____		TAT (business days): <input type="checkbox"/> 15 <input type="checkbox"/> 10 <input checked="" type="checkbox"/> 5* <input type="checkbox"/> 3* (√ one)	
* FAL must agree with price and RUSH TAT in writing.					

<b>REPORT INFORMATION</b>		<b>REPORT DISTRIBUTION</b> (email only is preferred)		<b>ADDITIONAL INSTRUCTIONS</b>	
Report Level: <input checked="" type="checkbox"/> I/II <input type="checkbox"/> III <input type="checkbox"/> IV		<input checked="" type="checkbox"/> Hardcopy		<u>Level II Rpt.</u>	
<input checked="" type="checkbox"/> EDD: <input type="checkbox"/> FAL Basic <input type="checkbox"/> Geotracker		<input type="checkbox"/> CD (.pdf including EDDs if requested)			
<input type="checkbox"/> Other: _____ <input type="checkbox"/> Custom: Contact FAL		<input checked="" type="checkbox"/> Email (.pdf including EDDs if requested)			
<input type="checkbox"/> California State Drinking Water Form					
System #: _____ Source #: _____					
Sampler: _____ Employer: _____					

	Sample ID	Date	Time	Matrix	# of containers	EPA 1613**	EPA 8290**	DLM 02.0	EPA 8280**	Appendix IX	EPA TO-9/9A	EPA 23/23A	EPA 1668	FAL 15	Other	**CONGENERS		**TEQ		Remarks		
																<input type="checkbox"/> 2,3,7,8-TCDD only	<input type="checkbox"/> 1998 WHO	<input type="checkbox"/> 2,3,7,8-TCDD/F only	<input checked="" type="checkbox"/> 2005 WHO		<input checked="" type="checkbox"/> PCDD/F (Cl <sub>4</sub> -Cl <sub>8</sub> )	<input type="checkbox"/> Other
1	SO-MW2455W-01-092517-6-8.5	9/25/17	14:20	Soil			X														6.5-8.	
2	SO-MW2455W-02-092517-6-8.5	9/25/17	13:55	Soil			X															6.5-8
3	SO-MW2455W-03-092517-6-8.5	9/25/17	14:06	Soil			X															6.5-8
4	SO-MW2455W-04-092517-6-8.5	9/25/17	14:30	Soil			X															6.5-8
5	<del>SO-MW2455W-05</del>			<del>Soil</del>																		
6	EB-MW2455W-07-092517-	9/25/17	14:40	Water			X															
7	SO-MW24500-01-092517-9	9/25/17	14:50	Soil			X															SO-MW24500-01-092517-9
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Samples will be disposed of 90 days after sample receipt unless other arrangements have been made and agreed upon in writing.

<b>Relinquished by:</b> (Signature and Printed Name)		<b>Date</b>	<b>Time</b>	<b>Received by:</b> (Signature and Printed Name)		<b>Date</b>	<b>Time</b>
<u>Levi Fernandez</u>		<u>9/26/17</u>	<u>13:00</u>	<u>Kathy Zorp K. Zorp</u>		<u>9.27.17</u>	<u>9:40</u>
000013 of 000015							

Client understands that all terms described in the proposals, quotations, and/or the general terms provided in the current FAL price schedules will be followed.

White Copy - Report  
Yellow Copy - Laboratory  
Pink Copy - Originator

## Frontier Analytical Laboratory

### Sample Login Form

FAL Project ID: 10950

Client:	Pioneer Technologies Corporation
Client Project ID:	Port of Olympia - East Bay
Date Received:	09/27/2017
Time Received:	09:40 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	6
Duplicates:	5
Storage Location:	R3

Method of Delivery:	Fed-Ex
Tracking Number:	770351862509
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	No
Test aqueous sample for residual Chlorine	Yes
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	Yes
pH Range of Aqueous Sample	Between 4-9
Anomalies or additional comments:	
Please note that various samples were received in clear glass jars wrapped in aluminum foil	



**FRONTIER ANALYTICAL LABORATORY**  
 Frontier Analytical Laboratory  
 5172 Hillsdale Circle  
 El Dorado Hills, CA 95762  
 Tel: 916-934-0900  
 Fax: 916-934-0999

**FAL USE ONLY**  
 Laboratory Project No.: 10950  
 Temperature: 0 °C

**Chain of Custody**  
 www.frontieranalytical.com  
 Please Print in Pen Page 1 of 2

<b>CLIENT INFORMATION</b>		<b>INVOICE INFORMATION</b> (if different from client info)		<b>PROJECT INFORMATION</b>																																																																									
Company Name: <u>Proper Technologies Corporation</u> Contact Name: <u>Levi Fernandez</u> Address: <u>5205 Carlsbad Ct. Ct. SE St. Olympia WA</u> Phone: <u>360-520-1700</u> Fax: <u>360-520-1777</u> Email: <u>lefernan@proptech.com</u>		Company Name: <u>Same as client</u> Contact Name: _____ Address: _____ Phone: _____ Fax: _____ Email: _____		FAL Quote #: <u>3165</u> P.O. #: _____ Project #: <u>001009, 000107, 00102, 0102</u> Project Name: <u>Port of Olympia - East Bay</u> TAT (business days): <input type="checkbox"/> 15 <input type="checkbox"/> 10 <input checked="" type="checkbox"/> 5* <input type="checkbox"/> 3* (v one) * FAL must agree with price and RUSH TAT in writing.																																																																									
<b>REPORT INFORMATION</b>		<b>REPORT DISTRIBUTION</b> (email only is preferred)		<b>ADDITIONAL INSTRUCTIONS</b>																																																																									
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		<table border="1"> <tr> <th>Sample ID</th> <th>Date</th> <th>Time</th> <th>Matrix</th> <th># of containers</th> <th>EPA 1613**</th> <th>EPA 8260**</th> <th>DLM 02.0</th> <th>EPA 8260**</th> <th>Appendix IX</th> <th>EPA 10490A</th> <th>EPA 21023A</th> <th>EPA 1668</th> <th>FAL IS</th> <th>Other</th> <th>**CONGENERS</th> <th>**TEQ</th> <th>Remarks</th> </tr> <tr> <td>1</td> <td>20-MW24SSW-01-092517-6-B-5</td> <td>9/25/17</td> <td>14:20</td> <td>3.1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/> 2,3,7,8-TCDD only <input type="checkbox"/> 2,3,7,8-TCDF only <input checked="" type="checkbox"/> PCDD/F (Cl<sub>2</sub>-Cl<sub>4</sub>)</td> <td><input type="checkbox"/> 1998 WHO <input checked="" type="checkbox"/> 2005 WHO <input type="checkbox"/> Other</td> <td></td> </tr> <tr> <td>2</td> <td>20-MW24SSW-02-092517-6-B-5</td> <td>9/25/17</td> <td>13:55</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>20-MW24SSW-03-092517-6-B-5</td> <td>9/25/17</td> <td>14:05</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		Sample ID	Date	Time	Matrix	# of containers	EPA 1613**	EPA 8260**	DLM 02.0	EPA 8260**	Appendix IX	EPA 10490A	EPA 21023A	EPA 1668	FAL IS	Other	**CONGENERS	**TEQ	Remarks	1	20-MW24SSW-01-092517-6-B-5	9/25/17	14:20	3.1											<input type="checkbox"/> 2,3,7,8-TCDD only <input type="checkbox"/> 2,3,7,8-TCDF only <input checked="" type="checkbox"/> PCDD/F (Cl <sub>2</sub> -Cl <sub>4</sub> )	<input type="checkbox"/> 1998 WHO <input checked="" type="checkbox"/> 2005 WHO <input type="checkbox"/> Other		2	20-MW24SSW-02-092517-6-B-5	9/25/17	13:55															3	20-MW24SSW-03-092517-6-B-5	9/25/17	14:05																
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1	20-MW24SSW-01-092517-6-B-5	9/25/17	14:20	3.1											<input type="checkbox"/> 2,3,7,8-TCDD only <input type="checkbox"/> 2,3,7,8-TCDF only <input checked="" type="checkbox"/> PCDD/F (Cl <sub>2</sub> -Cl <sub>4</sub> )	<input type="checkbox"/> 1998 WHO <input checked="" type="checkbox"/> 2005 WHO <input type="checkbox"/> Other																																																													
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3	20-MW24SSW-03-092517-6-B-5	9/25/17	14:05																																																																										

Frontier Analytical Laboratory

**10950-001-SA**  
 Client ID: SO-MW24SSW-01-092517-6-B-5  
 Storage: R3 (01 of 02)  
 Client: Port of Olympia  
 Sample ID: 20-MW24SSW-01-092517-6-B-5  
 Date Sampled: 9/25/17 Time: 14:20  
 Project: East Bay  
 Analysis Request: \_\_\_\_\_  
 Preservative: \_\_\_\_\_

Frontier Analytical Laboratory

**10950-002-SA**  
 Client ID: SO-MW24SSW-02-092517-6-B-5  
 Storage: R3 (01 of 02)  
 Client: Port of Olympia  
 Sample ID: 20-MW24SSW-02-092517-6-B-5  
 Date Sampled: 9/25/17 Time: 13:55  
 Project: East Bay  
 Analysis Request: \_\_\_\_\_  
 Preservative: \_\_\_\_\_

Frontier Analytical Laboratory

**10950-003-SA**  
 Client ID: SO-MW24SSW-03-092517-6-B-5  
 Storage: R3 (01 of 02)  
 Client: Port of Olympia  
 Sample ID: 20-MW24SSW-03-092517-6-B-5  
 Date Sampled: 9/25/17 Time: 14:05  
 Project: East Bay  
 Analysis Request: \_\_\_\_\_  
 Preservative: \_\_\_\_\_

Frontier Analytical Laboratory

**10950-004-SA**  
 Client ID: SO-MW24SSW-04-092517-6-B-5  
 Storage: R3 (01 of 02)  
 Client: Port of Olympia  
 Sample ID: 20-MW24SSW-04-092517-6-B-5  
 Date Sampled: 9/25/17 Time: 14:30  
 Project: East Bay  
 Analysis Request: \_\_\_\_\_  
 Preservative: \_\_\_\_\_

Frontier Analytical Laboratory

**10950-006-SA**  
 Client ID: SO-MW24SSW-06-092517-6-B-5  
 Storage: R3 (01 of 02)  
 Client: Port of Olympia  
 Sample ID: 20-MW24SSW-06-092517-6-B-5  
 Date Sampled: 9/25/17 Time: 14:50  
 Project: East Bay  
 Analysis Request: \_\_\_\_\_  
 Preservative: \_\_\_\_\_

Frontier Analytical Laboratory

**10950-005-SA**  
 Client ID: EB-MW24SSW-04-092517  
 Storage: R3 (01 of 01)

Sample ID: EB-MW24SSW-04-092217  
 Project: Port of Olympia-04  
 Date: 9/25/17  
 Time: 14:40  
 Sampler: LF  
 Matrix: Equipment Blank  
 Preservative: \_\_\_\_\_  
 Lab Contact: Bradley Silverbush (916-943-090)  
 Site Contact: Levi Fernandez (360-570-1700)  
 Check Number: 01\_1\_1\_EB2\_895\_21092017  
 Confidentiality/Client Privileged Information  
 Analysis: 8290 - 8290

2017/09/27

# **Appendix I**

## **Overburden Soil Stockpile Sampling Results**



**Table 1: Laboratory Analysis Overview for Overburden Soil Stockpiles (October 2017 Sampling Event)**

Excavation Name	Sample Name	Laboratory Analyses Performed		
		Arsenic (EPA Method 6020A)	Total Naphthalenes (EPA Method 8270D SIM)	TPH-G (Method NWTPH-Gx)
DP04	SO-DP04SP-1A-100417	X		
	SO-DP04SP-1B-100417	X		
	SO-DP04SP-1C-100417	X		
	SO-DP04SP-1C-100417-(01) <sup>1</sup>	X		
DP06/SVP-2SO <sup>2</sup>	SO-DP06SP-1A-100417		X	X
	SO-DP06SP-1B-100417		X	X
	SO-DP06SP-1C-100417		X	X

**Notes:**

<sup>1</sup>Stockpile sample SO-DP04SP-1C-100417-(01) was a duplicate sample.

<sup>2</sup>Stockpile samples from excavation DP06/SVP-2SO have been referred to as DP06 for brevity in sample names sent to the lab.

TPH-G: Total petroleum hydrocarbons as gasoline

**Table 2: Laboratory Results for Excavation DP04 - Overburden Stockpile for Reuse Under Cover**

Sample Name	Arsenic Result (mg/kg)
SO-DP04SP-1A-100417	2.52
SO-DP04SP-1B-100417	2.42
SO-DP04SP-1C-100417	2.94
SO-DP04SP-1C-100417-(01)	2.50

**Notes:**

Arsenic remediation level (RL) is 20 mg/kg.

**Table 3: Laboratory Results for Excavation DP06/SVP-2SO - Overburden Stockpile for Reuse Under Cover**

Sample Name <sup>1</sup>	Total Naphthalenes Result (mg/kg)	TPH-G Result (mg/kg)
SO-DP06SP-1A-100417	0.028	5 U
SO-DP06SP-1B-100417	0.03 U	5 U
SO-DP06SP-1C-100417	0.046	5 U

**Notes:**

<sup>1</sup>Stockpile samples from excavation DP06/SVP-2SO have been referred to as DP06 for brevity in sample names sent to the lab.

TPH-G: Total petroleum hydrocarbons as gasoline

U: Laboratory flag indicates non-detect result.

Total naphthalenes remediation level (RL) is 5 mg/kg.

TPH-G RL is 100 mg/kg.

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Arina Podnozova, B.S.  
Eric Young, B.S.

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October 16, 2017

Levi Fernandes, Project Manager  
Pioneer  
5205 Corporate Ctr. Ct. SE, Ste. A  
Olympia, WA 98503

Dear Mr Fernandes:

Included are the results from the testing of material submitted on October 6, 2017 from the Port of Olympia East Bay, F&BI 710090 project. There are 24 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures

c: mcphersonh@uspioneer.com  
NAA1016R.DOC

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 6, 2017 by Friedman & Bruya, Inc. from the Pioneer Port of Olympia East Bay, F&BI 710090 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Pioneer</u>
710090 -01	SO-DP04SP-02-100417
710090 -02	SO-DP04SP-1A-100417
710090 -03	SO-DP04SP-1B-100417
710090 -04	SO-DP04SP-1C-100417
710090 -05	SO-DP04SP-1C-100417-(01)
710090 -06	SO-DP06SP-02-100417
710090 -07	SO-DP06SP-1A-100417
710090 -08	SO-DP06SP-1B-100417
710090 -09	SO-DP06SP-1C-100417
710090 -10	SO-MW24SSP-01-100417

Silver in the 6020A matrix spike duplicate failed the acceptance criteria. The laboratory control sample passed the acceptance criteria, therefore the results were due to matrix effect.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17  
Date Received: 10/06/17  
Project: Port of Olympia East Bay, F&BI 710090  
Date Extracted: 10/06/17  
Date Analyzed: 10/06/17

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD NWTPH-Gx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
SO-DP04SP-02-100417 710090-01	<5	73
SO-DP06SP-02-100417 710090-06	<5	103
SO-DP06SP-1A-100417 710090-07	<5	99
SO-DP06SP-1B-100417 710090-08	<5	100
SO-DP06SP-1C-100417 710090-09	<5	105
SO-MW24SSP-01-100417 710090-10	<5	86
Method Blank 07-2219 MB	<5	86

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17  
Date Received: 10/06/17  
Project: Port of Olympia East Bay, F&BI 710090  
Date Extracted: 10/06/17  
Date Analyzed: 10/06/17

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 56-165)
SO-DP04SP-02-100417 710090-01	140 x	<250	99
SO-DP06SP-02-100417 710090-06	<50	<250	101
SO-MW24SSP-01-100417 710090-10	350 x	2,700	101
Method Blank 07-2263 MB	<50	<250	102

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SP-02-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-01
Date Analyzed:	10/09/17	Data File:	710090-01.088
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.43
Barium	95.6
Cadmium	1.34
Chromium	12.5
Lead	252 ve
Mercury	<1
Selenium	<1
Silver	<1



FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SP-02-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-01 x5
Date Analyzed:	10/10/17	Data File:	710090-01 x5.039
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Lead	273
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SP-1A-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-02
Date Analyzed:	10/09/17	Data File:	710090-02.089
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.52
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SP-1B-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-03
Date Analyzed:	10/10/17	Data File:	710090-03.056
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.42
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SP-1C-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-04
Date Analyzed:	10/10/17	Data File:	710090-04.060
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.94
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SP-1C-100417-(01)	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-05
Date Analyzed:	10/10/17	Data File:	710090-05.061
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.50
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP06SP-02-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-06
Date Analyzed:	10/10/17	Data File:	710090-06.062
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.43
Barium	51.2
Cadmium	<1
Chromium	13.3
Lead	6.85
Mercury	<1
Selenium	<1
Silver	<1

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-MW24SSP-01-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-10
Date Analyzed:	10/10/17	Data File:	710090-10.063
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	9.95
Barium	87.8
Cadmium	<2
Chromium	17.1
Lead	44.4
Mercury	<2
Selenium	<2
Silver	<2

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Pioneer
Date Received:	NA	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	I7-550 mb
Date Analyzed:	10/09/17	Data File:	I7-550 mb.072
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Barium	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1
Selenium	<1
Silver	<1



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SO-DP06SP-1A-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-07 1/5
Date Analyzed:	10/10/17	Data File:	101011.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	96	31	163
Benzo(a)anthracene-d12	104	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.018
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SO-DP06SP-1B-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-08 1/5
Date Analyzed:	10/10/17	Data File:	101009.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	100	31	163
Benzo(a)anthracene-d12	112	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SO-DP06SP-1C-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-09 1/5
Date Analyzed:	10/10/17	Data File:	101010.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	97	31	163
Benzo(a)anthracene-d12	104	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.027
2-Methylnaphthalene	0.014
1-Methylnaphthalene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Pioneer
Date Received:	Not Applicable	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	07-2257 mb 1/5
Date Analyzed:	10/09/17	Data File:	100909.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	87	31	163
Benzo(a)anthracene-d12	101	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis for TCLP Metals By EPA Method 6020A and 1311

Client ID:	SO-DP04SP-02-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/12/17	Lab ID:	710090-01
Date Analyzed:	10/13/17	Data File:	710090-01.038
Matrix:	Soil/Solid	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP

Analyte:	Concentration mg/L (ppm)	TCLP Limit
Lead	<1	5.0

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis for TCLP Metals By EPA Method 6020A and 1311

Client ID:	Method Blank	Client:	Pioneer
Date Received:	NA	Project:	Port of Olympia East Bay
Date Extracted:	10/12/17	Lab ID:	I7-564 mb
Date Analyzed:	10/13/17	Data File:	I7-564 mb.033
Matrix:	Soil/Solid	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP

Analyte:	Concentration mg/L (ppm)	TCLP Limit
Lead	<1	5.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17

Date Received: 10/06/17

Project: Port of Olympia East Bay, F&BI 710090

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TPH AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Laboratory Code: 710071-02 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	90	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17

Date Received: 10/06/17

Project: Port of Olympia East Bay, F&BI 710090

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 710098-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	850	89	93	63-146	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	96	79-144



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17

Date Received: 10/06/17

Project: Port of Olympia East Bay, F&BI 710090

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL METALS USING EPA METHOD 6020A**

Laboratory Code: 710076-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	1.92	94	91	75-125	3
Barium	mg/kg (ppm)	50	17.9	98	92	75-125	6
Cadmium	mg/kg (ppm)	10	<1	92	88	75-125	4
Chromium	mg/kg (ppm)	50	8.43	84	83	75-125	1
Lead	mg/kg (ppm)	50	2.80	88	83	75-125	6
Mercury	mg/kg (ppm)	5	<1	92	87	75-125	6
Selenium	mg/kg (ppm)	5	<1	82	79	75-125	4
Silver	mg/kg (ppm)	10	<1	77	74 vo	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	99	80-120
Barium	mg/kg (ppm)	50	103	80-120
Cadmium	mg/kg (ppm)	10	99	80-120
Chromium	mg/kg (ppm)	50	101	80-120
Lead	mg/kg (ppm)	50	100	80-120
Mercury	mg/kg (ppm)	5	102	80-120
Selenium	mg/kg (ppm)	5	94	80-120
Silver	mg/kg (ppm)	10	87	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17

Date Received: 10/06/17

Project: Port of Olympia East Bay, F&BI 710090

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL  
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: 710070-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	115	44-129
2-Methylnaphthalene	mg/kg (ppm)	0.17	<0.01	117	45-135
1-Methylnaphthalene	mg/kg (ppm)	0.17	<0.01	115	40-141

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	91	90	58-121	1
2-Methylnaphthalene	mg/kg (ppm)	0.17	94	89	58-123	5
1-Methylnaphthalene	mg/kg (ppm)	0.17	93	88	60-124	6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17

Date Received: 10/06/17

Project: Port of Olympia East Bay, F&BI 710090

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF SOIL/SOLID SAMPLES  
FOR TCLP METALS USING  
EPA METHODS 6020A AND 1311**

Laboratory Code: 710094-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	mg/L (ppm)	1.0	<1	97	97	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/L (ppm)	1.0	99	80-120

**Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Chain of Custody Record

7100920

NE 10-06-17

CHOC Number: 01\_1\_1\_EG4\_18420\_05102017

BT3 / VS1

Send Results To:  
mchersonh@uspioneer.com, fernandesl@uspioneer.com

Site Contact:  
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Project: Port of Olympia, East Bay  
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Send Invoice To:

PIONEER  
Levi Fernandes  
Phone: 3605701700

Laboratory Information:  
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Eric Young  
Phone: 2062062066

Email: fernandesl@uspioneer.com  
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CHOC Variation: 0308.05  
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Sample Information

Sample ID (Auto Generated)	Date (MM/DD/YYYY)	Time (0000 to 2400)	Sampler's Initials	Special Lab Instructions Included ==>			Analytes						Comments for Sample		
				Leachate	Filtered	MS/MSD	1311 - TCLP RORA & PL	6020A - Arsenic	6020A - RCRA Lead and Copper	8270D - 10/6 8270D Methylene	NWTPH-D -	NWTPH-D		NWTPH-Gx -	NWTPH-Gx
SO-DP04SP-02-100417	10/04/2017	14:32	HM				X	X	X						
SO-DP04SP-1A-100417	10/04/2017	11:45	HM				X	X							
SO-DP04SP-1B-100417	10/04/2017	11:52	HM				X	X							
SO-DP04SP-1C-100417	10/04/2017	12:05	HM				X	X							
SO-DP04SP-02-100417 (01)	10/04/2017	12:05	HM				X	X							
SO-DP06SP-1A-100417	10/04/2017	14:00	HM					X							
SO-DP06SP-1A-100417	10/04/2017	12:21	HM				X	X							
SO-DP06SP-1B-100417	10/04/2017	12:31	HM				X	X							
SO-DP06SP-1C-100417	10/04/2017	12:40	HM				X	X							
SO-MW24SSP-01-100417	10/04/2017	15:10	HM					X							

Cooler (Yes/No):  
Cooler Temp:

Turnaround Time:  
5-day

Hazard Identification:

Sample Disposal:  
per lab protocol

Preservatives

Lab Use Only:

QA/QC Requirements:  
Standard

Sampling Event Comments:

Samples received at 2 °C

1. Relinquished By: (Sign and Print)

Levi Fernandes

Date/Time:

10/6/17 6:05

1. Received By: (Sign and Print)

S. O'Neil

Date/Time:

FB, Due 10/6/17 06:05

2. Relinquished By: (Sign and Print)

3. Relinquished By: (Sign and Print)

Date/Time:

3. Received By: (Sign and Print)

Date/Time:

# **Appendix J**

## **Soil Disposal Documentation**

### **Contents:**

- **Soil Disposal Characterization Memo**
- **Landfill Special Waste Application**
- **Landfill Special Waste Permit**
- **Soil Transport/Weight Documentation**

# Memo



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**To:** Tyson Carpenter, PE  
**From:** Levi Fernandes, PE; Heather McPherson, EIT  
**Cc:** Rachael Jamison; Chris Waldron, PE  
**Date:** October 18, 2017  
**Subject:** East Bay Redevelopment Site - Surgical Excavation Soil Characterization and Landfill Profiling Data Package Agreed Order DE14072, Ecology Facility/Site No. 5785176, Cleanup Site ID No. 407

This memorandum summarizes soil sampling data in support of waste characterization and landfill profiling associated with the excavation of contaminated soil at the Port of Olympia East Bay Redevelopment Site, specifically Parcels 2 and 3. Excavation of contaminated soil was completed at three locations exceeding remediation levels (RLs) (i.e., DP06/SVP-2SO, DP04, and MW24S) per the Washington Department of Ecology-approved Engineering Design Report (EDR) (PIONEER 2017). In general, each of the three soil excavations was centered on the location of the RL exceedance with the contaminated soil stockpiled separately for 5-point composite soil sampling. Representative pre- and post-excavation soil sampling results and associated laboratory analytical reports are provided in Attachment A and B, respectively. A summary of collected discrete and composite soil samples representative of the excavated soils are as follows:

#### Excavation DP06/SVP-S2O

- DP06-060926-030: pre-excavation discrete soil sample collected at 3 to 5 feet below ground surface (bgs)
- SO-SVP-2SO-050713-4-6: pre-excavation discrete soil sample collected at 4 to 6 feet bgs
- SO-DP06SP-02-100417: 5-point composite soil sample representative of stockpiled contaminated soil (estimated at 6 cubic yards)

#### Excavation DP04

- DP04-060925-040: pre-excavation discrete soil sample collected at 4 to 6 feet bgs
- SO-DP04SP-02-100417: 5-point composite soil sample representative of stockpiled contaminated soil (estimated at 13 cubic yards)

#### Excavation MW24S

- MW24S-061209-1-2.5: pre-excavation discrete soil sample collected at 1 to 2.5 feet bgs
- MW24S-061209-3-4.5: pre-excavation discrete soil sample collected at 3 to 4.5 feet bgs
- MW24S-061209-6.5-8: pre-excavation discrete soil sample collected at 6.5 to 8 feet bgs
- MW24S-061209-9-10: pre-excavation discrete soil sample collected at 9 to 10 feet bgs
- SO-MW24SSP-01-100417: 5-point composite soil sample representative of stockpiled contaminated soil (estimated at 35 cubic yards)

The constituents of potential concern include total petroleum hydrocarbons as gasoline, diesel, and heavy oil, volatile organic compounds (VOCs), semi-volatile VOCs, polychlorinated biphenyls (PCBs), metals, and total dioxans/furans. In

general, VOCs, semi-VOCs, and PCBs were not detected above the method reporting limit except for select VOCs and semi-VOCs in the discrete soil sample collected from SVP-2SO. Resource Conservation and Recovery Act (RCRA) eight total metal concentrations were less than the 20:1 toxicity characteristic leaching procedure (TCLP) regulatory limit except for total lead in discrete and composite samples collected from the DP04 excavation; however, TCLP lead was not detected above the method reporting limit (1 milligram per liter).

Based on process knowledge and review of pre-and post-excavation sampling results, it is our opinion that the contaminated soil is not designated as a listed or characteristic hazardous waste. Based on communication with Kristin Castner (Waste Approval Manager for Waste Management), the contaminated soil in the three separate stockpiles may be managed under one soil profile given the excavations were completed within close proximity and on one property.

## Reference

PIONEER 2016. Remedial Investigation/Feasibility Study Report, East Bay Redevelopment Site, December.

PIONEER 2017. Engineering Design Report for Cleanup Implementation. East Bay Redevelopment Site. Olympia, Washington. Agreed Order No. DE14072. Facility/Site No. 5785176 . PIONEER Technologies Corporation. June 2017.

## Enclosures

Attachment A	Pre-Excavation Sample Results (Excerpted from the Remedial Investigation/Feasibility Study Report)
Attachment B	Post-Excavation Stockpile Sample Results



# **Attachment A**

**Pre-Excavation Sample Results Excerpted from the  
Remedial Investigation/Feasibility Study Report**

Table L-1: Results for Soil Samples

Constituent	Site ID (Depth)																					
	DP01	DP02	DP03	DP04	DP05	DP06	DP07	DP08	DP09	DP10	DP11		DP11-1	DP11-2		DP11-3		DP11-4		DP11-4		
	(1-3' bgs)	(1-3' bgs)	(1-3' bgs)	(1-3' bgs)	(4-6' bgs)	(1.5-3.5' bgs)	(3-5' bgs)	(4.5-5.5' bgs)	(1-3' bgs)	(1-3' bgs)	(2-4' bgs)	(0-2' bgs)	(8-10' bgs)	(9' bgs)	(1' bgs)	(3.5' bgs)	(9' bgs)	(3' bgs)	(9' bgs)	(1.5' bgs)	(3' bgs)	(9' bgs)
<b>Total Petroleum Hydrocarbons (mg/kg)</b>																						
TPH-D	22 J	580	77	25 J	3,900	9.1 J	97	27 U	7,300	28 U	6.4 J	51 J	220 J	--	--	--	607	--	--	--	--	--
TPH-G	2.5 J	24	1.7 J	1.6 J	13	0.78 J	290	2.1 J	60	0.82 J	8.7	7.6 J	13 J	--	--	--	--	--	--	--	--	--
TPH-HO	100	9,900	620	77	7,200	51 U	320	53 U	8,800	55 U	50 U	160	1,000	--	--	--	3,500	--	--	--	--	--
<b>Volatile Organic Compounds (mg/kg)</b>																						
1,1,1-Trichloroethane	0.032 U	0.032 U	0.026 U	0.029 U	0.048 U	0.026 U	1.5 U	0.030 U	0.030 U	0.028 U	0.024 U	0.020 U	0.13 U	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	0.016 U	0.016 U	0.013 U	0.014 U	0.024 U	0.013 U	0.75 U	0.015 U	0.015 U	0.014 U	0.012 U	0.010 U	0.067 U	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
1,1-Dichloroethylene	0.032 U	0.032 U	0.026 U	0.029 U	0.048 U	0.026 U	1.5 U	0.030 U	0.030 U	0.028 U	0.024 U	0.020 U	0.13 U	--	--	--	--	--	--	--	--	--
1,2-cis-Dichloroethylene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	0.016 U	0.016 U	0.013 U	0.014 U	0.024 U	0.013 U	0.75 U	0.015 U	0.015 U	0.014 U	0.012 U	0.010 U	0.067 U	--	--	--	--	--	--	--	--	--
1,2-trans-Dichloroethylene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	0.054 U	0.079 U	0.054 U	0.053 U	0.063 U	0.050 U	0.22 U	0.051 U	0.075 U	0.052 U	0.051 U	0.0055 U	0.026 U	--	--	--	--	--	--	--	--	--
Benzene	0.016 U	0.016 U	0.013 U	0.014 U	0.024 U	0.013 U	0.75 U	0.015 U	0.015 U	0.014 U	0.012 U	0.0064 J	0.067 U	--	--	--	--	--	--	--	--	--
Bromodichloromethane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
Bromoform	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
Bromomethane	0.40 U	0.40 U	0.32 U	0.36 U	0.59 U	0.32 U	19 U	0.37 U	0.38 U	0.35 U	0.30 U	0.25 U	1.7 U	--	--	--	--	--	--	--	--	--
Carbon Tetrachloride	0.032 U	0.032 U	0.026 U	0.029 U	0.048 U	0.026 U	1.5 U	0.030 U	0.030 U	0.028 U	0.024 U	0.020 U	0.13 U	--	--	--	--	--	--	--	--	--
Chlorobenzene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
Chloroform	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
Chloromethane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
Dibromochloromethane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
Ethyl Chloride	0.40 U	0.40 U	0.32 U	0.36 U	0.59 U	0.32 U	19 U	0.37 U	0.38 U	0.35 U	0.30 U	0.25 U	1.7 U	--	--	--	--	--	--	--	--	--
Ethylbenzene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
m&p-Xylene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
Methylene Chloride	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
o-Xylene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
p-Isopropyltoluene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.014 J	0.069 U	0.060 U	0.051 U	0.72	--	--	--	--	--	--	--	--	--
Styrene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	0.050 U	0.049 U	0.040 U	0.045 U	0.074 U	0.040 U	2.3 U	0.047 U	0.047 U	0.043 U	0.037 U	0.032 U	0.21 U	--	--	--	--	--	--	--	--	--
Toluene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.017 J	0.33 U	--	--	--	--	--	--	--	--	--
Total Xylenes	0.16 U	0.16 U	0.13 U	0.14 U	0.24 U	0.13 U	7.4 U	0.15 U	0.15 U	0.14 U	0.12 U	0.10 U	0.66 U	--	--	--	--	--	--	--	--	--
Trichloroethylene	0.032 U	0.032 U	0.026 U	0.029 U	0.048 U	0.026 U	1.5 U	0.030 U	0.030 U	0.028 U	0.024 U	0.020 U	0.13 U	--	--	--	--	--	--	--	--	--
Vinyl Chloride	0.032 U	0.032 U	0.026 U	0.029 U	0.048 U	0.026 U	1.5 U	0.030 U	0.030 U	0.028 U	0.024 U	0.020 U	0.13 U	--	--	--	--	--	--	--	--	--
<b>Semi-Volatile Organic Compounds (mg/kg)</b>																						
1,1,1,2-Tetrachloroethane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
1,1-Dichloropropene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
1,2,3-Trichlorobenzene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.054 U	0.079 U	0.054 U	0.053 U	0.063 U	0.050 U	0.22 U	0.051 U	0.075 U	0.052 U	0.051 U	0.0055 U	0.026 U	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.16 J	--	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	0.054 U	0.079 U	0.054 U	0.053 U	0.063 U	0.050 U	0.22 U	0.051 U	0.075 U	0.052 U	0.051 U	0.0055 U	0.026 U	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.13 J	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	0.054 U	0.079 U	0.054 U	0.053 U	0.063 U	0.050 U	0.22 U	0.051 U	0.075 U	0.052 U	0.051 U	0.0055 U	0.026 U	--	--	--	--	--	--	--	--	--
1,3-Dichloropropane	0.032 U	0.032 U	0.026 U	0.029 U	0.048 U	0.026 U	1.5 U	0.030 U	0.030 U	0.028 U	0.024 U	0.020 U	0.13 U	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	0.032 U	0.30 U	0.032 U	0.032 U	0.038 U	0.030 U	0.57	0.030 U	0.30 U	0.031 U	0.031 U	0.099	0.048	--	--	--	--	--	--	--	--	--
2,2-Dichloropropane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--	--

Table L-1: Results for Soil Samples

Constituent	Site ID (Depth)																				
	DP01	DP02	DP03	DP04	DP05	DP06	DP07	DP08	DP09	DP10	DP11		DP11-1	DP11-2			DP11-3		DP11-4		DP11-4
	(1-3' bgs)	(1-3' bgs)	(1-3' bgs)	(1-3' bgs)	(4-6' bgs)	(1.5-3.5' bgs)	(3-5' bgs)	(4.5-5.5' bgs)	(1-3' bgs)	(1-3' bgs)	(2-4' bgs)	(0-2' bgs)	(8-10' bgs)	(9' bgs)	(1' bgs)	(3.5' bgs)	(9' bgs)	(3' bgs)	(9' bgs)	(1.5' bgs)	(3' bgs)
<b>Semi-Volatile Organic Compounds (mg/kg)</b>																					
2,4,5-Trichlorophenol	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	0.16 U	1.5 U	0.16 U	0.16 U	0.19 U	0.15 U	0.66 U	0.15 U	1.5 U	0.16 U	0.15 U	0.016 U	0.079 U	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	1.1 U	10 U	1.1 U	1.1 U	1.3 U	1.0 U	4.4 U	1.0 U	9.9 U	1.0 U	1.0 U	0.11 U	0.53 U	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.033 J	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
2-Chlorophenol	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
2-Methylnaphthalene	0.021 U	0.20 U	0.022 U	0.021 U	0.025 U	0.020 U	0.97	0.020 U	0.20 U	0.021 U	0.021 U	0.15	0.089	--	--	--	--	--	--	--	--
2-Nitroaniline	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.11 U	0.053 U	--	--	--	--	--	--	--	--
2-Nitrophenol	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
3- & 4-Methylphenol Coelution	0.21 U	2.0 U	0.22 U	0.21 U	0.25 U	0.20 U	0.88 U	0.20 U	2.0 U	0.21 U	0.21 U	0.022 U	0.16	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.21 U	2.0 U	0.22 U	0.21 U	0.25 U	0.20 U	0.88 U	0.20 U	2.0 U	0.21 U	0.21 U	0.022 U	0.11 U	--	--	--	--	--	--	--	--
3-Nitroaniline	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
4,6-Dinitro-o-cresol	1.1 U	10 U	1.1 U	1.1 U	1.3 U	1.0 U	4.4 U	1.0 U	9.9 U	1.0 U	1.0 U	0.11 U	0.53 U	--	--	--	--	--	--	--	--
4-Bromophenylphenylether	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
4-Chlorophenylphenylether	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
4-Nitroaniline	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
4-Nitrophenol	1.1 U	10 U	1.1 U	1.1 U	1.3 U	1.0 U	4.4 U	1.0 U	9.9 U	1.0 U	1.0 U	0.11 U	0.53 U	--	--	--	--	--	--	--	--
Acenaphthene	0.021 U	0.20 U	0.022 U	0.021 U	0.025 U	0.020 U	1.9	0.020 U	0.20 U	0.021 U	0.021 U	0.14	0.011 U	--	--	--	--	--	--	--	--
Acenaphthylene	0.021 U	0.20 U	0.0047 J	0.0048 J	0.025 U	0.020 U	0.037 J	0.020 U	0.20 U	0.021 U	0.021 U	0.068	0.033	--	--	--	--	--	--	--	--
Anthracene	0.021 U	0.20 U	0.0099 J	0.011 J	0.025 U	0.020 U	0.13	0.020 U	0.20 U	0.021 U	0.021 U	0.40	0.031	--	--	--	--	--	--	--	--
Benz[a]anthracene	0.0083	0.39	0.041	0.033	0.0063 U	0.0030 J	0.074	0.0051 U	0.034	0.0052 U	0.0051 U	0.74	0.11	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.011 J	0.058 J	0.023 J	0.019 J	0.0063 U	0.0037 J	0.032 J	0.00047 J	0.16 J	0.0015 J	0.00061 J	0.44	0.11	--	--	--	--	--	--	--	--
Benzo[a]pyrene	0.014 J	0.13 J	0.041 J	0.037 J	0.045 J	0.0039 J	0.071 J	0.00072 J	0.22 J	0.0028 J	0.00077 J	0.78	0.12	--	--	--	--	--	--	--	--
Benzo[b]fluoranthene	0.016 J	0.10 J	0.052 J	0.044 J	0.0063 U	0.0040 J	0.070 J	0.0016 J	0.066 J	0.0031 J	0.0013 J	0.71	0.24	--	--	--	--	--	--	--	--
Benzo[k]fluoranthene	0.0051 J	0.022 J	0.016 J	0.017 J	0.0063 U	0.0037 J	0.047 J	0.0051 U	0.036 J	0.0022 J	0.00042 J	0.22	0.054	--	--	--	--	--	--	--	--
Benzo[fluoranthene	0.022 J	0.15 J	0.070 J	0.061 J	0.013 U	0.0075 J	0.094 J	0.0014 J	0.11 J	0.0052 J	0.0014 J	0.91	0.23	--	--	--	--	--	--	--	--
Benzoic Acid	2.7 U	25 U	2.7 U	2.7 U	3.2 U	2.5 U	11 U	2.5 U	25 U	2.6 U	2.6 U	0.27 U	1.3 U	--	--	--	--	--	--	--	--
Benzyl Alcohol	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
beta-Chloronaphthalene	0.021 U	0.20 U	0.022 U	0.021 U	0.025 U	0.020 U	0.088 U	0.020 U	0.20 U	0.021 U	0.021 U	0.0022 U	0.011 U	--	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
Bis(2-chloroethyl)ether	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
Bis(2-chloroisopropyl)ether	0.16 U	1.5 U	0.16 U	0.16 U	0.19 U	0.15 U	0.66 U	0.15 U	1.5 U	0.16 U	0.15 U	0.016 U	0.079 U	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	0.73 J	15 U	1.6 U	0.71 J	1.9 U	1.5 U	30 J	1.5 U	15 U	1.6 U	1.5 U	0.16 U	0.79 U	--	--	--	--	--	--	--	--
Bromobenzene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
Bromochloromethane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
Butyl Benzyl Phthlate	0.043 J	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
Carbazole	0.16 U	1.5 U	0.16 U	0.16 U	0.19 U	0.15 U	0.66 U	0.15 U	1.5 U	0.16 U	0.15 U	0.069	0.079 U	--	--	--	--	--	--	--	--
Chrysene	0.018	0.14	0.056	0.041	0.0063 U	0.0050 U	0.071	0.0051 U	0.12	0.0052 U	0.0051 U	0.75	0.17	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
Cumene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
Dibenz[a,h]anthracene	0.0054 U	0.019 J	0.0042 J	0.0092 J	0.0063 U	0.0039 J	0.0075 J	0.0010 J	0.018 J	0.0035 J	0.00038 J	0.067	0.021 U	--	--	--	--	--	--	--	--
Dibenzofuran	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.94	0.10 U	0.99 U	0.10 U	0.10 U	0.039	0.053 U	--	--	--	--	--	--	--	--
Dibromomethane (Methylene Bromide)	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
Dibutyl-n-butyl Phthalate	0.051 J	0.43 J	0.052 J	0.048 J	0.29 J	0.041 J	0.19 J	0.042 J	2.0 U	0.044 J	0.041 J	0.022 U	0.20	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
Diethyl Phthalate	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
Dimethyl Phthalate	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
Di-n-octyl Phthalate	0.21 U	2.0 U	0.22 U	0.14 J	0.25 U	0.20 U	0.58 J	0.20 U	1.4 J	0.21 U	0.14 J	0.022 U	0.11 U	--	--	--	--	--	--	--	--

Table L-1: Results for Soil Samples

Constituent	Site ID (Depth)																				
	DP01	DP02	DP03	DP04	DP05	DP06	DP07	DP08	DP09	DP10	DP11		DP11-1	DP11-2		DP11-3		DP11-4		DP11-4	
	(1-3' bgs)	(1-3' bgs)	(1-3' bgs)	(1-3' bgs)	(4-6' bgs)	(1.5-3.5' bgs)	(3-5' bgs)	(4.5-5.5' bgs)	(1-3' bgs)	(1-3' bgs)	(2-4' bgs)	(0-2' bgs)	(8-10' bgs)	(9' bgs)	(1' bgs)	(3.5' bgs)	(9' bgs)	(3' bgs)	(9' bgs)	(1.5' bgs)	(3' bgs)
<b>Semi-Volatile Organic Compounds (mg/kg)</b>																					
Fluoranthene	0.023	0.10 J	0.078	0.044	0.025 U	0.020 U	0.43	0.020 U	0.20 U	0.021 U	0.021 U	1.3	0.23	--	--	--	--	--	--	--	--
Fluorene	0.021 U	0.20 U	0.022 U	0.011 J	0.025 U	0.020 U	1.1	0.020 U	0.20 U	0.021 U	0.021 U	0.24	0.027	--	--	--	--	--	--	--	--
Hexachlorobenzene	0.054 U	0.50 U	0.054 U	0.053 U	0.063 U	0.050 U	0.22 U	0.051 U	0.50 U	0.052 U	0.051 U	0.0055 U	0.026 U	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.054 U	0.079 U	0.054 U	0.053 U	0.063 U	0.050 U	0.22 U	0.051 U	0.075 U	0.052 U	0.051 U	0.0055 U	0.026 U	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
Hexachloroethane	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
Indeno[1,2,3-cd]pyrene	0.012 J	0.025 J	0.025 J	0.024 J	0.0063 U	0.0054 J	0.041 J	0.00066 J	0.034 J	0.0025 J	0.00058 J	0.46	0.10	--	--	--	--	--	--	--	--
Isophorone	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
Naphthalene	0.021 U	0.014 J	0.0088 J	0.0086 J	0.018 J	0.020 U	140	0.020 U	0.11	0.021 U	0.021 U	0.21	0.26 J	--	--	--	--	--	--	--	--
n-Butylbenzene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
Nitrobenzene	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
N-Nitroso-di-N-propylamine	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	0.054 U	0.50 U	0.054 U	0.053 U	0.063 U	0.050 U	0.22 U	0.051 U	0.50 U	0.052 U	0.051 U	0.0055 U	0.026 U	--	--	--	--	--	--	--	--
o-Chlorotoluene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
o-Cresol	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
p-Chloroaniline	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
p-chloro-m-Cresol	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
p-Chlorotoluene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
p-Cresol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.036	0.12	--	--	--	--	--	--	--	--
Phenanthrene	0.027	0.18 J	0.021 J	0.024	0.025 U	0.020 U	1.6	0.020 U	0.20 U	0.021 U	0.021 U	1.6	0.24	--	--	--	--	--	--	--	--
Phenol	0.11 U	1.0 U	0.11 U	0.11 U	0.13 U	0.10 U	0.44 U	0.10 U	0.99 U	0.10 U	0.10 U	0.011 U	0.053 U	--	--	--	--	--	--	--	--
Propyl benzene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
Pyrene	0.025	0.34	0.081	0.053	0.025 U	0.020 U	0.45	0.020 U	0.29	0.021 U	0.021 U	1.7	0.23	--	--	--	--	--	--	--	--
sec-Butylbenzene	0.080 U	0.037 J	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
tert-Butylbenzene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
Trichlorofluoromethane	0.080 U	0.079 U	0.065 U	0.072 U	0.12 U	0.064 U	3.7 U	0.075 U	0.075 U	0.069 U	0.060 U	0.051 U	0.33 U	--	--	--	--	--	--	--	--
Total cPAHs <sup>(1)</sup>	0.019 J	0.19 J	0.055 J	0.050 J	0.047 J	0.0059 J	0.096 J	0.0016 J	0.24 J	0.0042 J	0.0013 J	1.0	0.17	--	--	--	--	--	--	--	--
Total Naphthalenes	0.074 U	0.26 J	0.036 J	0.035 J	0.0495 J	0.070 U	142	0.070 U	0.36	0.073 U	0.073 U	0.46	0.40 J	--	--	--	--	--	--	--	--
<b>Total Dioxins/Furans (ng/kg)</b>																					
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Dioxins/Furans <sup>(1)</sup>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table L-1: Results for Soil Samples

Constituent	Site ID (Depth)																					
	DP01	DP02	DP03	DP04	DP05	DP06	DP07	DP08	DP09	DP10	DP11		DP11-1	DP11-2			DP11-3		DP11-4		DP11-4	
	(1-3' bgs)	(1-3' bgs)	(1-3' bgs)	(1-3' bgs)	(4-6' bgs)	(1.5-3.5' bgs)	(3-5' bgs)	(4.5-5.5' bgs)	(1-3' bgs)	(1-3' bgs)	(2-4' bgs)	(0-2' bgs)	(8-10' bgs)	(9' bgs)	(1' bgs)	(3.5' bgs)	(9' bgs)	(3' bgs)	(9' bgs)	(1.5' bgs)	(3' bgs)	(9' bgs)
<b>Polychlorinated Biphenyls (mg/kg)</b>																						
Aroclor 1016	0.010 U	0.010 U	0.010 U	0.011 U	0.013 U	0.010 U	0.023 U	0.0099 U	0.011 U	0.010 U	0.011 U	<i>0.11 U</i>	<i>0.54 U</i>	--	--	--	--	--	--	--	--	
Aroclor 1221	0.010 U	0.010 U	0.010 U	0.011 U	0.013 U	0.010 U	0.023 U	0.0099 U	0.011 U	0.010 U	0.011 U	<i>0.11 U</i>	<i>0.54 U</i>	--	--	--	--	--	--	--	--	
Aroclor 1232	0.010 U	0.010 U	0.010 U	0.011 U	0.013 U	0.010 U	0.023 U	0.0099 U	0.011 U	0.010 U	0.011 U	<i>0.11 U</i>	<i>0.54 U</i>	--	--	--	--	--	--	--	--	
Aroclor 1242	0.010 U	0.010 U	0.010 U	0.011 U	0.013 U	0.010 U	0.023 U	0.0099 U	0.011 U	0.010 U	0.011 U	<i>0.11 U</i>	<i>0.54 U</i>	--	--	--	--	--	--	--	--	
Aroclor 1248	0.010 U	0.010 U	0.010 U	0.011 U	0.013 U	0.010 U	0.023 U	0.0099 U	0.011 U	0.010 U	0.011 U	<i>0.11 U</i>	<i>0.54 U</i>	--	--	--	--	--	--	--	--	
Aroclor 1254	0.010 U	0.010 U	0.010 U	0.011 U	0.013 U	0.010 U	0.023 U	0.0099 U	0.011 U	0.010 U	0.011 U	<i>0.11 U</i>	<i>0.54 U</i>	--	--	--	--	--	--	--	--	
Aroclor 1260	0.010 U	0.010 U	0.0080 J	0.011 U	0.013 U	0.010 U	0.023 U	0.0099 U	0.027	0.010 U	0.011 U	<i>0.11 U</i>	<i>0.54 U</i>	--	--	--	--	--	--	--	--	
<b>Metals (mg/kg)</b>																						
Arsenic	5.7	3.7	4.4	3.8	52	1.7	5.8	2.9	1.8	3.3	2.0	<i>2.8</i>	<i>14</i>	2.7 J	2.1 J	2.5	7.1 J	3.6 J	2.6	3.7 J	3.6 J	4.1 J
Barium	52	47	59	29	130	32	50	22	110	35	44	<i>56 J</i>	<i>97 J</i>	--	--	--	--	--	--	--	--	--
Cadmium	0.046 J	0.19 U	0.17 J	0.18 J	5.2	0.18 U	0.31 J	0.023 J	0.24	0.20 U	0.18 U	<i>0.25 U</i>	<i>1.2 U</i>	--	--	--	--	--	--	--	--	--
Chromium (VI)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Total	19	12	18	22	120	15	23	16	13	26	23	<i>19</i>	<i>8.8</i>	--	--	--	--	--	--	--	--	--
Copper	--	--	--	--	--	--	--	--	--	--	--	--	--	15	15	21	28	22	12	20	19	28
Lead	38 J	12 J	19 J	12 J	140 J	2.2 J	48 J	1.5 J	37 J	2.5 J	2.6 J	<i>8.2</i>	<i>2,500</i>	6.4	4.6	108	56	8.9	3.2	7.6	4.9	153
Mercury	0.015 J	0.014 U	0.070	0.019	0.049	0.019	0.056	0.011 J	0.038	0.033	0.019 U	<i>0.019 U</i>	<i>0.095 U</i>	--	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	--	--	--	--	--	--	--	--	--	30	28	19	4.5 J	36	28	29	32	4.3 J
Selenium	2.0 J	3.4	1.3 J	2.7	73	2.2 J	2.8 J	0.44 J	2.5	2.6	2.9	<i>1.2 UJ</i>	<i>4.0 J</i>	--	--	--	--	--	--	--	--	--
Silver	0.52 U	0.46 U	0.54 U	0.50 U	2.0	0.45 U	1.2 U	0.42 U	0.45 U	0.49 U	0.46 U	<i>0.50 U</i>	<i>0.66 J</i>	--	--	--	--	--	--	--	--	--

Notes:

--: Not analyzed

Results that are italicized are no longer in place.

Qualifier

- B: Less than 10x higher than the method blank level
- CON: Confirmation analysis
- D: Result obtained from analysis of diluted sample
- E: Exceeds calibration range
- I: Interference present
- J: Estimated value
- P: Polychlorinated diphenyl ether interference
- U: Not detected at shown concentration

Results are shown as two significant figures in standard notation with the exception that numbers greater than 100 are rounded to a whole number and dioxins/furans are shown in scientific notation to two significant figures.

<sup>(1)</sup> Compound totaling was performed in accordance with Ecology's amendments to MTCA (Ecology 2001a). For congeners that occur at the Site (detected in any medium), but not detected in that sample, a value of half the detection limit was assigned. For congeners that do not occur at the Site (not detected in any medium), a value of zero was assigned. In the case of cPAHs, all congeners were detected at least once in soil and groundwater. In the case of total dioxins/furans, all congeners were detected at least once in soil. Therefore, cPAHs and total dioxins/furans that were not detected were assigned a value of half the detection limit.

Table L-1: Results for Soil Samples

Constituent	Site ID (Depth)																			
	MW24S				MW25S				P-1-B	P-1-E	P-1-N	P-1-S	P-1-W	SVP-1SO	SVP-2SO	TP01	TP02	TP02-1	TP02-2	
	(1-2.5' bgs)	(3-4.5' bgs)	(6.5-8' bgs)	(9-10' bgs)	(6.5-7.5' bgs)	(10.5-12' bgs)	(12.4-14' bgs)	(12.5-14' bgs)	(7' bgs)	(2.5' bgs)	(3' bgs)	(3' bgs)	(2.5' bgs)	(3-5' bgs)	(4-6' bgs)	(2-2.5' bgs)	(2-2.5' bgs)	(10' bgs)	(1.5' bgs)	(2.5' bgs)
<b>Total Petroleum Hydrocarbons (mg/kg)</b>																				
TPH-D	--	--	25 U	25 U	25 U	25 U	--	25 U	131	45	419	25 U	370	--	--	--	--	--	--	--
TPH-G	--	--	5.0 U	5.0 U	5.0 U	5.0 U	--	5.0 U	--	--	--	--	--	5.0 U	1,100	--	--	--	--	--
TPH-HO	--	--	494	418	2,020	1,070	--	25 U	172	92	1,710	100 U	965	--	--	--	--	--	--	--
<b>Volatile Organic Compounds (mg/kg)</b>																				
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-cis-Dichloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0050 U	0.0050 U	--	--	--	--	--
1,2-Dichloropropane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-trans-Dichloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	--	--	0.050 U	0.050 U	0.05 UJ	0.050 U	--	0.050 U	--	--	--	--	--	0.0050 U	0.0050 U	--	--	--	--	--
Bromodichloromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromoform	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon Tetrachloride	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethyl Chloride	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	0.10 U	0.10 U	0.10 UJ	0.10 U	--	0.10 U	--	--	--	--	--	0.0050 U	0.12	--	--	--	--	--
m&p-Xylene	--	--	0.10 U	0.10 U	0.10 UJ	0.10 U	--	0.10 U	--	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	--	--	0.10 U	0.10 U	0.10 UJ	0.10 U	--	0.10 U	--	--	--	--	--	0.0050 U	0.15	--	--	--	--	--
p-Isopropyltoluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	--	--	0.10 U	0.10 U	0.10 UJ	0.10 U	--	0.10 U	--	--	--	--	--	0.0050 U	0.0050 U	--	--	--	--	--
Total Xylenes	--	--	0.20 U	0.20 U	0.20 UJ	0.20 U	--	0.20 U	--	--	--	--	--	0.0050 U	0.15	--	--	--	--	--
Trichloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl Chloride	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Semi-Volatile Organic Compounds (mg/kg)</b>																				
1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloropropene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0095	0.94	--	--	--	--	--
1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0010 U	0.0010 U	--	--	--	--	--
1,2-Dichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0050 U	0.29	--	--	--	--	--
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	--	--	0.020	0.020	0.010	0.010 U	0.010 U	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2-Dichloropropane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

MW24S Excavation

DP06/SVP-2SO Excavation

Table L-1: Results for Soil Samples

Constituent	Site ID (Depth)																		
	MW24S				MW25S				P-1-B	P-1-E	P-1-N	P-1-S	P-1-W	SVP-1SO	SVP-2SO	TP01	TP02	TP02-1	TP02-2
	(1-2.5' bgs)	(3-4.5' bgs)	(6.5-8' bgs)	(9-10' bgs)	(6.5-7.5' bgs)	(10.5-12' bgs)	(12.4-14' bgs)	(12.5-14' bgs)	(7' bgs)	(2.5' bgs)	(3' bgs)	(3' bgs)	(2.5' bgs)	(3-5' bgs)	(4-6' bgs)	(2-2.5' bgs)	(2-2.5' bgs)	(10' bgs)	(1.5' bgs)
<b>Semi-Volatile Organic Compounds (mg/kg)</b>																			
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	0.040	0.030	0.030	0.023	0.010 U	--	0.050 U	0.010 U	0.011	0.025	0.010 U	--	--	--	--	--	--
2-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3- & 4-Methylphenol Coelution	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,6-Dinitro-o-cresol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenylphenylether	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenylphenylether	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	--	--	--	--	--	--	--	--	0.050 U	0.010 U	0.010 U	0.021	0.010 U	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	0.050 U	0.010 U	0.010 U	0.018	0.010 U	--	--	--	--	--	--
Anthracene	--	--	--	--	--	--	--	--	0.050 U	0.010 U	0.013	0.097	0.010 U	--	--	--	--	--	--
Benz[a]anthracene	--	--	0.50	0.080	0.33	0.070	0.020	--	0.050 U	0.010 U	0.031	0.11	0.018	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	0.050 U	0.010 U	0.064	0.054	0.010 U	--	--	--	--	--	--
Benzo[a]pyrene	--	--	0.70	0.20	0.42	0.010 U	0.12	--	0.050 U	0.010 U	0.010 U	0.093	0.010 U	--	--	--	--	--	--
Benzo[b]fluoranthene	--	--	0.42	0.020	0.35	0.010 U	0.010 U	--	0.050 U	0.010 U	0.093	0.13	0.010 U	--	--	--	--	--	--
Benzo[k]fluoranthene	--	--	0.21	0.030	0.11	0.020	0.010 U	--	0.050 U	0.010 U	0.010 U	0.052	0.010 U	--	--	--	--	--	--
Benzo[fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzoic Acid	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzyl Alcohol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
beta-Chloronaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroethyl)ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroisopropyl)ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromochloromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl Benzyl Phthlate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	--	--	0.58	0.060	0.48	0.10	0.010 U	--	0.050 U	0.010 U	0.069	0.12	0.054	--	--	--	--	--	--
cis-1,3-Dichloropropene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cumene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenz[a,h]anthracene	--	--	0.21	0.14	0.15	0.010 U	0.10	--	0.050 U	0.010 U	0.010 U	0.010 U	0.010 U	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromomethane (Methylene Bromide)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibutyl-n-butyl Phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethyl Phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethyl Phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl Phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

MW24S Excavation

DP06/SVP-2SO Excavation



Table L-1: Results for Soil Samples

Constituent	Site ID (Depth)																			
	MW24S				MW25S				P-1-B	P-1-E	P-1-N	P-1-S	P-1-W	SVP-1SO	SVP-2SO	TP01	TP02	TP02-1	TP02-2	
	(1-2.5' bgs)	(3-4.5' bgs)	(6.5-8' bgs)	(9-10' bgs)	(6.5-7.5' bgs)	(10.5-12' bgs)	(12.4-14' bgs)	(12.5-14' bgs)	(7' bgs)	(2.5' bgs)	(3' bgs)	(3' bgs)	(2.5' bgs)	(3-5' bgs)	(4-6' bgs)	(2-2.5' bgs)	(2-2.5' bgs)	(10' bgs)	(1.5' bgs)	(2.5' bgs)
<b>Semi-Volatile Organic Compounds (mg/kg)</b>																				
Fluoranthene	--	--	--	--	--	--	--	--	0.050 U	0.010 U	0.053	0.21	0.038	--	--	--	--	--	--	--
Fluorene	--	--	--	--	--	--	--	--	0.050 U	0.010 U	0.010	0.024	0.010 U	--	--	--	--	--	--	--
Hexachlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno[1,2,3-cd]pyrene	--	--	0.60	0.36	0.45	0.34	0.010 U	--	0.050 U	0.010 U	0.038	0.047	0.010 U	--	--	--	--	--	--	--
Isophorone	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	--	--	0.050	0.15	0.19	0.020	0.010 U	--	0.050 U	0.010 U	0.015	0.039	0.010 U	0.42	150	--	--	--	--	--
n-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitroso-di-N-propylamine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Chlorotoluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Cresol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
p-Chloroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
p-chloro-m-Cresol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
p-Chlorotoluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
p-Cresol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	0.050 U	0.010 U	0.050	0.23	0.041	--	--	--	--	--	--	--
Phenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Propyl benzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	--	--	--	--	--	--	--	--	0.050 U	0.010 U	0.069	0.27	0.049	--	--	--	--	--	--	--
sec-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAHs <sup>(1)</sup>	--	--	0.90	0.26	0.56	0.050	0.13	--	0.076 U	0.015 U	0.023	0.13	0.0093	--	--	--	--	--	--	--
Total Naphthalenes	--	--	0.11	0.20	0.23	0.048	0.030 U	--	0.10 U	0.020 U	0.026	0.064	0.020 U	0.42	150	--	--	--	--	--
<b>Total Dioxins/Furans (ng/kg)</b>																				
1,2,3,4,6,7,8-HpCDD	30	83	13,000	240	--	--	--	--	--	--	--	--	--	--	--	8,800 D	6,700 D	0.51	4,600	210
1,2,3,4,6,7,8-HpCDF	5.0 J	25	2,000	70	--	--	--	--	--	--	--	--	--	--	--	3,100 D	2,600 D	0.085 U	2,000	63
1,2,3,4,7,8,9-HpCDF	0.69 U	1.7 J	190	8.6 J	--	--	--	--	--	--	--	--	--	--	--	210 D	270 D	0.11 U	160	5.4
1,2,3,4,7,8-HxCDD	0.50 U	1.7 J	260	20	--	--	--	--	--	--	--	--	--	--	--	85	59	0.10 U	36	2.1
1,2,3,4,7,8-HxCDF	0.46 U	0.30 UI	430	17	--	--	--	--	--	--	--	--	--	--	--	460	1,800	0.099 U	320	21
1,2,3,6,7,8-HxCDD	1.1 J	4.8 J	550	31	--	--	--	--	--	--	--	--	--	--	--	380	420	0.086 U	170	6.8
1,2,3,6,7,8-HxCDF	0.47 U	2.0 J	3.4 UE	15	--	--	--	--	--	--	--	--	--	--	--	150	330	0.10 U	1.9 U	4.5
1,2,3,7,8,9-HxCDD	0.68 J	3.4 J	400	28	--	--	--	--	--	--	--	--	--	--	--	150	110	0.098 U	78	3.9
1,2,3,7,8,9-HxCDF	0.55 U	0.48 J	120	6.2 J	--	--	--	--	--	--	--	--	--	--	--	9.1	19	0.11 U	66	2.7
1,2,3,7,8-PeCDD	0.36 U	2.3 J	390	39	--	--	--	--	--	--	--	--	--	--	--	69	53	0.13 U	19	1.7
1,2,3,7,8-PeCDF	0.42 U	0.31 UI	120	25	--	--	--	--	--	--	--	--	--	--	--	54	130	0.16 U	19	1.5
2,3,4,6,7,8-HxCDF	0.43 U	2.1 J	250	16	--	--	--	--	--	--	--	--	--	--	--	90	140	0.081 U	59	3.7
2,3,4,7,8-PeCDF	0.36 U	2.5 J	360	31	--	--	--	--	--	--	--	--	--	--	--	130	550	0.094 U	110	6.2
2,3,7,8-TCDD	0.33 U	0.13 UI	76	10.0	--	--	--	--	--	--	--	--	--	--	--	24	9.3	0.17 U	3.3	0.22
2,3,7,8-TCDF	0.48 U	2.0	210	32	--	--	--	--	--	--	--	--	--	--	--	25 CON	55 CON	0.14 U	11	0.75
OCDD	280	610	85,000	780	--	--	--	--	--	--	--	--	--	--	--	66,000 D	82,000 D	3.6	50,000	1,900
OCDF	11	110	7,400	170	--	--	--	--	--	--	--	--	--	--	--	12,000 D	2,900 D	0.41	6,800	330
Total Dioxins/Furans <sup>(1)</sup>	1.2 J	6.1 J	979	79 J	--	--	--	--	--	--	--	--	--	--	--	430 DCON	646 DCON	0.21	215	12



Table L-1: Results for Soil Samples

Constituent	Site ID (Depth)																			
	MW24S				MW25S				P-1-B	P-1-E	P-1-N	P-1-S	P-1-W	SVP-1SO	SVP-2SO	TP01	TP02	TP02-1	TP02-2	
	(1-2.5' bgs)	(3-4.5' bgs)	(6.5-8' bgs)	(9-10' bgs)	(6.5-7.5' bgs)	(10.5-12' bgs)	(12.4-14' bgs)	(12.5-14' bgs)	(7' bgs)	(2.5' bgs)	(3' bgs)	(3' bgs)	(2.5' bgs)	(3-5' bgs)	(4-6' bgs)	(2-2.5' bgs)	(2-2.5' bgs)	(10' bgs)	(1.5' bgs)	(2.5' bgs)
<b>Polychlorinated Biphenyls (mg/kg)</b>																				
Aroclor 1016	--	--	--	--	--	--	--	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	--	--	--	--	--	--	--
Aroclor 1221	--	--	--	--	--	--	--	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	--	--	--	--	--	--	--
Aroclor 1232	--	--	--	--	--	--	--	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	--	--	--	--	--	--	--
Aroclor 1242	--	--	--	--	--	--	--	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	--	--	--	--	--	--	--
Aroclor 1248	--	--	--	--	--	--	--	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	--	--	--	--	--	--	--
Aroclor 1254	--	--	--	--	--	--	--	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	--	--	--	--	--	--	--
Aroclor 1260	--	--	--	--	--	--	--	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	--	--	--	--	--	--	--
<b>Metals (mg/kg)</b>																				
Arsenic	--	--	1.8	4.8	4.1	4.9	--	3.1	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	0.76	0.54	0.75	0.52	--	0.32	--	--	--	--	--	--	--	--	--	--	--	--
Chromium (VI)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Total	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	54	34	108	17	--	2.5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Notes:**

--: Not analyzed

Results that are italicized are no longer in place.

Qualifier

- B: Less than 10x higher than the method blank level
- CON: Confirmation analysis
- D: Result obtained from analysis of diluted sample
- E: Exceeds calibration range
- I: Interference present
- J: Estimated value
- P: Polychlorinated diphenyl ether interference
- U: Not detected at shown concentration

Results are shown as two significant figures in standard notation with the exception that numbers greater than 100 are rounded to a whole number and dioxins/furans are shown in scientific notation to two significant figures.

<sup>(1)</sup> Compound totaling was performed in accordance with Ecology's amendments to MTCA (Ecology 2001a). For congeners that occur at the Site (detected in any medium), but not detected in that sample, a value of half the detection limit was assigned. For congeners that do not occur at the Site (not detected in any medium), a value of zero was assigned. In the case of cPAHs, all congeners were detected at least once in soil and groundwater. In the case of total dioxins/furans, all congeners were detected at least once in soil. Therefore, cPAHs and total dioxins/furans that were not detected were assigned a value of half the detection limit.

**Lab Report(s) Associated with  
Sample Locations DP04 and DP06**



## ANALYTICAL REPORT

Job Number: 580-3718-1

Job Description: Rants Group

For:  
GeoEngineers Inc  
1101 Fawcett, Suite 200  
Tacoma, WA 98402

Attention: Kevin M Broom

A handwritten signature in cursive script, appearing to read "H Curbow".

---

Heather Curbow  
Project Mgmt. Assistant  
hcurbow@stl-inc.com  
10/23/2006  
Revision: 1

Project Manager: Heather Curbow

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**Severn Trent Laboratories, Inc.**

STL Seattle 5755 8th Street East, Tacoma, WA 98424  
Tel (253) 922-2310 Fax (253) 922-5047 www.stl-inc.com

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## Case Narrative for job: 580-J3718-1

Client: GeoEngineers Inc

Date: 10/23/2006

### **SEMIVOLATILE 8270C SIM cPAH-solid**

The recovery of the surrogate Terphenyl-d14 in sample 580-3718-11 exceeded quality control limits. All other surrogates were within control limits. No further action was taken on this outlier.

### **PCB-1**

The recovery of the surrogate DCB Decachlorobiphenyl in samples 580-3718-7 and 580-3718-3 exceeded quality control limits. All other surrogates were within control limits. No further action was taken on this outlier.

### **PCB-2**

Recovery of the surrogate DCB Decachlorobiphenyl in sample 580-3718-4 and both Tetrachloro-m-xylene and DCB Decachlorobiphenyl in sample 580-3718-1 exceeded quality control limits due to matrix interference.

## **Semivolatile GC**

LCS recoveries out of control

NWTPH-Dx

LCS for motor oil failed high. LCSD for motor oil was acceptable

### **Affected Items**

LCS 580-11251/2-B

Batch: 580-11354

Method: 580-NWTPH\_Dx

## **Volatile Organics**

LCS recoveries out of control

5035\_FM/8260B:

Chloroethane recovery suppressed by the increased amount of methanol in med. soil prep. Trichlorofluoromethane passed in lcs and failed low in lcsd. 2-2-dichloropropane failed high in the lcsd - samples ND.

### **Affected Items**

LCS 580-11480/2-A

Batch: 580-11569

Method: 580-8260B

LCSD 580-11480/3-A

Batch: 580-11569

Method: 580-8260B

## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
<b>580-3718-1</b>	<b>DP04-060925-010</b>					
Naphthalene		6.5	J	72	ug/Kg	8260B
Benzo[a]anthracene		33		5.3	ug/Kg	8270C
Chrysene		41		5.3	ug/Kg	8270C
Benzo[fluoranthene		61	B	11	ug/Kg	8270C
Benzo[a]pyrene		37	B	5.3	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		24	B	5.3	ug/Kg	8270C
Dibenz(a,h)anthracene		9.2	B	5.3	ug/Kg	8270C
Benzo[g,h,i]perylene		19	B	5.3	ug/Kg	8270C
Naphthalene		8.6	J	21	ug/Kg	8270C
Benzo[b]fluoranthene		44	B	5.3	ug/Kg	8270C
Benzo[k]fluoranthene		17	B	5.3	ug/Kg	8270C
Acenaphthylene		4.8	J	21	ug/Kg	8270C
Fluorene		11	J	21	ug/Kg	8270C
Phenanthrene		24		21	ug/Kg	8270C
Anthracene		11	J	21	ug/Kg	8270C
Di-n-butyl phthalate		48	J B	210	ug/Kg	8270C
Fluoranthene		44		21	ug/Kg	8270C
Pyrene		53		21	ug/Kg	8270C
Benzo[a]anthracene		32		27	ug/Kg	8270C
Chrysene		45		27	ug/Kg	8270C
Bis(2-ethylhexyl) phthalate		710	J	1600	ug/Kg	8270C
Di-n-octyl phthalate		140	J	210	ug/Kg	8270C
Benzo[fluoranthene		76		43	ug/Kg	8270C
Benzo[a]pyrene		46	B	32	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		35	J	43	ug/Kg	8270C
Dibenz(a,h)anthracene		63		43	ug/Kg	8270C
Benzo[g,h,i]perylene		35		27	ug/Kg	8270C
Gasoline		1.6	J	7.2	mg/Kg	NWTPH-Gx
Motor Oil (>C24-C36)		77		53	mg/Kg	NWTPH-Dx
#2 Diesel (C10-C24)		25	J	26	mg/Kg	NWTPH-Dx
Barium		29		0.25	mg/Kg	6010B
Chromium		22		0.50	mg/Kg	6010B
Selenium		2.7		2.5	mg/Kg	6010B
Arsenic		3.8		0.20	mg/Kg	6020
Lead		12	B	0.20	mg/Kg	6020
Cadmium		0.18	J	0.20	mg/Kg	6020
Mercury		0.019		0.016	mg/Kg	7471A

## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>580-3718-2</b>	<b>DP04-060925-040</b>				
Naphthalene		12 J	120	ug/Kg	8260B
Benzo[a]pyrene		45 B	6.3	ug/Kg	8270C
Naphthalene		18 J	25	ug/Kg	8270C
Di-n-butyl phthalate		290 B	250	ug/Kg	8270C
Gasoline		13	12	mg/Kg	NWTPH-Gx
Motor Oil (>C24-C36)		7200	320	mg/Kg	NWTPH-Dx
#2 Diesel (C10-C24)		3900	32	mg/Kg	NWTPH-Dx
Barium		130	0.31	mg/Kg	6010B
Chromium		120	0.61	mg/Kg	6010B
Selenium		73	3.1	mg/Kg	6010B
Silver		2.0	0.61	mg/Kg	6010B
Arsenic		52	0.25	mg/Kg	6020
Lead		140 B	0.25	mg/Kg	6020
Cadmium		5.2	0.25	mg/Kg	6020
Mercury		0.049	0.022	mg/Kg	7471A

## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>580-3718-3</b>	<b>DP04-060925-W</b>				
Toluene		0.37 J	1.0	ug/L	8260B
Ethylbenzene		0.36 J	1.0	ug/L	8260B
m-Xylene & p-Xylene		1.1 J	2.0	ug/L	8260B
o-Xylene		0.40 J	1.0	ug/L	8260B
Benzyl alcohol		0.22 J	2.0	ug/L	8270C
Benzo[a]anthracene		0.054 J B	0.10	ug/L	8270C
Chrysene		0.028 J	0.10	ug/L	8270C
Benzofluoranthene		0.10 J B	0.20	ug/L	8270C
Benzo[a]pyrene		0.073 J	0.20	ug/L	8270C
Indeno[1,2,3-cd]pyrene		0.072 J B	0.10	ug/L	8270C
Dibenz(a,h)anthracene		0.056 J B	0.10	ug/L	8270C
Benzo[g,h,i]perylene		0.051 J B	0.10	ug/L	8270C
Benzoic acid		5.4 J	10	ug/L	8270C
Benzo[b]fluoranthene		0.056 J B	0.10	ug/L	8270C
Benzo[k]fluoranthene		0.043 J B	0.10	ug/L	8270C
Dimethyl phthalate		0.14 J	2.0	ug/L	8270C
Acenaphthene		0.081 J	0.51	ug/L	8270C
Diethyl phthalate		1.0 J	2.0	ug/L	8270C
Fluorene		0.10 J	0.30	ug/L	8270C
Phenanthrene		0.14 J	0.40	ug/L	8270C
Anthracene		0.028 J	0.20	ug/L	8270C
Di-n-butyl phthalate		1.1 J B	2.0	ug/L	8270C
Fluoranthene		0.070 J	0.25	ug/L	8270C
Pyrene		0.10 J	0.30	ug/L	8270C
Bis(2-ethylhexyl) phthalate		0.42 J	15	ug/L	8270C
Gasoline		0.026 J	0.050	mg/L	NWTPH-Gx
PCB-1260		0.089 J	0.10	ug/L	8082
Motor Oil (>C24-C36)		3.8 *	0.51	mg/L	NWTPH-Dx
#2 Diesel (C10-C24)		2.0	0.26	mg/L	NWTPH-Dx
Mercury		0.00014 J	0.00020	mg/L	7470A
<b>Total Recoverable</b>					
Barium		0.041 B	0.0050	mg/L	6010B
Lead		0.000080 J B	0.0020	mg/L	6020

## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
<b>580-3718-4</b>	<b>DP03-060925-010</b>					
Naphthalene		4.6	J	65	ug/Kg	8260B
Benzo[a]anthracene		41		5.4	ug/Kg	8270C
Chrysene		56		5.4	ug/Kg	8270C
Benzo[fluoranthene		70	B	11	ug/Kg	8270C
Benzo[a]pyrene		41	B	5.4	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		25	B	5.4	ug/Kg	8270C
Dibenz(a,h)anthracene		4.2	J B	5.4	ug/Kg	8270C
Benzo[g,h,i]perylene		23	B	5.4	ug/Kg	8270C
Naphthalene		8.8	J	22	ug/Kg	8270C
Benzo[b]fluoranthene		52	B	5.4	ug/Kg	8270C
Benzo[k]fluoranthene		16	B	5.4	ug/Kg	8270C
Acenaphthylene		4.7	J	22	ug/Kg	8270C
Phenanthrene		21	J	22	ug/Kg	8270C
Anthracene		9.9	J	22	ug/Kg	8270C
Di-n-butyl phthalate		52	J B	220	ug/Kg	8270C
Fluoranthene		78		22	ug/Kg	8270C
Pyrene		81		22	ug/Kg	8270C
Benzo[a]anthracene		53		27	ug/Kg	8270C
Chrysene		58		27	ug/Kg	8270C
Benzo[fluoranthene		100		43	ug/Kg	8270C
Benzo[a]pyrene		51	B	32	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		40	J	43	ug/Kg	8270C
Dibenz(a,h)anthracene		66		43	ug/Kg	8270C
Benzo[g,h,i]perylene		48		27	ug/Kg	8270C
Gasoline		1.7	J	6.5	mg/Kg	NWTPH-Gx
PCB-1260		0.0080	J	0.010	mg/Kg	8082
Motor Oil (>C24-C36)		620		53	mg/Kg	NWTPH-Dx
#2 Diesel (C10-C24)		77		27	mg/Kg	NWTPH-Dx
Barium		59		0.27	mg/Kg	6010B
Chromium		18		0.54	mg/Kg	6010B
Selenium		1.3	J	2.7	mg/Kg	6010B
Arsenic		4.4		0.22	mg/Kg	6020
Lead		19	B	0.22	mg/Kg	6020
Cadmium		0.17	J	0.22	mg/Kg	6020
Mercury		0.070		0.014	mg/Kg	7471A



## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
<b>580-3718-5</b>	<b>DP02-060925-010</b>					
sec-Butylbenzene		37	J	79	ug/Kg	8260B
Naphthalene		14	J	79	ug/Kg	8260B
Benzo[a]anthracene		390		5.0	ug/Kg	8270C
Chrysene		140		5.0	ug/Kg	8270C
Benzo[fluoranthene		150	B	10	ug/Kg	8270C
Benzo[a]pyrene		130	B	5.0	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		25	B	5.0	ug/Kg	8270C
Dibenz(a,h)anthracene		19	B	5.0	ug/Kg	8270C
Benzo[g,h,i]perylene		58	B	5.0	ug/Kg	8270C
Benzo[b]fluoranthene		100	B	5.0	ug/Kg	8270C
Benzo[k]fluoranthene		22	B	5.0	ug/Kg	8270C
Phenanthrene		180	J	200	ug/Kg	8270C
Di-n-butyl phthalate		430	J B	2000	ug/Kg	8270C
Fluoranthene		100	J	200	ug/Kg	8270C
Pyrene		340		200	ug/Kg	8270C
Chrysene		560		250	ug/Kg	8270C
Benzo[g,h,i]perylene		350		250	ug/Kg	8270C
Gasoline		24		7.9	mg/Kg	NWTPH-Gx
Motor Oil (>C24-C36)		9900		500	mg/Kg	NWTPH-Dx
#2 Diesel (C10-C24)		580		250	mg/Kg	NWTPH-Dx
Barium		47		0.23	mg/Kg	6010B
Chromium		12		0.46	mg/Kg	6010B
Selenium		3.4		2.3	mg/Kg	6010B
Arsenic		3.7		0.19	mg/Kg	6020
Lead		12	B	0.19	mg/Kg	6020

## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>580-3718-6</b>	<b>DP01-060925-010</b>				
Benzo[a]anthracene		8.3	5.4	ug/Kg	8270C
Chrysene		18	5.4	ug/Kg	8270C
Benzo[fluoranthene		22	11	ug/Kg	8270C
Benzo[a]pyrene		14	5.4	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		12	5.4	ug/Kg	8270C
Benzo[g,h,i]perylene		11	5.4	ug/Kg	8270C
Benzo[b]fluoranthene		16	5.4	ug/Kg	8270C
Benzo[k]fluoranthene		5.1	5.4	ug/Kg	8270C
Phenanthrene		27	21	ug/Kg	8270C
Di-n-butyl phthalate		51	210	ug/Kg	8270C
Fluoranthene		23	21	ug/Kg	8270C
Pyrene		25	21	ug/Kg	8270C
Butyl benzyl phthalate		43	110	ug/Kg	8270C
Bis(2-ethylhexyl) phthalate		730	1600	ug/Kg	8270C
Benzo[a]pyrene		28	32	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		29	43	ug/Kg	8270C
Benzo[g,h,i]perylene		33	27	ug/Kg	8270C
Gasoline		2.5	8.0	mg/Kg	NWTPH-Gx
Motor Oil (>C24-C36)		100	54	mg/Kg	NWTPH-Dx
#2 Diesel (C10-C24)		22	27	mg/Kg	NWTPH-Dx
Barium		52	0.26	mg/Kg	6010B
Chromium		19	0.52	mg/Kg	6010B
Selenium		2.0	2.6	mg/Kg	6010B
Arsenic		5.7	0.21	mg/Kg	6020
Lead		38	0.21	mg/Kg	6020
Cadmium		0.046	0.21	mg/Kg	6020
Mercury		0.015	0.018	mg/Kg	7471A

## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
<b>580-3718-7</b>	<b>DP01-060925-W</b>					
Toluene		0.86	J	1.0	ug/L	8260B
Ethylbenzene		0.40	J	1.0	ug/L	8260B
m-Xylene & p-Xylene		1.5	J	2.0	ug/L	8260B
o-Xylene		0.96	J	1.0	ug/L	8260B
Isopropylbenzene		0.095	J	1.0	ug/L	8260B
N-Propylbenzene		0.23	J	1.0	ug/L	8260B
1,3,5-Trimethylbenzene		0.65	J	1.0	ug/L	8260B
tert-Butylbenzene		0.39	J	1.0	ug/L	8260B
1,2,4-Trimethylbenzene		2.7		1.0	ug/L	8260B
Naphthalene		1.4		1.0	ug/L	8260B
Benzyl alcohol		0.14	J	2.1	ug/L	8270C
Benzo[a]anthracene		0.029	J B	0.10	ug/L	8270C
Chrysene		0.056	J	0.10	ug/L	8270C
Benzo[fluoranthene		0.093	J B	0.21	ug/L	8270C
3 & 4 Methylphenol		9.6		4.2	ug/L	8270C
Indeno[1,2,3-cd]pyrene		0.11	B	0.10	ug/L	8270C
Dibenz(a,h)anthracene		0.038	J B	0.10	ug/L	8270C
Benzo[g,h,i]perylene		0.079	J B	0.10	ug/L	8270C
Benzoic acid		11		10	ug/L	8270C
Naphthalene		1.2	J	2.1	ug/L	8270C
Benzo[b]fluoranthene		0.074	J B	0.10	ug/L	8270C
Benzo[k]fluoranthene		0.022	J B	0.10	ug/L	8270C
2-Methylnaphthalene		1.3		1.0	ug/L	8270C
Diethyl phthalate		0.39	J	2.1	ug/L	8270C
Pentachlorophenol		3.3	J	3.6	ug/L	8270C
Phenanthrene		0.10	J	0.42	ug/L	8270C
Anthracene		0.068	J	0.21	ug/L	8270C
Di-n-butyl phthalate		3.6	B	2.1	ug/L	8270C
Fluoranthene		0.086	J	0.26	ug/L	8270C
Pyrene		0.13	J	0.31	ug/L	8270C
Butyl benzyl phthalate		2.7	J	3.1	ug/L	8270C
Bis(2-ethylhexyl) phthalate		2.8	J	16	ug/L	8270C
1-Methylnaphthalene		0.70		0.31	ug/L	8270C
Gasoline		0.073		0.050	mg/L	NWTPH-Gx
Motor Oil (>C24-C36)		0.36	J *	0.52	mg/L	NWTPH-Dx
#2 Diesel (C10-C24)		0.25	J	0.26	mg/L	NWTPH-Dx
Mercury		0.00029		0.00020	mg/L	7470A
<b>Total Recoverable</b>						
Barium		0.015	B	0.0050	mg/L	6010B
Arsenic		0.0041		0.0020	mg/L	6020
Lead		0.00023	J B	0.0020	mg/L	6020

## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
<b>580-3718-8</b>	<b>DP09-060925-010</b>					
Benzofluoranthene		5.2	J B	10	ug/Kg	8270C
Benzo[a]pyrene		2.8	J B	5.2	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		2.5	J B	5.2	ug/Kg	8270C
Dibenz(a,h)anthracene		3.5	J B	5.2	ug/Kg	8270C
Benzo[g,h,i]perylene		1.5	J B	5.2	ug/Kg	8270C
Benzo[b]fluoranthene		3.1	J B	5.2	ug/Kg	8270C
Benzo[k]fluoranthene		2.2	J B	5.2	ug/Kg	8270C
Di-n-butyl phthalate		44	J B	210	ug/Kg	8270C
Gasoline		0.82	J	6.9	mg/Kg	NWTPH-Gx
Barium		35		0.25	mg/Kg	6010B
Chromium		26		0.49	mg/Kg	6010B
Selenium		2.6		2.5	mg/Kg	6010B
Arsenic		3.3		0.20	mg/Kg	6020
Lead		2.5	B	0.20	mg/Kg	6020
Mercury		0.033		0.017	mg/Kg	7471A
<b>580-3718-9</b>	<b>DP09-060925-W</b>					
4-Isopropyltoluene		0.12	J	1.0	ug/L	8260B
Naphthalene		0.077	J	1.0	ug/L	8260B
Indeno[1,2,3-cd]pyrene		0.023	J B	0.10	ug/L	8270C
Dibenz(a,h)anthracene		0.017	J B	0.10	ug/L	8270C
Benzoic acid		5.3	J	10	ug/L	8270C
Diethyl phthalate		0.14	J	2.1	ug/L	8270C
Di-n-butyl phthalate		0.95	J B	2.1	ug/L	8270C
Butyl benzyl phthalate		0.36	J	3.1	ug/L	8270C
Gasoline		0.012	J	0.050	mg/L	NWTPH-Gx
<b>Total Recoverable</b>						
Barium		0.047	B	0.0050	mg/L	6010B

## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>580-3718-10</b>	<b>DP05-060925-015</b>				
Benzo[a]anthracene		3.0 J	5.0	ug/Kg	8270C
Benzo[fluoranthene		7.5 JB	10	ug/Kg	8270C
Benzo[a]pyrene		3.9 JB	5.0	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		5.4 B	5.0	ug/Kg	8270C
Dibenz(a,h)anthracene		3.9 JB	5.0	ug/Kg	8270C
Benzo[g,h,i]perylene		3.7 JB	5.0	ug/Kg	8270C
Benzo[b]fluoranthene		4.0 JB	5.0	ug/Kg	8270C
Benzo[k]fluoranthene		3.7 JB	5.0	ug/Kg	8270C
Di-n-butyl phthalate		41 JB	200	ug/Kg	8270C
Gasoline		0.78 J	6.4	mg/Kg	NWTPH-Gx
#2 Diesel (C10-C24)		9.1 J	26	mg/Kg	NWTPH-Dx
Barium		32	0.22	mg/Kg	6010B
Chromium		15	0.45	mg/Kg	6010B
Selenium		2.2 J	2.2	mg/Kg	6010B
Arsenic		1.7	0.18	mg/Kg	6020
Lead		2.2 B	0.18	mg/Kg	6020
Mercury		0.019	0.013	mg/Kg	7471A

## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>580-3718-11</b>	<b>DP06-060926-030</b>				
Naphthalene		140000	3700	ug/Kg	8260B
Benzo[a]anthracene		74	11	ug/Kg	8270C
Chrysene		71	11	ug/Kg	8270C
Benzo[fluoranthene		94	22	ug/Kg	8270C
Benzo[a]pyrene		71	11	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		41	11	ug/Kg	8270C
Dibenz(a,h)anthracene		7.5	11	ug/Kg	8270C
Benzo[g,h,i]perylene		32	11	ug/Kg	8270C
Naphthalene		300	88	ug/Kg	8270C
Benzo[b]fluoranthene		70	11	ug/Kg	8270C
Benzo[k]fluoranthene		47	11	ug/Kg	8270C
2-Methylnaphthalene		970	88	ug/Kg	8270C
Acenaphthylene		37	88	ug/Kg	8270C
Acenaphthene		1900	88	ug/Kg	8270C
Dibenzofuran		940	440	ug/Kg	8270C
Fluorene		1100	88	ug/Kg	8270C
Phenanthrene		1600	88	ug/Kg	8270C
Anthracene		130	88	ug/Kg	8270C
Di-n-butyl phthalate		190	880	ug/Kg	8270C
Fluoranthene		430	88	ug/Kg	8270C
Pyrene		450	88	ug/Kg	8270C
Benzo[a]anthracene		180	110	ug/Kg	8270C
Chrysene		150	110	ug/Kg	8270C
Bis(2-ethylhexyl) phthalate		30000	33000	ug/Kg	8270C
Di-n-octyl phthalate		580	880	ug/Kg	8270C
Benzo[fluoranthene		220	180	ug/Kg	8270C
Benzo[a]pyrene		220	130	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		150	180	ug/Kg	8270C
Dibenz(a,h)anthracene		260	180	ug/Kg	8270C
Benzo[g,h,i]perylene		160	110	ug/Kg	8270C
1-Methylnaphthalene		570	130	ug/Kg	8270C
Gasoline		290	19	mg/Kg	NWTPH-Gx
Motor Oil (>C24-C36)		320	110	mg/Kg	NWTPH-Dx
#2 Diesel (C10-C24)		97	57	mg/Kg	NWTPH-Dx
Barium		50	0.58	mg/Kg	6010B
Chromium		23	1.2	mg/Kg	6010B
Selenium		2.8	5.8	mg/Kg	6010B
Arsenic		5.8	0.46	mg/Kg	6020
Lead		48	0.46	mg/Kg	6020
Cadmium		0.31	0.46	mg/Kg	6020
Mercury		0.056	0.039	mg/Kg	7471A

## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
<b>580-3718-12</b>	<b>DP10-060926-020</b>					
Benzofluoranthene		1.4	J B	10	ug/Kg	8270C
Benzo[a]pyrene		0.77	J B	5.1	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		0.58	J B	5.1	ug/Kg	8270C
Dibenz(a,h)anthracene		0.38	J B	5.1	ug/Kg	8270C
Benzo[g,h,i]perylene		0.61	J B	5.1	ug/Kg	8270C
Benzo[b]fluoranthene		1.3	J B	5.1	ug/Kg	8270C
Benzo[k]fluoranthene		0.42	J B	5.1	ug/Kg	8270C
Di-n-butyl phthalate		41	J B	210	ug/Kg	8270C
Di-n-octyl phthalate		140	J	210	ug/Kg	8270C
Gasoline		8.7		6.0	mg/Kg	NWTPH-Gx
#2 Diesel (C10-C24)		6.4	J	25	mg/Kg	NWTPH-Dx
Barium		44		0.23	mg/Kg	6010B
Chromium		23		0.46	mg/Kg	6010B
Selenium		2.9		2.3	mg/Kg	6010B
Arsenic		2.0		0.18	mg/Kg	6020
Lead		2.6	B	0.18	mg/Kg	6020
<b>580-3718-13</b>	<b>DP10-060926-W</b>					
Naphthalene		0.017	J	2.0	ug/L	8270C
Diethyl phthalate		0.13	J	2.0	ug/L	8270C
Fluorene		0.054	J	0.31	ug/L	8270C
Di-n-butyl phthalate		0.89	J B	2.0	ug/L	8270C
Butyl benzyl phthalate		0.44	J	3.1	ug/L	8270C
Motor Oil (>C24-C36)		0.14	J *	0.50	mg/L	NWTPH-Dx
#2 Diesel (C10-C24)		0.055	J	0.25	mg/L	NWTPH-Dx
<b>Total Recoverable</b>						
Barium		0.016	B	0.0050	mg/L	6010B
<b>580-3718-14</b>	<b>DP10-060926-WDUP</b>					
Acenaphthene		0.061	J	0.50	ug/L	8270C
Fluorene		0.069	J	0.30	ug/L	8270C
Di-n-butyl phthalate		0.93	J B	2.0	ug/L	8270C
Pyrene		0.022	J	0.30	ug/L	8270C
Butyl benzyl phthalate		0.56	J	3.0	ug/L	8270C
Motor Oil (>C24-C36)		0.076	J *	0.51	mg/L	NWTPH-Dx
#2 Diesel (C10-C24)		0.047	J	0.26	mg/L	NWTPH-Dx
Mercury		0.00011	J	0.00020	mg/L	7470A
<b>Total Recoverable</b>						
Barium		0.016	B	0.0050	mg/L	6010B

STL Seattle

## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
<b>580-3718-15</b>	<b>DP07-060926-045</b>					
Benzofluoranthene		1.4	JB	11	ug/Kg	8270C
Benzo[a]pyrene		0.72	JB	5.5	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		0.66	JB	5.5	ug/Kg	8270C
Dibenz(a,h)anthracene		1.0	JB	5.5	ug/Kg	8270C
Benzo[g,h,i]perylene		0.47	JB	5.5	ug/Kg	8270C
Benzo[b]fluoranthene		1.6	JB	5.5	ug/Kg	8270C
2,6-Dinitrotoluene		33	J	110	ug/Kg	8270C
Di-n-butyl phthalate		44	JB	220	ug/Kg	8270C
Gasoline		2.8	J	8.1	mg/Kg	NWTPH-Gx
Barium		25		0.21	mg/Kg	6010B
Chromium		15		0.42	mg/Kg	6010B
Arsenic		2.8		0.17	mg/Kg	6020
Lead		1.5	B	0.17	mg/Kg	6020
Cadmium		0.023	J	0.17	mg/Kg	6020
<b>580-3718-16</b>	<b>DP07-060926-045DUP</b>					
Benzofluoranthene		0.97	JB	10	ug/Kg	8270C
Dibenz(a,h)anthracene		0.39	JB	5.1	ug/Kg	8270C
Benzo[g,h,i]perylene		0.40	JB	5.1	ug/Kg	8270C
Benzo[b]fluoranthene		1.0	JB	5.1	ug/Kg	8270C
Di-n-butyl phthalate		39	JB	200	ug/Kg	8270C
Gasoline		1.4	J	7.5	mg/Kg	NWTPH-Gx
Barium		18		0.24	mg/Kg	6010B
Chromium		17		0.48	mg/Kg	6010B
Selenium		0.44	J	2.4	mg/Kg	6010B
Arsenic		2.9		0.19	mg/Kg	6020
Lead		1.4	B	0.19	mg/Kg	6020
Mercury		0.011	J	0.017	mg/Kg	7471A



## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>580-3718-17</b>	<b>DP08-060926-010</b>				
4-Isopropyltoluene		14 J	75	ug/Kg	8260B
Naphthalene		110	75	ug/Kg	8260B
Benzo[a]anthracene		34	5.0	ug/Kg	8270C
Chrysene		120	5.0	ug/Kg	8270C
Benzo[fluoranthene		98 B	9.9	ug/Kg	8270C
Benzo[a]pyrene		78 B	5.0	ug/Kg	8270C
Indeno[1,2,3-cd]pyrene		34 B	5.0	ug/Kg	8270C
Dibenz(a,h)anthracene		18 B	5.0	ug/Kg	8270C
Benzo[g,h,i]perylene		39 B	5.0	ug/Kg	8270C
Benzo[b]fluoranthene		66 B	5.0	ug/Kg	8270C
Benzo[k]fluoranthene		36 B	5.0	ug/Kg	8270C
Pyrene		290	200	ug/Kg	8270C
Di-n-octyl phthalate		1400 J	2000	ug/Kg	8270C
Benzo[fluoranthene		110 J	400	ug/Kg	8270C
Benzo[a]pyrene		220 J B	300	ug/Kg	8270C
Benzo[g,h,i]perylene		160 J	250	ug/Kg	8270C
Gasoline		60	7.5	mg/Kg	NWTPH-Gx
PCB-1260		0.027	0.011	mg/Kg	8082
Motor Oil (>C24-C36)		8800	500	mg/Kg	NWTPH-Dx
#2 Diesel (C10-C24)		7300	250	mg/Kg	NWTPH-Dx
Barium		110	0.22	mg/Kg	6010B
Chromium		13	0.45	mg/Kg	6010B
Selenium		2.5	2.2	mg/Kg	6010B
Arsenic		1.8	0.18	mg/Kg	6020
Lead		37 B	0.18	mg/Kg	6020
Cadmium		0.24	0.18	mg/Kg	6020
Mercury		0.038	0.018	mg/Kg	7471A

## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>580-3718-18</b>	<b>DP07-060926-W</b>				
Toluene		0.077 J	1.0	ug/L	8260B
m-Xylene & p-Xylene		0.22 J	2.0	ug/L	8260B
o-Xylene		0.079 J	1.0	ug/L	8260B
4-Isopropyltoluene		2.7	1.0	ug/L	8260B
3 & 4 Methylphenol		0.41 J	4.2	ug/L	8270C
Benzoic acid		5.5 J	10	ug/L	8270C
Diethyl phthalate		0.21 J	2.1	ug/L	8270C
Di-n-butyl phthalate		1.1 J B	2.1	ug/L	8270C
Butyl benzyl phthalate		0.59 J	3.1	ug/L	8270C
Di-n-octyl phthalate		1.4 J	2.1	ug/L	8270C
Gasoline		0.018 J	0.050	mg/L	NWTPH-Gx
Motor Oil (>C24-C36)		0.23 J *	0.51	mg/L	NWTPH-Dx
#2 Diesel (C10-C24)		0.090 J	0.25	mg/L	NWTPH-Dx
Mercury		0.00011 J	0.00020	mg/L	7470A
<b>Total Recoverable</b>					
Barium		0.047 B	0.0050	mg/L	6010B

## SAMPLE SUMMARY

Client: GeoEngineers Inc

Job Number: 580-3718-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
580-3718-1	DP04-060925-010	Solid	09/25/2006 0945	09/26/2006 1139
580-3718-2	DP04-060925-040	Solid	09/25/2006 0950	09/26/2006 1139
580-3718-3	DP04-060925-W	Water	09/25/2006 1000	09/26/2006 1139
580-3718-4	DP03-060925-010	Solid	09/25/2006 1050	09/26/2006 1139
580-3718-5	DP02-060925-010	Solid	09/25/2006 1200	09/26/2006 1139
580-3718-6	DP01-060925-010	Solid	09/25/2006 1245	09/26/2006 1139
580-3718-7	DP01-060925-W	Water	09/25/2006 1315	09/26/2006 1139
580-3718-8	DP09-060925-010	Solid	09/25/2006 1440	09/26/2006 1139
580-3718-9	DP09-060925-W	Water	09/25/2006 1445	09/26/2006 1139
580-3718-10	DP05-060925-015	Solid	09/25/2006 1545	09/26/2006 1139
580-3718-11	DP06-060926-030	Solid	09/26/2006 0900	09/26/2006 1139
580-3718-12	DP10-060926-020	Solid	09/26/2006 1010	09/26/2006 1139
580-3718-13	DP10-060926-W	Water	09/26/2006 1030	09/26/2006 1139
580-3718-14	DP10-060926-WDUP	Water	09/26/2006 1035	09/26/2006 1139
580-3718-15	DP07-060926-045	Solid	09/26/2006 1120	09/26/2006 1139
580-3718-16	DP07-060926-045DUP	Solid	09/26/2006 1125	09/26/2006 1139
580-3718-17	DP08-060926-010	Solid	09/26/2006 1315	09/26/2006 1139
580-3718-18	DP07-060926-W	Water	09/26/2006 1145	09/26/2006 1139

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-010**

Lab Sample ID: 580-3718-1

Date Sampled: 09/25/2006 0945

Client Matrix: Solid

% Moisture: 12.9

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29552.D

Dilution: 1.0

Initial Weight/Volume: 6.37 g

Date Analyzed: 09/28/2006 1632

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		10	72
Chloromethane		ND		13	72
Vinyl chloride		ND		9.4	29
Bromomethane		ND		50	360
Chloroethane		ND	*	52	360
Trichlorofluoromethane		ND		6.9	72
1,1-Dichloroethene		ND		9.6	29
Methylene Chloride		ND		11	72
trans-1,2-Dichloroethene		ND		7.8	72
1,1-Dichloroethane		ND		17	72
2,2-Dichloropropane		ND		8.5	72
cis-1,2-Dichloroethene		ND		11	72
Chlorobromomethane		ND		8.7	72
Chloroform		ND		6.9	72
1,1,1-Trichloroethane		ND		7.0	29
Carbon tetrachloride		ND		5.4	29
1,1-Dichloropropene		ND		5.6	72
Benzene		ND		5.0	14
1,2-Dichloroethane		ND		15	72
Trichloroethene		ND		5.4	29
1,2-Dichloropropane		ND		4.5	14
Dibromomethane		ND		13	72
Dichlorobromomethane		ND		5.0	72
cis-1,3-Dichloropropene		ND		5.0	72
Toluene		ND		13	72
trans-1,3-Dichloropropene		ND		5.0	72
1,1,2-Trichloroethane		ND		6.5	72
Tetrachloroethene		ND		13	45
1,3-Dichloropropane		ND		7.6	29
Chlorodibromomethane		ND		4.5	72
Ethylene Dibromide		ND		12	72
Chlorobenzene		ND		22	72
Ethylbenzene		ND		13	72
1,1,1,2-Tetrachloroethane		ND		6.9	72
1,1,2,2-Tetrachloroethane		ND		4.3	14
m-Xylene & p-Xylene		ND		27	72
o-Xylene		ND		13	72
Styrene		ND		5.8	72
Bromoform		ND		5.0	72
Isopropylbenzene		ND		11	72
Bromobenzene		ND		6.5	72
N-Propylbenzene		ND		12	72
1,2,3-Trichloropropane		ND		13	72

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-010**

Lab Sample ID: 580-3718-1

Date Sampled: 09/25/2006 0945

Client Matrix: Solid

% Moisture: 12.9

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29552.D

Dilution: 1.0

Initial Weight/Volume: 6.37 g

Date Analyzed: 09/28/2006 1632

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Chlorotoluene		ND		10	72
1,3,5-Trimethylbenzene		ND		11	72
4-Chlorotoluene		ND		6.3	72
tert-Butylbenzene		ND		6.1	72
1,2,4-Trimethylbenzene		ND		12	72
sec-Butylbenzene		ND		2.9	72
1,3-Dichlorobenzene		ND		7.4	72
4-Isopropyltoluene		ND		5.0	72
1,4-Dichlorobenzene		ND		3.6	72
n-Butylbenzene		ND		4.3	72
1,2-Dichlorobenzene		ND		6.1	72
1,2-Dibromo-3-Chloropropane		ND		16	72
1,2,4-Trichlorobenzene		ND		7.0	72
1,2,3-Trichlorobenzene		ND		8.7	72
Hexachlorobutadiene		ND		12	72
Naphthalene		6.5	J	4.7	72
Surrogate		%Rec		Acceptance Limits	
Fluorobenzene (Surr)		93		75 - 125	
Toluene-d8 (Surr)		88		75 - 125	
Ethylbenzene-d10		84		75 - 125	
4-Bromofluorobenzene (Surr)		78		75 - 125	
Trifluorotoluene (Surr)		101		75 - 125	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-040**

Lab Sample ID: 580-3718-2

Date Sampled: 09/25/2006 0950

Client Matrix: Solid

% Moisture: 27.3

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29553.D

Dilution: 1.0

Initial Weight/Volume: 4.63 g

Date Analyzed: 09/28/2006 1651

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		17	120
Chloromethane		ND		22	120
Vinyl chloride		ND		15	48
Bromomethane		ND		83	590
Chloroethane		ND	*	86	590
Trichlorofluoromethane		ND		11	120
1,1-Dichloroethene		ND		16	48
Methylene Chloride		ND		18	120
trans-1,2-Dichloroethene		ND		13	120
1,1-Dichloroethane		ND		28	120
2,2-Dichloropropane		ND		14	120
cis-1,2-Dichloroethene		ND		18	120
Chlorobromomethane		ND		14	120
Chloroform		ND		11	120
1,1,1-Trichloroethane		ND		12	48
Carbon tetrachloride		ND		8.9	48
1,1-Dichloropropene		ND		9.2	120
Benzene		ND		8.3	24
1,2-Dichloroethane		ND		24	120
Trichloroethene		ND		8.9	48
1,2-Dichloropropane		ND		7.4	24
Dibromomethane		ND		22	120
Dichlorobromomethane		ND		8.3	120
cis-1,3-Dichloropropene		ND		8.3	120
Toluene		ND		22	120
trans-1,3-Dichloropropene		ND		8.3	120
1,1,2-Trichloroethane		ND		11	120
Tetrachloroethene		ND		22	74
1,3-Dichloropropane		ND		12	48
Chlorodibromomethane		ND		7.4	120
Ethylene Dibromide		ND		20	120
Chlorobenzene		ND		36	120
Ethylbenzene		ND		21	120
1,1,1,2-Tetrachloroethane		ND		11	120
1,1,2,2-Tetrachloroethane		ND		7.1	24
m-Xylene & p-Xylene		ND		45	120
o-Xylene		ND		21	120
Styrene		ND		9.5	120
Bromoform		ND		8.3	120
Isopropylbenzene		ND		18	120
Bromobenzene		ND		11	120
N-Propylbenzene		ND		21	120
1,2,3-Trichloropropane		ND		21	120

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-040**

Lab Sample ID: 580-3718-2

Date Sampled: 09/25/2006 0950

Client Matrix: Solid

% Moisture: 27.3

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29553.D

Dilution: 1.0

Initial Weight/Volume: 4.63 g

Date Analyzed: 09/28/2006 1651

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Chlorotoluene		ND		17	120
1,3,5-Trimethylbenzene		ND		18	120
4-Chlorotoluene		ND		10	120
tert-Butylbenzene		ND		10	120
1,2,4-Trimethylbenzene		ND		21	120
sec-Butylbenzene		ND		4.8	120
1,3-Dichlorobenzene		ND		12	120
4-Isopropyltoluene		ND		8.3	120
1,4-Dichlorobenzene		ND		5.9	120
n-Butylbenzene		ND		7.1	120
1,2-Dichlorobenzene		ND		10	120
1,2-Dibromo-3-Chloropropane		ND		26	120
1,2,4-Trichlorobenzene		ND		12	120
1,2,3-Trichlorobenzene		ND		14	120
Hexachlorobutadiene		ND		20	120
Naphthalene		12	J	7.7	120
Surrogate		%Rec		Acceptance Limits	
Fluorobenzene (Surr)		93		75 - 125	
Toluene-d8 (Surr)		88		75 - 125	
Ethylbenzene-d10		83		75 - 125	
4-Bromofluorobenzene (Surr)		76		75 - 125	
Trifluorotoluene (Surr)		87		75 - 125	





## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-W**

Lab Sample ID: 580-3718-3  
 Client Matrix: Water

Date Sampled: 09/25/2006 1000  
 Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B	Analysis Batch: 580-11519	Instrument ID: SEA036
Preparation: 5030B		Lab File ID: HP12740.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Date Analyzed: 10/02/2006 1858		Final Weight/Volume: 5 mL
Date Prepared: 10/02/2006 1858		

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Chlorotoluene	ND		0.060	1.0
1,3,5-Trimethylbenzene	ND		0.077	1.0
4-Chlorotoluene	ND		0.098	1.0
tert-Butylbenzene	ND		0.048	1.0
1,2,4-Trimethylbenzene	ND		0.086	1.0
sec-Butylbenzene	ND		0.040	1.0
1,3-Dichlorobenzene	ND		0.040	1.0
4-Isopropyltoluene	ND		0.077	1.0
1,4-Dichlorobenzene	ND		0.052	1.0
n-Butylbenzene	ND		0.098	1.0
1,2-Dichlorobenzene	ND		0.070	1.0
1,2-Dibromo-3-Chloropropane	ND		0.43	2.0
1,2,4-Trichlorobenzene	ND		0.046	1.0
1,2,3-Trichlorobenzene	ND		0.089	1.0
Hexachlorobutadiene	ND		0.14	1.0
Naphthalene	ND		0.070	1.0
Surrogate	%Rec		Acceptance Limits	
Fluorobenzene (Surr)	90		80 - 120	
Toluene-d8 (Surr)	92		80 - 120	
Ethylbenzene-d10	93		80 - 120	
4-Bromofluorobenzene (Surr)	92		80 - 120	
Trifluorotoluene (Surr)	104		80 - 120	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP03-060925-010**

Lab Sample ID: 580-3718-4

Date Sampled: 09/25/2006 1050

Client Matrix: Solid

% Moisture: 8.7

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29554.D

Dilution: 1.0

Initial Weight/Volume: 6.77 g

Date Analyzed: 09/28/2006 1710

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		9.1	65
Chloromethane		ND		12	65
Vinyl chloride		ND		8.4	26
Bromomethane		ND		45	320
Chloroethane		ND	*	47	320
Trichlorofluoromethane		ND		6.1	65
1,1-Dichloroethene		ND		8.6	26
Methylene Chloride		ND		9.9	65
trans-1,2-Dichloroethene		ND		7.0	65
1,1-Dichloroethane		ND		15	65
2,2-Dichloropropane		ND		7.6	65
cis-1,2-Dichloroethene		ND		9.7	65
Chlorobromomethane		ND		7.8	65
Chloroform		ND		6.1	65
1,1,1-Trichloroethane		ND		6.3	26
Carbon tetrachloride		ND		4.9	26
1,1-Dichloropropene		ND		5.0	65
Benzene		ND		4.5	13
1,2-Dichloroethane		ND		13	65
Trichloroethene		ND		4.9	26
1,2-Dichloropropane		ND		4.0	13
Dibromomethane		ND		12	65
Dichlorobromomethane		ND		4.5	65
cis-1,3-Dichloropropene		ND		4.5	65
Toluene		ND		12	65
trans-1,3-Dichloropropene		ND		4.5	65
1,1,2-Trichloroethane		ND		5.8	65
Tetrachloroethene		ND		12	40
1,3-Dichloropropane		ND		6.8	26
Chlorodibromomethane		ND		4.0	65
Ethylene Dibromide		ND		11	65
Chlorobenzene		ND		19	65
Ethylbenzene		ND		12	65
1,1,1,2-Tetrachloroethane		ND		6.1	65
1,1,2,2-Tetrachloroethane		ND		3.9	13
m-Xylene & p-Xylene		ND		24	65
o-Xylene		ND		12	65
Styrene		ND		5.2	65
Bromoform		ND		4.5	65
Isopropylbenzene		ND		9.9	65
Bromobenzene		ND		5.8	65
N-Propylbenzene		ND		11	65
1,2,3-Trichloropropane		ND		11	65

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP03-060925-010**

Lab Sample ID: 580-3718-4

Date Sampled: 09/25/2006 1050

Client Matrix: Solid

% Moisture: 8.7

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29554.D

Dilution: 1.0

Initial Weight/Volume: 6.77 g

Date Analyzed: 09/28/2006 1710

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Chlorotoluene		ND		9.4	65
1,3,5-Trimethylbenzene		ND		9.7	65
4-Chlorotoluene		ND		5.7	65
tert-Butylbenzene		ND		5.5	65
1,2,4-Trimethylbenzene		ND		11	65
sec-Butylbenzene		ND		2.6	65
1,3-Dichlorobenzene		ND		6.6	65
4-Isopropyltoluene		ND		4.5	65
1,4-Dichlorobenzene		ND		3.2	65
n-Butylbenzene		ND		3.9	65
1,2-Dichlorobenzene		ND		5.5	65
1,2-Dibromo-3-Chloropropane		ND		14	65
1,2,4-Trichlorobenzene		ND		6.3	65
1,2,3-Trichlorobenzene		ND		7.8	65
Hexachlorobutadiene		ND		11	65
Naphthalene		4.6	J	4.2	65
Surrogate		%Rec		Acceptance Limits	
Fluorobenzene (Surr)		94		75 - 125	
Toluene-d8 (Surr)		92		75 - 125	
Ethylbenzene-d10		92		75 - 125	
4-Bromofluorobenzene (Surr)		88		75 - 125	
Trifluorotoluene (Surr)		99		75 - 125	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP02-060925-010**

Lab Sample ID: 580-3718-5

Date Sampled: 09/25/2006 1200

Client Matrix: Solid

% Moisture: 6.2

Date Received: 09/26/2006 1139

## 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29555.D

Dilution: 1.0

Initial Weight/Volume: 5.39 g

Date Analyzed: 09/28/2006 1729

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		11	79
Chloromethane		ND		14	79
Vinyl chloride		ND		10	32
Bromomethane		ND		55	400
Chloroethane		ND	*	57	400
Trichlorofluoromethane		ND		7.5	79
1,1-Dichloroethene		ND		10	32
Methylene Chloride		ND		12	79
trans-1,2-Dichloroethene		ND		8.5	79
1,1-Dichloroethane		ND		19	79
2,2-Dichloropropane		ND		9.3	79
cis-1,2-Dichloroethene		ND		12	79
Chlorobromomethane		ND		9.5	79
Chloroform		ND		7.5	79
1,1,1-Trichloroethane		ND		7.7	32
Carbon tetrachloride		ND		5.9	32
1,1-Dichloropropene		ND		6.1	79
Benzene		ND		5.5	16
1,2-Dichloroethane		ND		16	79
Trichloroethene		ND		5.9	32
1,2-Dichloropropane		ND		4.9	16
Dibromomethane		ND		14	79
Dichlorobromomethane		ND		5.5	79
cis-1,3-Dichloropropene		ND		5.5	79
Toluene		ND		15	79
trans-1,3-Dichloropropene		ND		5.5	79
1,1,2-Trichloroethane		ND		7.1	79
Tetrachloroethene		ND		14	49
1,3-Dichloropropane		ND		8.3	32
Chlorodibromomethane		ND		4.9	79
Ethylene Dibromide		ND		13	79
Chlorobenzene		ND		24	79
Ethylbenzene		ND		14	79
1,1,1,2-Tetrachloroethane		ND		7.5	79
1,1,2,2-Tetrachloroethane		ND		4.7	16
m-Xylene & p-Xylene		ND		30	79
o-Xylene		ND		14	79
Styrene		ND		6.3	79
Bromoform		ND		5.5	79
Isopropylbenzene		ND		12	79
Bromobenzene		ND		7.1	79
N-Propylbenzene		ND		14	79
1,2,3-Trichloropropane		ND		14	79

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP02-060925-010**

Lab Sample ID: 580-3718-5

Date Sampled: 09/25/2006 1200

Client Matrix: Solid

% Moisture: 6.2

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29555.D

Dilution: 1.0

Initial Weight/Volume: 5.39 g

Date Analyzed: 09/28/2006 1729

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Chlorotoluene		ND		11	79
1,3,5-Trimethylbenzene		ND		12	79
4-Chlorotoluene		ND		6.9	79
tert-Butylbenzene		ND		6.7	79
1,2,4-Trimethylbenzene		ND		14	79
sec-Butylbenzene		37	J	3.2	79
1,3-Dichlorobenzene		ND		8.1	79
4-Isopropyltoluene		ND		5.5	79
1,4-Dichlorobenzene		ND		4.0	79
n-Butylbenzene		ND		4.7	79
1,2-Dichlorobenzene		ND		6.7	79
1,2-Dibromo-3-Chloropropane		ND		17	79
1,2,4-Trichlorobenzene		ND		7.7	79
1,2,3-Trichlorobenzene		ND		9.5	79
Hexachlorobutadiene		ND		13	79
Naphthalene		14	J	5.1	79
Surrogate		%Rec		Acceptance Limits	
Fluorobenzene (Surr)		93		75 - 125	
Toluene-d8 (Surr)		87		75 - 125	
Ethylbenzene-d10		84		75 - 125	
4-Bromofluorobenzene (Surr)		78		75 - 125	
Trifluorotoluene (Surr)		100		75 - 125	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-010**

Lab Sample ID: 580-3718-6

Date Sampled: 09/25/2006 1245

Client Matrix: Solid

% Moisture: 9.7

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29556.D

Dilution: 1.0

Initial Weight/Volume: 5.52 g

Date Analyzed: 09/28/2006 1748

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		11	80
Chloromethane		ND		15	80
Vinyl chloride		ND		10	32
Bromomethane		ND		56	400
Chloroethane		ND	*	58	400
Trichlorofluoromethane		ND		7.6	80
1,1-Dichloroethene		ND		11	32
Methylene Chloride		ND		12	80
trans-1,2-Dichloroethene		ND		8.6	80
1,1-Dichloroethane		ND		19	80
2,2-Dichloropropane		ND		9.4	80
cis-1,2-Dichloroethene		ND		12	80
Chlorobromomethane		ND		9.6	80
Chloroform		ND		7.6	80
1,1,1-Trichloroethane		ND		7.8	32
Carbon tetrachloride		ND		6.0	32
1,1-Dichloropropene		ND		6.2	80
Benzene		ND		5.6	16
1,2-Dichloroethane		ND		16	80
Trichloroethene		ND		6.0	32
1,2-Dichloropropane		ND		5.0	16
Dibromomethane		ND		15	80
Dichlorobromomethane		ND		5.6	80
cis-1,3-Dichloropropene		ND		5.6	80
Toluene		ND		15	80
trans-1,3-Dichloropropene		ND		5.6	80
1,1,2-Trichloroethane		ND		7.2	80
Tetrachloroethene		ND		15	50
1,3-Dichloropropane		ND		8.4	32
Chlorodibromomethane		ND		5.0	80
Ethylene Dibromide		ND		13	80
Chlorobenzene		ND		24	80
Ethylbenzene		ND		14	80
1,1,1,2-Tetrachloroethane		ND		7.6	80
1,1,2,2-Tetrachloroethane		ND		4.8	16
m-Xylene & p-Xylene		ND		30	80
o-Xylene		ND		14	80
Styrene		ND		6.4	80
Bromoform		ND		5.6	80
Isopropylbenzene		ND		12	80
Bromobenzene		ND		7.2	80
N-Propylbenzene		ND		14	80
1,2,3-Trichloropropane		ND		14	80

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-010**

Lab Sample ID: 580-3718-6

Date Sampled: 09/25/2006 1245

Client Matrix: Solid

% Moisture: 9.7

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29556.D

Dilution: 1.0

Initial Weight/Volume: 5.52 g

Date Analyzed: 09/28/2006 1748

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Chlorotoluene		ND		12	80
1,3,5-Trimethylbenzene		ND		12	80
4-Chlorotoluene		ND		7.0	80
tert-Butylbenzene		ND		6.8	80
1,2,4-Trimethylbenzene		ND		14	80
sec-Butylbenzene		ND		3.2	80
1,3-Dichlorobenzene		ND		8.2	80
4-Isopropyltoluene		ND		5.6	80
1,4-Dichlorobenzene		ND		4.0	80
n-Butylbenzene		ND		4.8	80
1,2-Dichlorobenzene		ND		6.8	80
1,2-Dibromo-3-Chloropropane		ND		18	80
1,2,4-Trichlorobenzene		ND		7.8	80
1,2,3-Trichlorobenzene		ND		9.6	80
Hexachlorobutadiene		ND		13	80
Naphthalene		ND		5.2	80
Surrogate		%Rec		Acceptance Limits	
Fluorobenzene (Surr)		94		75 - 125	
Toluene-d8 (Surr)		88		75 - 125	
Ethylbenzene-d10		84		75 - 125	
4-Bromofluorobenzene (Surr)		78		75 - 125	
Trifluorotoluene (Surr)		103		75 - 125	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-W**

Lab Sample ID: 580-3718-7  
 Client Matrix: Water

Date Sampled: 09/25/2006 1315  
 Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method:	8260B	Analysis Batch: 580-11519	Instrument ID: SEA036
Preparation:	5030B		Lab File ID: HP12741.D
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	10/02/2006 1918		Final Weight/Volume: 5 mL
Date Prepared:	10/02/2006 1918		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND		0.13	1.0
Chloromethane	ND		0.18	1.0
Vinyl chloride	ND		0.18	1.0
Bromomethane	ND		0.23	1.0
Chloroethane	ND		0.19	5.0
Trichlorofluoromethane	ND		0.088	1.0
1,1-Dichloroethene	ND		0.098	1.0
Methylene Chloride	ND		0.090	1.0
trans-1,2-Dichloroethene	ND		0.074	1.0
1,1-Dichloroethane	ND		0.11	1.0
2,2-Dichloropropane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.079	1.0
Chlorobromomethane	ND		0.14	1.0
Chloroform	ND		0.067	1.0
1,1,1-Trichloroethane	ND		0.11	1.0
Carbon tetrachloride	ND		0.070	1.0
1,1-Dichloropropene	ND		0.080	1.0
Benzene	ND		0.10	1.0
1,2-Dichloroethane	ND		0.20	1.0
Trichloroethene	ND		0.074	1.0
1,2-Dichloropropane	ND		0.092	1.0
Dibromomethane	ND		0.13	1.0
Dichlorobromomethane	ND		0.076	1.0
cis-1,3-Dichloropropene	ND		0.064	1.0
Toluene	0.86	J	0.066	1.0
trans-1,3-Dichloropropene	ND		0.082	1.0
1,1,2-Trichloroethane	ND		0.076	1.0
Tetrachloroethene	ND		0.088	1.0
1,3-Dichloropropane	ND		0.10	1.0
Chlorodibromomethane	ND		0.11	1.0
Ethylene Dibromide	ND		0.076	1.0
Chlorobenzene	ND		0.063	1.0
Ethylbenzene	0.40	J	0.085	1.0
1,1,1,2-Tetrachloroethane	ND		0.073	1.0
1,1,2,2-Tetrachloroethane	ND		0.11	1.0
m-Xylene & p-Xylene	1.5	J	0.17	2.0
o-Xylene	0.96	J	0.068	1.0
Styrene	ND		0.061	1.0
Bromoform	ND		0.076	1.0
Isopropylbenzene	0.095	J	0.084	1.0
Bromobenzene	ND		0.079	1.0
N-Propylbenzene	0.23	J	0.069	1.0
1,2,3-Trichloropropane	ND		0.11	1.0



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-W**

Lab Sample ID: 580-3718-7  
 Client Matrix: Water

Date Sampled: 09/25/2006 1315  
 Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B	Analysis Batch: 580-11519	Instrument ID: SEA036
Preparation: 5030B		Lab File ID: HP12741.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Date Analyzed: 10/02/2006 1918		Final Weight/Volume: 5 mL
Date Prepared: 10/02/2006 1918		

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Chlorotoluene	ND		0.060	1.0
1,3,5-Trimethylbenzene	0.65	J	0.077	1.0
4-Chlorotoluene	ND		0.098	1.0
tert-Butylbenzene	0.39	J	0.048	1.0
1,2,4-Trimethylbenzene	2.7		0.086	1.0
sec-Butylbenzene	ND		0.040	1.0
1,3-Dichlorobenzene	ND		0.040	1.0
4-Isopropyltoluene	ND		0.077	1.0
1,4-Dichlorobenzene	ND		0.052	1.0
n-Butylbenzene	ND		0.098	1.0
1,2-Dichlorobenzene	ND		0.070	1.0
1,2-Dibromo-3-Chloropropane	ND		0.43	2.0
1,2,4-Trichlorobenzene	ND		0.046	1.0
1,2,3-Trichlorobenzene	ND		0.089	1.0
Hexachlorobutadiene	ND		0.14	1.0
Naphthalene	1.4		0.070	1.0
Surrogate	%Rec		Acceptance Limits	
Fluorobenzene (Surr)	92		80 - 120	
Toluene-d8 (Surr)	94		80 - 120	
Ethylbenzene-d10	92		80 - 120	
4-Bromofluorobenzene (Surr)	94		80 - 120	
Trifluorotoluene (Surr)	111		80 - 120	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-010**

Lab Sample ID: 580-3718-8

Date Sampled: 09/25/2006 1440

Client Matrix: Solid

% Moisture: 11.5

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29557.D

Dilution: 1.0

Initial Weight/Volume: 6.54 g

Date Analyzed: 09/28/2006 1807

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		9.7	69
Chloromethane		ND		13	69
Vinyl chloride		ND		9.0	28
Bromomethane		ND		48	350
Chloroethane		ND	*	50	350
Trichlorofluoromethane		ND		6.6	69
1,1-Dichloroethene		ND		9.2	28
Methylene Chloride		ND		11	69
trans-1,2-Dichloroethene		ND		7.4	69
1,1-Dichloroethane		ND		16	69
2,2-Dichloropropane		ND		8.1	69
cis-1,2-Dichloroethene		ND		10	69
Chlorobromomethane		ND		8.3	69
Chloroform		ND		6.6	69
1,1,1-Trichloroethane		ND		6.7	28
Carbon tetrachloride		ND		5.2	28
1,1-Dichloropropene		ND		5.4	69
Benzene		ND		4.8	14
1,2-Dichloroethane		ND		14	69
Trichloroethene		ND		5.2	28
1,2-Dichloropropane		ND		4.3	14
Dibromomethane		ND		13	69
Dichlorobromomethane		ND		4.8	69
cis-1,3-Dichloropropene		ND		4.8	69
Toluene		ND		13	69
trans-1,3-Dichloropropene		ND		4.8	69
1,1,2-Trichloroethane		ND		6.2	69
Tetrachloroethene		ND		13	43
1,3-Dichloropropane		ND		7.3	28
Chlorodibromomethane		ND		4.3	69
Ethylene Dibromide		ND		11	69
Chlorobenzene		ND		21	69
Ethylbenzene		ND		12	69
1,1,1,2-Tetrachloroethane		ND		6.6	69
1,1,2,2-Tetrachloroethane		ND		4.1	14
m-Xylene & p-Xylene		ND		26	69
o-Xylene		ND		12	69
Styrene		ND		5.5	69
Bromoform		ND		4.8	69
Isopropylbenzene		ND		11	69
Bromobenzene		ND		6.2	69
N-Propylbenzene		ND		12	69
1,2,3-Trichloropropane		ND		12	69

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-010**

Lab Sample ID: 580-3718-8

Date Sampled: 09/25/2006 1440

Client Matrix: Solid

% Moisture: 11.5

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29557.D

Dilution: 1.0

Initial Weight/Volume: 6.54 g

Date Analyzed: 09/28/2006 1807

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Chlorotoluene		ND		10	69
1,3,5-Trimethylbenzene		ND		10	69
4-Chlorotoluene		ND		6.1	69
tert-Butylbenzene		ND		5.9	69
1,2,4-Trimethylbenzene		ND		12	69
sec-Butylbenzene		ND		2.8	69
1,3-Dichlorobenzene		ND		7.1	69
4-Isopropyltoluene		ND		4.8	69
1,4-Dichlorobenzene		ND		3.5	69
n-Butylbenzene		ND		4.1	69
1,2-Dichlorobenzene		ND		5.9	69
1,2-Dibromo-3-Chloropropane		ND		15	69
1,2,4-Trichlorobenzene		ND		6.7	69
1,2,3-Trichlorobenzene		ND		8.3	69
Hexachlorobutadiene		ND		11	69
Naphthalene		ND		4.5	69
Surrogate		%Rec		Acceptance Limits	
Fluorobenzene (Surr)		93		75 - 125	
Toluene-d8 (Surr)		88		75 - 125	
Ethylbenzene-d10		85		75 - 125	
4-Bromofluorobenzene (Surr)		78		75 - 125	
Trifluorotoluene (Surr)		100		75 - 125	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-W**

Lab Sample ID: 580-3718-9  
Client Matrix: Water

Date Sampled: 09/25/2006 1445  
Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method:	8260B	Analysis Batch: 580-11519	Instrument ID: SEA036
Preparation:	5030B		Lab File ID: HP12742.D
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	10/02/2006 1938		Final Weight/Volume: 5 mL
Date Prepared:	10/02/2006 1938		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND		0.13	1.0
Chloromethane	ND		0.18	1.0
Vinyl chloride	ND		0.18	1.0
Bromomethane	ND		0.23	1.0
Chloroethane	ND		0.19	5.0
Trichlorofluoromethane	ND		0.088	1.0
1,1-Dichloroethene	ND		0.098	1.0
Methylene Chloride	ND		0.090	1.0
trans-1,2-Dichloroethene	ND		0.074	1.0
1,1-Dichloroethane	ND		0.11	1.0
2,2-Dichloropropane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.079	1.0
Chlorobromomethane	ND		0.14	1.0
Chloroform	ND		0.067	1.0
1,1,1-Trichloroethane	ND		0.11	1.0
Carbon tetrachloride	ND		0.070	1.0
1,1-Dichloropropene	ND		0.080	1.0
Benzene	ND		0.10	1.0
1,2-Dichloroethane	ND		0.20	1.0
Trichloroethene	ND		0.074	1.0
1,2-Dichloropropane	ND		0.092	1.0
Dibromomethane	ND		0.13	1.0
Dichlorobromomethane	ND		0.076	1.0
cis-1,3-Dichloropropene	ND		0.064	1.0
Toluene	ND		0.066	1.0
trans-1,3-Dichloropropene	ND		0.082	1.0
1,1,2-Trichloroethane	ND		0.076	1.0
Tetrachloroethene	ND		0.088	1.0
1,3-Dichloropropane	ND		0.10	1.0
Chlorodibromomethane	ND		0.11	1.0
Ethylene Dibromide	ND		0.076	1.0
Chlorobenzene	ND		0.063	1.0
Ethylbenzene	ND		0.085	1.0
1,1,1,2-Tetrachloroethane	ND		0.073	1.0
1,1,2,2-Tetrachloroethane	ND		0.11	1.0
m-Xylene & p-Xylene	ND		0.17	2.0
o-Xylene	ND		0.068	1.0
Styrene	ND		0.061	1.0
Bromoform	ND		0.076	1.0
Isopropylbenzene	ND		0.084	1.0
Bromobenzene	ND		0.079	1.0
N-Propylbenzene	ND		0.069	1.0
1,2,3-Trichloropropane	ND		0.11	1.0

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-W**

Lab Sample ID: 580-3718-9  
Client Matrix: Water

Date Sampled: 09/25/2006 1445  
Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method:	8260B	Analysis Batch: 580-11519	Instrument ID: SEA036
Preparation:	5030B		Lab File ID: HP12742.D
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	10/02/2006 1938		Final Weight/Volume: 5 mL
Date Prepared:	10/02/2006 1938		

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Chlorotoluene	ND		0.060	1.0
1,3,5-Trimethylbenzene	ND		0.077	1.0
4-Chlorotoluene	ND		0.098	1.0
tert-Butylbenzene	ND		0.048	1.0
1,2,4-Trimethylbenzene	ND		0.086	1.0
sec-Butylbenzene	ND		0.040	1.0
1,3-Dichlorobenzene	ND		0.040	1.0
4-Isopropyltoluene	0.12	J	0.077	1.0
1,4-Dichlorobenzene	ND		0.052	1.0
n-Butylbenzene	ND		0.098	1.0
1,2-Dichlorobenzene	ND		0.070	1.0
1,2-Dibromo-3-Chloropropane	ND		0.43	2.0
1,2,4-Trichlorobenzene	ND		0.046	1.0
1,2,3-Trichlorobenzene	ND		0.089	1.0
Hexachlorobutadiene	ND		0.14	1.0
Naphthalene	0.077	J	0.070	1.0
Surrogate	%Rec		Acceptance Limits	
Fluorobenzene (Surr)	90		80 - 120	
Toluene-d8 (Surr)	94		80 - 120	
Ethylbenzene-d10	94		80 - 120	
4-Bromofluorobenzene (Surr)	95		80 - 120	
Trifluorotoluene (Surr)	111		80 - 120	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP05-060925-015**

Lab Sample ID: 580-3718-10

Date Sampled: 09/25/2006 1545

Client Matrix: Solid

% Moisture: 5.5

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29558.D

Dilution: 1.0

Initial Weight/Volume: 6.64 g

Date Analyzed: 09/28/2006 1826

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		8.9	64
Chloromethane		ND		12	64
Vinyl chloride		ND		8.3	26
Bromomethane		ND		45	320
Chloroethane		ND	*	46	320
Trichlorofluoromethane		ND		6.1	64
1,1-Dichloroethene		ND		8.5	26
Methylene Chloride		ND		9.7	64
trans-1,2-Dichloroethene		ND		6.9	64
1,1-Dichloroethane		ND		15	64
2,2-Dichloropropane		ND		7.5	64
cis-1,2-Dichloroethene		ND		9.6	64
Chlorobromomethane		ND		7.7	64
Chloroform		ND		6.1	64
1,1,1-Trichloroethane		ND		6.2	26
Carbon tetrachloride		ND		4.8	26
1,1-Dichloropropene		ND		4.9	64
Benzene		ND		4.5	13
1,2-Dichloroethane		ND		13	64
Trichloroethene		ND		4.8	26
1,2-Dichloropropane		ND		4.0	13
Dibromomethane		ND		12	64
Dichlorobromomethane		ND		4.5	64
cis-1,3-Dichloropropene		ND		4.5	64
Toluene		ND		12	64
trans-1,3-Dichloropropene		ND		4.5	64
1,1,2-Trichloroethane		ND		5.7	64
Tetrachloroethene		ND		12	40
1,3-Dichloropropane		ND		6.7	26
Chlorodibromomethane		ND		4.0	64
Ethylene Dibromide		ND		11	64
Chlorobenzene		ND		19	64
Ethylbenzene		ND		11	64
1,1,1,2-Tetrachloroethane		ND		6.1	64
1,1,2,2-Tetrachloroethane		ND		3.8	13
m-Xylene & p-Xylene		ND		24	64
o-Xylene		ND		11	64
Styrene		ND		5.1	64
Bromoform		ND		4.5	64
Isopropylbenzene		ND		9.7	64
Bromobenzene		ND		5.7	64
N-Propylbenzene		ND		11	64
1,2,3-Trichloropropane		ND		11	64

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP05-060925-015**

Lab Sample ID: 580-3718-10

Date Sampled: 09/25/2006 1545

Client Matrix: Solid

% Moisture: 5.5

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11393

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11334

Lab File ID: AG29558.D

Dilution: 1.0

Initial Weight/Volume: 6.64 g

Date Analyzed: 09/28/2006 1826

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1457

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Chlorotoluene		ND		9.2	64
1,3,5-Trimethylbenzene		ND		9.6	64
4-Chlorotoluene		ND		5.6	64
tert-Butylbenzene		ND		5.4	64
1,2,4-Trimethylbenzene		ND		11	64
sec-Butylbenzene		ND		2.6	64
1,3-Dichlorobenzene		ND		6.5	64
4-Isopropyltoluene		ND		4.5	64
1,4-Dichlorobenzene		ND		3.2	64
n-Butylbenzene		ND		3.8	64
1,2-Dichlorobenzene		ND		5.4	64
1,2-Dibromo-3-Chloropropane		ND		14	64
1,2,4-Trichlorobenzene		ND		6.2	64
1,2,3-Trichlorobenzene		ND		7.7	64
Hexachlorobutadiene		ND		11	64
Naphthalene		ND		4.1	64
Surrogate		%Rec		Acceptance Limits	
Fluorobenzene (Surr)		92		75 - 125	
Toluene-d8 (Surr)		88		75 - 125	
Ethylbenzene-d10		84		75 - 125	
4-Bromofluorobenzene (Surr)		77		75 - 125	
Trifluorotoluene (Surr)		102		75 - 125	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP06-060926-030**

Lab Sample ID: 580-3718-11

Date Sampled: 09/26/2006 0900

Client Matrix: Solid

% Moisture: 57.0

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11569

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11480

Lab File ID: AG29618.D

Dilution: 20

Initial Weight/Volume: 4.97 g

Date Analyzed: 10/03/2006 1804

Final Weight/Volume: 400 mL

Date Prepared: 10/02/2006 1518

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		520	3700
Chloromethane		ND		680	3700
Vinyl chloride		ND		490	1500
Bromomethane		ND		2600	19000
Chloroethane		ND	*	2700	19000
Trichlorofluoromethane		ND	*	360	3700
1,1-Dichloroethene		ND		500	1500
Methylene Chloride		ND		570	3700
trans-1,2-Dichloroethene		ND		400	3700
1,1-Dichloroethane		ND		890	3700
2,2-Dichloropropane		ND	*	440	3700
cis-1,2-Dichloroethene		ND		560	3700
Chlorobromomethane		ND		450	3700
Chloroform		ND		360	3700
1,1,1-Trichloroethane		ND		370	1500
Carbon tetrachloride		ND		280	1500
1,1-Dichloropropene		ND		290	3700
Benzene		ND		260	750
1,2-Dichloroethane		ND		760	3700
Trichloroethene		ND		280	1500
1,2-Dichloropropane		ND		230	750
Dibromomethane		ND		680	3700
Dichlorobromomethane		ND		260	3700
cis-1,3-Dichloropropene		ND		260	3700
Toluene		ND		690	3700
trans-1,3-Dichloropropene		ND		260	3700
1,1,2-Trichloroethane		ND		340	3700
Tetrachloroethene		ND		680	2300
1,3-Dichloropropane		ND		390	1500
Chlorodibromomethane		ND		230	3700
Ethylene Dibromide		ND		620	3700
Chlorobenzene		ND		1100	3700
Ethylbenzene		ND		670	3700
1,1,1,2-Tetrachloroethane		ND		360	3700
1,1,2,2-Tetrachloroethane		ND		220	750
m-Xylene & p-Xylene		ND		1400	3700
o-Xylene		ND		670	3700
Styrene		ND		300	3700
Bromoform		ND		260	3700
Isopropylbenzene		ND		570	3700
Bromobenzene		ND		340	3700
N-Propylbenzene		ND		650	3700
1,2,3-Trichloropropane		ND		660	3700



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP06-060926-030**

Lab Sample ID: 580-3718-11

Date Sampled: 09/26/2006 0900

Client Matrix: Solid

% Moisture: 57.0

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11569

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11480

Lab File ID: AG29618.D

Dilution: 20

Initial Weight/Volume: 4.97 g

Date Analyzed: 10/03/2006 1804

Final Weight/Volume: 400 mL

Date Prepared: 10/02/2006 1518

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Chlorotoluene		ND		540	3700
1,3,5-Trimethylbenzene		ND		560	3700
4-Chlorotoluene		ND		330	3700
tert-Butylbenzene		ND		320	3700
1,2,4-Trimethylbenzene		ND		650	3700
sec-Butylbenzene		ND		150	3700
1,3-Dichlorobenzene		ND		380	3700
4-Isopropyltoluene		ND		260	3700
1,4-Dichlorobenzene		ND		190	3700
n-Butylbenzene		ND		220	3700
1,2-Dichlorobenzene		ND		320	3700
1,2-Dibromo-3-Chloropropane		ND	*	820	3700
1,2,4-Trichlorobenzene		ND		370	3700
1,2,3-Trichlorobenzene		ND		450	3700
Hexachlorobutadiene		ND		620	3700
Naphthalene		140000		240	3700
Surrogate		%Rec		Acceptance Limits	
Fluorobenzene (Surr)		93		75 - 125	
Toluene-d8 (Surr)		94		75 - 125	
Ethylbenzene-d10		96		75 - 125	
4-Bromofluorobenzene (Surr)		94		75 - 125	
Trifluorotoluene (Surr)		96		75 - 125	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-020**

Lab Sample ID: 580-3718-12

Date Sampled: 09/26/2006 1010

Client Matrix: Solid

% Moisture: 7.7

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11569

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11480

Lab File ID: AG29614.D

Dilution: 1.0

Initial Weight/Volume: 7.26 g

Date Analyzed: 10/03/2006 1648

Final Weight/Volume: 400 mL

Date Prepared: 10/02/2006 1518

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		8.4	60
Chloromethane		ND		11	60
Vinyl chloride		ND		7.8	24
Bromomethane		ND		42	300
Chloroethane		ND	*	43	300
Trichlorofluoromethane		ND	*	5.7	60
1,1-Dichloroethene		ND		7.9	24
Methylene Chloride		ND		9.1	60
trans-1,2-Dichloroethene		ND		6.4	60
1,1-Dichloroethane		ND		14	60
2,2-Dichloropropane		ND	*	7.0	60
cis-1,2-Dichloroethene		ND		9.0	60
Chlorobromomethane		ND		7.2	60
Chloroform		ND		5.7	60
1,1,1-Trichloroethane		ND		5.8	24
Carbon tetrachloride		ND		4.5	24
1,1-Dichloropropene		ND		4.6	60
Benzene		ND		4.2	12
1,2-Dichloroethane		ND		12	60
Trichloroethene		ND		4.5	24
1,2-Dichloropropane		ND		3.7	12
Dibromomethane		ND		11	60
Dichlorobromomethane		ND		4.2	60
cis-1,3-Dichloropropene		ND		4.2	60
Toluene		ND		11	60
trans-1,3-Dichloropropene		ND		4.2	60
1,1,2-Trichloroethane		ND		5.4	60
Tetrachloroethene		ND		11	37
1,3-Dichloropropane		ND		6.3	24
Chlorodibromomethane		ND		3.7	60
Ethylene Dibromide		ND		9.8	60
Chlorobenzene		ND		18	60
Ethylbenzene		ND		11	60
1,1,1,2-Tetrachloroethane		ND		5.7	60
1,1,2,2-Tetrachloroethane		ND		3.6	12
m-Xylene & p-Xylene		ND		22	60
o-Xylene		ND		11	60
Styrene		ND		4.8	60
Bromoform		ND		4.2	60
Isopropylbenzene		ND		9.1	60
Bromobenzene		ND		5.4	60
N-Propylbenzene		ND		10	60
1,2,3-Trichloropropane		ND		11	60

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-020**

Lab Sample ID: 580-3718-12

Date Sampled: 09/26/2006 1010

Client Matrix: Solid

% Moisture: 7.7

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11569

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11480

Lab File ID: AG29614.D

Dilution: 1.0

Initial Weight/Volume: 7.26 g

Date Analyzed: 10/03/2006 1648

Final Weight/Volume: 400 mL

Date Prepared: 10/02/2006 1518

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Chlorotoluene		ND		8.7	60
1,3,5-Trimethylbenzene		ND		9.0	60
4-Chlorotoluene		ND		5.2	60
tert-Butylbenzene		ND		5.1	60
1,2,4-Trimethylbenzene		ND		10	60
sec-Butylbenzene		ND		2.4	60
1,3-Dichlorobenzene		ND		6.1	60
4-Isopropyltoluene		ND		4.2	60
1,4-Dichlorobenzene		ND		3.0	60
n-Butylbenzene		ND		3.6	60
1,2-Dichlorobenzene		ND		5.1	60
1,2-Dibromo-3-Chloropropane		ND	*	13	60
1,2,4-Trichlorobenzene		ND		5.8	60
1,2,3-Trichlorobenzene		ND		7.2	60
Hexachlorobutadiene		ND		9.8	60
Naphthalene		ND		3.9	60
Surrogate		%Rec		Acceptance Limits	
Fluorobenzene (Surr)		93		75 - 125	
Toluene-d8 (Surr)		88		75 - 125	
Ethylbenzene-d10		84		75 - 125	
4-Bromofluorobenzene (Surr)		78		75 - 125	
Trifluorotoluene (Surr)		103		75 - 125	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-W**

Lab Sample ID: 580-3718-13  
Client Matrix: Water

Date Sampled: 09/26/2006 1030  
Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method:	8260B	Analysis Batch: 580-11519	Instrument ID: SEA036
Preparation:	5030B		Lab File ID: HP12743.D
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	10/02/2006 1958		Final Weight/Volume: 5 mL
Date Prepared:	10/02/2006 1958		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND		0.13	1.0
Chloromethane	ND		0.18	1.0
Vinyl chloride	ND		0.18	1.0
Bromomethane	ND		0.23	1.0
Chloroethane	ND		0.19	5.0
Trichlorofluoromethane	ND		0.088	1.0
1,1-Dichloroethene	ND		0.098	1.0
Methylene Chloride	ND		0.090	1.0
trans-1,2-Dichloroethene	ND		0.074	1.0
1,1-Dichloroethane	ND		0.11	1.0
2,2-Dichloropropane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.079	1.0
Chlorobromomethane	ND		0.14	1.0
Chloroform	ND		0.067	1.0
1,1,1-Trichloroethane	ND		0.11	1.0
Carbon tetrachloride	ND		0.070	1.0
1,1-Dichloropropene	ND		0.080	1.0
Benzene	ND		0.10	1.0
1,2-Dichloroethane	ND		0.20	1.0
Trichloroethene	ND		0.074	1.0
1,2-Dichloropropane	ND		0.092	1.0
Dibromomethane	ND		0.13	1.0
Dichlorobromomethane	ND		0.076	1.0
cis-1,3-Dichloropropene	ND		0.064	1.0
Toluene	ND		0.066	1.0
trans-1,3-Dichloropropene	ND		0.082	1.0
1,1,2-Trichloroethane	ND		0.076	1.0
Tetrachloroethene	ND		0.088	1.0
1,3-Dichloropropane	ND		0.10	1.0
Chlorodibromomethane	ND		0.11	1.0
Ethylene Dibromide	ND		0.076	1.0
Chlorobenzene	ND		0.063	1.0
Ethylbenzene	ND		0.085	1.0
1,1,1,2-Tetrachloroethane	ND		0.073	1.0
1,1,2,2-Tetrachloroethane	ND		0.11	1.0
m-Xylene & p-Xylene	ND		0.17	2.0
o-Xylene	ND		0.068	1.0
Styrene	ND		0.061	1.0
Bromoform	ND		0.076	1.0
Isopropylbenzene	ND		0.084	1.0
Bromobenzene	ND		0.079	1.0
N-Propylbenzene	ND		0.069	1.0
1,2,3-Trichloropropane	ND		0.11	1.0

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-W**

Lab Sample ID: 580-3718-13  
Client Matrix: Water

Date Sampled: 09/26/2006 1030  
Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B	Analysis Batch: 580-11519	Instrument ID: SEA036
Preparation: 5030B		Lab File ID: HP12743.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Date Analyzed: 10/02/2006 1958		Final Weight/Volume: 5 mL
Date Prepared: 10/02/2006 1958		

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Chlorotoluene	ND		0.060	1.0
1,3,5-Trimethylbenzene	ND		0.077	1.0
4-Chlorotoluene	ND		0.098	1.0
tert-Butylbenzene	ND		0.048	1.0
1,2,4-Trimethylbenzene	ND		0.086	1.0
sec-Butylbenzene	ND		0.040	1.0
1,3-Dichlorobenzene	ND		0.040	1.0
4-Isopropyltoluene	ND		0.077	1.0
1,4-Dichlorobenzene	ND		0.052	1.0
n-Butylbenzene	ND		0.098	1.0
1,2-Dichlorobenzene	ND		0.070	1.0
1,2-Dibromo-3-Chloropropane	ND		0.43	2.0
1,2,4-Trichlorobenzene	ND		0.046	1.0
1,2,3-Trichlorobenzene	ND		0.089	1.0
Hexachlorobutadiene	ND		0.14	1.0
Naphthalene	ND		0.070	1.0
Surrogate	%Rec		Acceptance Limits	
Fluorobenzene (Surr)	90		80 - 120	
Toluene-d8 (Surr)	96		80 - 120	
Ethylbenzene-d10	95		80 - 120	
4-Bromofluorobenzene (Surr)	90		80 - 120	
Trifluorotoluene (Surr)	110		80 - 120	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-WDUP**

Lab Sample ID: 580-3718-14  
Client Matrix: Water

Date Sampled: 09/26/2006 1035  
Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method:	8260B	Analysis Batch: 580-11519	Instrument ID: SEA036
Preparation:	5030B		Lab File ID: HP12744.D
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	10/02/2006 2018		Final Weight/Volume: 5 mL
Date Prepared:	10/02/2006 2018		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND		0.13	1.0
Chloromethane	ND		0.18	1.0
Vinyl chloride	ND		0.18	1.0
Bromomethane	ND		0.23	1.0
Chloroethane	ND		0.19	5.0
Trichlorofluoromethane	ND		0.088	1.0
1,1-Dichloroethene	ND		0.098	1.0
Methylene Chloride	ND		0.090	1.0
trans-1,2-Dichloroethene	ND		0.074	1.0
1,1-Dichloroethane	ND		0.11	1.0
2,2-Dichloropropane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.079	1.0
Chlorobromomethane	ND		0.14	1.0
Chloroform	ND		0.067	1.0
1,1,1-Trichloroethane	ND		0.11	1.0
Carbon tetrachloride	ND		0.070	1.0
1,1-Dichloropropene	ND		0.080	1.0
Benzene	ND		0.10	1.0
1,2-Dichloroethane	ND		0.20	1.0
Trichloroethene	ND		0.074	1.0
1,2-Dichloropropane	ND		0.092	1.0
Dibromomethane	ND		0.13	1.0
Dichlorobromomethane	ND		0.076	1.0
cis-1,3-Dichloropropene	ND		0.064	1.0
Toluene	ND		0.066	1.0
trans-1,3-Dichloropropene	ND		0.082	1.0
1,1,2-Trichloroethane	ND		0.076	1.0
Tetrachloroethene	ND		0.088	1.0
1,3-Dichloropropane	ND		0.10	1.0
Chlorodibromomethane	ND		0.11	1.0
Ethylene Dibromide	ND		0.076	1.0
Chlorobenzene	ND		0.063	1.0
Ethylbenzene	ND		0.085	1.0
1,1,1,2-Tetrachloroethane	ND		0.073	1.0
1,1,2,2-Tetrachloroethane	ND		0.11	1.0
m-Xylene & p-Xylene	ND		0.17	2.0
o-Xylene	ND		0.068	1.0
Styrene	ND		0.061	1.0
Bromoform	ND		0.076	1.0
Isopropylbenzene	ND		0.084	1.0
Bromobenzene	ND		0.079	1.0
N-Propylbenzene	ND		0.069	1.0
1,2,3-Trichloropropane	ND		0.11	1.0

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-WDUP**

Lab Sample ID: 580-3718-14  
 Client Matrix: Water

Date Sampled: 09/26/2006 1035  
 Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B	Analysis Batch: 580-11519	Instrument ID: SEA036
Preparation: 5030B		Lab File ID: HP12744.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Date Analyzed: 10/02/2006 2018		Final Weight/Volume: 5 mL
Date Prepared: 10/02/2006 2018		

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Chlorotoluene	ND		0.060	1.0
1,3,5-Trimethylbenzene	ND		0.077	1.0
4-Chlorotoluene	ND		0.098	1.0
tert-Butylbenzene	ND		0.048	1.0
1,2,4-Trimethylbenzene	ND		0.086	1.0
sec-Butylbenzene	ND		0.040	1.0
1,3-Dichlorobenzene	ND		0.040	1.0
4-Isopropyltoluene	ND		0.077	1.0
1,4-Dichlorobenzene	ND		0.052	1.0
n-Butylbenzene	ND		0.098	1.0
1,2-Dichlorobenzene	ND		0.070	1.0
1,2-Dibromo-3-Chloropropane	ND		0.43	2.0
1,2,4-Trichlorobenzene	ND		0.046	1.0
1,2,3-Trichlorobenzene	ND		0.089	1.0
Hexachlorobutadiene	ND		0.14	1.0
Naphthalene	ND		0.070	1.0
Surrogate	%Rec		Acceptance Limits	
Fluorobenzene (Surr)	91		80 - 120	
Toluene-d8 (Surr)	96		80 - 120	
Ethylbenzene-d10	95		80 - 120	
4-Bromofluorobenzene (Surr)	95		80 - 120	
Trifluorotoluene (Surr)	109		80 - 120	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045**

Lab Sample ID: 580-3718-15

Date Sampled: 09/26/2006 1120

Client Matrix: Solid

% Moisture: 13.2

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11569

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11480

Lab File ID: AG29615.D

Dilution: 1.0

Initial Weight/Volume: 5.72 g

Date Analyzed: 10/03/2006 1707

Final Weight/Volume: 400 mL

Date Prepared: 10/02/2006 1518

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		11	81
Chloromethane		ND		15	81
Vinyl chloride		ND		10	32
Bromomethane		ND		56	400
Chloroethane		ND	*	58	400
Trichlorofluoromethane		ND	*	7.7	81
1,1-Dichloroethene		ND		11	32
Methylene Chloride		ND		12	81
trans-1,2-Dichloroethene		ND		8.7	81
1,1-Dichloroethane		ND		19	81
2,2-Dichloropropane		ND	*	9.5	81
cis-1,2-Dichloroethene		ND		12	81
Chlorobromomethane		ND		9.7	81
Chloroform		ND		7.7	81
1,1,1-Trichloroethane		ND		7.9	32
Carbon tetrachloride		ND		6.0	32
1,1-Dichloropropene		ND		6.2	81
Benzene		ND		5.6	16
1,2-Dichloroethane		ND		16	81
Trichloroethene		ND		6.0	32
1,2-Dichloropropane		ND		5.0	16
Dibromomethane		ND		15	81
Dichlorobromomethane		ND		5.6	81
cis-1,3-Dichloropropene		ND		5.6	81
Toluene		ND		15	81
trans-1,3-Dichloropropene		ND		5.6	81
1,1,2-Trichloroethane		ND		7.3	81
Tetrachloroethene		ND		15	50
1,3-Dichloropropane		ND		8.5	32
Chlorodibromomethane		ND		5.0	81
Ethylene Dibromide		ND		13	81
Chlorobenzene		ND		24	81
Ethylbenzene		ND		15	81
1,1,1,2-Tetrachloroethane		ND		7.7	81
1,1,2,2-Tetrachloroethane		ND		4.8	16
m-Xylene & p-Xylene		ND		30	81
o-Xylene		ND		15	81
Styrene		ND		6.4	81
Bromoform		ND		5.6	81
Isopropylbenzene		ND		12	81
Bromobenzene		ND		7.3	81
N-Propylbenzene		ND		14	81
1,2,3-Trichloropropane		ND		14	81



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045**

Lab Sample ID: 580-3718-15

Date Sampled: 09/26/2006 1120

Client Matrix: Solid

% Moisture: 13.2

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11569

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11480

Lab File ID: AG29615.D

Dilution: 1.0

Initial Weight/Volume: 5.72 g

Date Analyzed: 10/03/2006 1707

Final Weight/Volume: 400 mL

Date Prepared: 10/02/2006 1518

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Chlorotoluene		ND		12	81
1,3,5-Trimethylbenzene		ND		12	81
4-Chlorotoluene		ND		7.0	81
tert-Butylbenzene		ND		6.8	81
1,2,4-Trimethylbenzene		ND		14	81
sec-Butylbenzene		ND		3.2	81
1,3-Dichlorobenzene		ND		8.3	81
4-Isopropyltoluene		ND		5.6	81
1,4-Dichlorobenzene		ND		4.0	81
n-Butylbenzene		ND		4.8	81
1,2-Dichlorobenzene		ND		6.8	81
1,2-Dibromo-3-Chloropropane		ND	*	18	81
1,2,4-Trichlorobenzene		ND		7.9	81
1,2,3-Trichlorobenzene		ND		9.7	81
Hexachlorobutadiene		ND		13	81
Naphthalene		ND		5.2	81
Surrogate		%Rec		Acceptance Limits	
Fluorobenzene (Surr)		92		75 - 125	
Toluene-d8 (Surr)		89		75 - 125	
Ethylbenzene-d10		87		75 - 125	
4-Bromofluorobenzene (Surr)		83		75 - 125	
Trifluorotoluene (Surr)		100		75 - 125	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045DUP**

Lab Sample ID: 580-3718-16

Date Sampled: 09/26/2006 1125

Client Matrix: Solid

% Moisture: 8.1

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11569

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11480

Lab File ID: AG29616.D

Dilution: 1.0

Initial Weight/Volume: 5.81 g

Date Analyzed: 10/03/2006 1726

Final Weight/Volume: 400 mL

Date Prepared: 10/02/2006 1518

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		10	75
Chloromethane		ND		14	75
Vinyl chloride		ND		9.7	30
Bromomethane		ND		52	370
Chloroethane		ND	*	54	370
Trichlorofluoromethane		ND	*	7.1	75
1,1-Dichloroethene		ND		9.9	30
Methylene Chloride		ND		11	75
trans-1,2-Dichloroethene		ND		8.1	75
1,1-Dichloroethane		ND		18	75
2,2-Dichloropropane		ND	*	8.8	75
cis-1,2-Dichloroethene		ND		11	75
Chlorobromomethane		ND		9.0	75
Chloroform		ND		7.1	75
1,1,1-Trichloroethane		ND		7.3	30
Carbon tetrachloride		ND		5.6	30
1,1-Dichloropropene		ND		5.8	75
Benzene		ND		5.2	15
1,2-Dichloroethane		ND		15	75
Trichloroethene		ND		5.6	30
1,2-Dichloropropane		ND		4.7	15
Dibromomethane		ND		14	75
Dichlorobromomethane		ND		5.2	75
cis-1,3-Dichloropropene		ND		5.2	75
Toluene		ND		14	75
trans-1,3-Dichloropropene		ND		5.2	75
1,1,2-Trichloroethane		ND		6.7	75
Tetrachloroethene		ND		14	47
1,3-Dichloropropane		ND		7.9	30
Chlorodibromomethane		ND		4.7	75
Ethylene Dibromide		ND		12	75
Chlorobenzene		ND		22	75
Ethylbenzene		ND		13	75
1,1,1,2-Tetrachloroethane		ND		7.1	75
1,1,2,2-Tetrachloroethane		ND		4.5	15
m-Xylene & p-Xylene		ND		28	75
o-Xylene		ND		13	75
Styrene		ND		6.0	75
Bromoform		ND		5.2	75
Isopropylbenzene		ND		11	75
Bromobenzene		ND		6.7	75
N-Propylbenzene		ND		13	75
1,2,3-Trichloropropane		ND		13	75

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045DUP**

Lab Sample ID: 580-3718-16

Date Sampled: 09/26/2006 1125

Client Matrix: Solid

% Moisture: 8.1

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11569

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11480

Lab File ID: AG29616.D

Dilution: 1.0

Initial Weight/Volume: 5.81 g

Date Analyzed: 10/03/2006 1726

Final Weight/Volume: 400 mL

Date Prepared: 10/02/2006 1518

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Chlorotoluene		ND		11	75
1,3,5-Trimethylbenzene		ND		11	75
4-Chlorotoluene		ND		6.6	75
tert-Butylbenzene		ND		6.4	75
1,2,4-Trimethylbenzene		ND		13	75
sec-Butylbenzene		ND		3.0	75
1,3-Dichlorobenzene		ND		7.7	75
4-Isopropyltoluene		ND		5.2	75
1,4-Dichlorobenzene		ND		3.7	75
n-Butylbenzene		ND		4.5	75
1,2-Dichlorobenzene		ND		6.4	75
1,2-Dibromo-3-Chloropropane		ND	*	16	75
1,2,4-Trichlorobenzene		ND		7.3	75
1,2,3-Trichlorobenzene		ND		9.0	75
Hexachlorobutadiene		ND		12	75
Naphthalene		ND		4.9	75
Surrogate		%Rec		Acceptance Limits	
Fluorobenzene (Surr)		92		75 - 125	
Toluene-d8 (Surr)		89		75 - 125	
Ethylbenzene-d10		85		75 - 125	
4-Bromofluorobenzene (Surr)		81		75 - 125	
Trifluorotoluene (Surr)		100		75 - 125	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP08-060926-010**

Lab Sample ID: 580-3718-17

Date Sampled: 09/26/2006 1315

Client Matrix: Solid

% Moisture: 6.4

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11569

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11480

Lab File ID: AG29617.D

Dilution: 1.0

Initial Weight/Volume: 5.69 g

Date Analyzed: 10/03/2006 1745

Final Weight/Volume: 400 mL

Date Prepared: 10/02/2006 1518

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		11	75
Chloromethane		ND		14	75
Vinyl chloride		ND		9.8	30
Bromomethane		ND		53	380
Chloroethane		ND	*	54	380
Trichlorofluoromethane		ND	*	7.1	75
1,1-Dichloroethene		ND		10	30
Methylene Chloride		ND		11	75
trans-1,2-Dichloroethene		ND		8.1	75
1,1-Dichloroethane		ND		18	75
2,2-Dichloropropane		ND	*	8.8	75
cis-1,2-Dichloroethene		ND		11	75
Chlorobromomethane		ND		9.0	75
Chloroform		ND		7.1	75
1,1,1-Trichloroethane		ND		7.3	30
Carbon tetrachloride		ND		5.6	30
1,1-Dichloropropene		ND		5.8	75
Benzene		ND		5.3	15
1,2-Dichloroethane		ND		15	75
Trichloroethene		ND		5.6	30
1,2-Dichloropropane		ND		4.7	15
Dibromomethane		ND		14	75
Dichlorobromomethane		ND		5.3	75
cis-1,3-Dichloropropene		ND		5.3	75
Toluene		ND		14	75
trans-1,3-Dichloropropene		ND		5.3	75
1,1,2-Trichloroethane		ND		6.8	75
Tetrachloroethene		ND		14	47
1,3-Dichloropropane		ND		7.9	30
Chlorodibromomethane		ND		4.7	75
Ethylene Dibromide		ND		12	75
Chlorobenzene		ND		23	75
Ethylbenzene		ND		14	75
1,1,1,2-Tetrachloroethane		ND		7.1	75
1,1,2,2-Tetrachloroethane		ND		4.5	15
m-Xylene & p-Xylene		ND		28	75
o-Xylene		ND		14	75
Styrene		ND		6.0	75
Bromoform		ND		5.3	75
Isopropylbenzene		ND		11	75
Bromobenzene		ND		6.8	75
N-Propylbenzene		ND		13	75
1,2,3-Trichloropropane		ND		13	75

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP08-060926-010**

Lab Sample ID: 580-3718-17

Date Sampled: 09/26/2006 1315

Client Matrix: Solid

% Moisture: 6.4

Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B

Analysis Batch: 580-11569

Instrument ID: SEA001

Preparation: 5035

Prep Batch: 580-11480

Lab File ID: AG29617.D

Dilution: 1.0

Initial Weight/Volume: 5.69 g

Date Analyzed: 10/03/2006 1745

Final Weight/Volume: 400 mL

Date Prepared: 10/02/2006 1518

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2-Chlorotoluene		ND		11	75
1,3,5-Trimethylbenzene		ND		11	75
4-Chlorotoluene		ND		6.6	75
tert-Butylbenzene		ND		6.4	75
1,2,4-Trimethylbenzene		ND		13	75
sec-Butylbenzene		ND		3.0	75
1,3-Dichlorobenzene		ND		7.7	75
4-Isopropyltoluene		14	J	5.3	75
1,4-Dichlorobenzene		ND		3.8	75
n-Butylbenzene		ND		4.5	75
1,2-Dichlorobenzene		ND		6.4	75
1,2-Dibromo-3-Chloropropane		ND	*	17	75
1,2,4-Trichlorobenzene		ND		7.3	75
1,2,3-Trichlorobenzene		ND		9.0	75
Hexachlorobutadiene		ND		12	75
Naphthalene		110		4.9	75
Surrogate		%Rec		Acceptance Limits	
Fluorobenzene (Surr)		93		75 - 125	
Toluene-d8 (Surr)		88		75 - 125	
Ethylbenzene-d10		84		75 - 125	
4-Bromofluorobenzene (Surr)		79		75 - 125	
Trifluorotoluene (Surr)		93		75 - 125	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-W**

Lab Sample ID: 580-3718-18  
Client Matrix: Water

Date Sampled: 09/26/2006 1145  
Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method:	8260B	Analysis Batch: 580-11519	Instrument ID: SEA036
Preparation:	5030B		Lab File ID: HP12745.D
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	10/02/2006 2039		Final Weight/Volume: 5 mL
Date Prepared:	10/02/2006 2039		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND		0.13	1.0
Chloromethane	ND		0.18	1.0
Vinyl chloride	ND		0.18	1.0
Bromomethane	ND		0.23	1.0
Chloroethane	ND		0.19	5.0
Trichlorofluoromethane	ND		0.088	1.0
1,1-Dichloroethene	ND		0.098	1.0
Methylene Chloride	ND		0.090	1.0
trans-1,2-Dichloroethene	ND		0.074	1.0
1,1-Dichloroethane	ND		0.11	1.0
2,2-Dichloropropane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.079	1.0
Chlorobromomethane	ND		0.14	1.0
Chloroform	ND		0.067	1.0
1,1,1-Trichloroethane	ND		0.11	1.0
Carbon tetrachloride	ND		0.070	1.0
1,1-Dichloropropene	ND		0.080	1.0
Benzene	ND		0.10	1.0
1,2-Dichloroethane	ND		0.20	1.0
Trichloroethene	ND		0.074	1.0
1,2-Dichloropropane	ND		0.092	1.0
Dibromomethane	ND		0.13	1.0
Dichlorobromomethane	ND		0.076	1.0
cis-1,3-Dichloropropene	ND		0.064	1.0
Toluene	0.077	J	0.066	1.0
trans-1,3-Dichloropropene	ND		0.082	1.0
1,1,2-Trichloroethane	ND		0.076	1.0
Tetrachloroethene	ND		0.088	1.0
1,3-Dichloropropane	ND		0.10	1.0
Chlorodibromomethane	ND		0.11	1.0
Ethylene Dibromide	ND		0.076	1.0
Chlorobenzene	ND		0.063	1.0
Ethylbenzene	ND		0.085	1.0
1,1,1,2-Tetrachloroethane	ND		0.073	1.0
1,1,2,2-Tetrachloroethane	ND		0.11	1.0
m-Xylene & p-Xylene	0.22	J	0.17	2.0
o-Xylene	0.079	J	0.068	1.0
Styrene	ND		0.061	1.0
Bromoform	ND		0.076	1.0
Isopropylbenzene	ND		0.084	1.0
Bromobenzene	ND		0.079	1.0
N-Propylbenzene	ND		0.069	1.0
1,2,3-Trichloropropane	ND		0.11	1.0

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-W**

Lab Sample ID: 580-3718-18  
 Client Matrix: Water

Date Sampled: 09/26/2006 1145  
 Date Received: 09/26/2006 1139

### 8260B Volatile Organic Compounds by GC/MS

Method: 8260B	Analysis Batch: 580-11519	Instrument ID: SEA036
Preparation: 5030B		Lab File ID: HP12745.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Date Analyzed: 10/02/2006 2039		Final Weight/Volume: 5 mL
Date Prepared: 10/02/2006 2039		

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Chlorotoluene	ND		0.060	1.0
1,3,5-Trimethylbenzene	ND		0.077	1.0
4-Chlorotoluene	ND		0.098	1.0
tert-Butylbenzene	ND		0.048	1.0
1,2,4-Trimethylbenzene	ND		0.086	1.0
sec-Butylbenzene	ND		0.040	1.0
1,3-Dichlorobenzene	ND		0.040	1.0
4-Isopropyltoluene	2.7		0.077	1.0
1,4-Dichlorobenzene	ND		0.052	1.0
n-Butylbenzene	ND		0.098	1.0
1,2-Dichlorobenzene	ND		0.070	1.0
1,2-Dibromo-3-Chloropropane	ND		0.43	2.0
1,2,4-Trichlorobenzene	ND		0.046	1.0
1,2,3-Trichlorobenzene	ND		0.089	1.0
Hexachlorobutadiene	ND		0.14	1.0
Naphthalene	ND		0.070	1.0
Surrogate	%Rec		Acceptance Limits	
Fluorobenzene (Surr)	93		80 - 120	
Toluene-d8 (Surr)	94		80 - 120	
Ethylbenzene-d10	94		80 - 120	
4-Bromofluorobenzene (Surr)	92		80 - 120	
Trifluorotoluene (Surr)	107		80 - 120	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-010**

Lab Sample ID: 580-3718-1

Date Sampled: 09/25/2006 0945

Client Matrix: Solid

% Moisture: 12.9

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: 8270C

Analysis Batch: 580-11394

Instrument ID: SEA040

Preparation: 3550B

Prep Batch: 580-11301

Lab File ID: ak006324.D

Dilution: 1.0

Initial Weight/Volume: 10.8005 g

Date Analyzed: 09/28/2006 2357

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0847

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		29	110
Bis(2-chloroethyl)ether		ND		32	110
2-Chlorophenol		ND		24	110
1,3-Dichlorobenzene		ND		13	53
1,4-Dichlorobenzene		ND		8.1	53
Benzyl alcohol		ND		32	110
1,2-Dichlorobenzene		ND		18	53
2-Methylphenol		ND		30	110
Bis(2-chloroisopropyl) ether		ND		36	160
3 & 4 Methylphenol		ND		56	210
N-Nitrosodi-n-propylamine		ND		28	110
Hexachloroethane		ND		22	110
Nitrobenzene		ND		16	110
Isophorone		ND		28	110
2-Nitrophenol		ND		24	110
2,4-Dimethylphenol		ND		20	110
Benzoic acid		ND		880	2700
Bis(2-chloroethoxy)methane		ND		27	110
2,4-Dichlorophenol		ND		20	110
1,2,4-Trichlorobenzene		ND		11	53
Naphthalene		8.6	J	6.1	21
4-Chloroaniline		ND		29	110
Hexachlorobutadiene		ND		14	53
4-Chloro-3-methylphenol		ND		23	110
2-Methylnaphthalene		ND		3.3	21
Hexachlorocyclopentadiene		ND		27	110
2,4,6-Trichlorophenol		ND		35	160
2,4,5-Trichlorophenol		ND		24	110
2-Chloronaphthalene		ND		2.0	21
2-Nitroaniline		ND		20	110
Dimethyl phthalate		ND		8.2	110
Acenaphthylene		4.8	J	2.4	21
2,6-Dinitrotoluene		ND		20	110
3-Nitroaniline		ND		31	110
Acenaphthene		ND		6.1	21
2,4-Dinitrophenol		ND		220	1100
4-Nitrophenol		ND		280	1100
Dibenzofuran		ND		18	110
2,4-Dinitrotoluene		ND		15	110
Diethyl phthalate		ND		7.7	110
4-Chlorophenyl phenyl ether		ND		17	110
Fluorene		11	J	2.8	21
4-Nitroaniline		ND		20	110



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-010**

Lab Sample ID: 580-3718-1

Date Sampled: 09/25/2006 0945

Client Matrix: Solid

% Moisture: 12.9

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006324.D
Dilution:	1.0		Initial Weight/Volume: 10.8005 g
Date Analyzed:	09/28/2006 2357		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol		ND		290	1100
N-Nitrosodiphenylamine		ND		16	53
4-Bromophenyl phenyl ether		ND		11	110
Hexachlorobenzene		ND		12	53
Pentachlorophenol		ND		33	110
Phenanthrene		24		4.3	21
Anthracene		11	J	4.6	21
Di-n-butyl phthalate		48	J B	14	210
Fluoranthene		44		3.3	21
Pyrene		53		2.9	21
Butyl benzyl phthalate		ND		31	110
3,3'-Dichlorobenzidine		ND		9.7	210
Benzo[a]anthracene		32		6.9	27
Chrysene		45		8.0	27
Bis(2-ethylhexyl) phthalate		710	J	260	1600
Di-n-octyl phthalate		140	J	35	210
Benzofluoranthene		76		11	43
Benzo[a]pyrene		46	B	9.0	32
Indeno[1,2,3-cd]pyrene		35	J	13	43
Dibenz(a,h)anthracene		63		13	43
Benzo[g,h,i]perylene		35		7.8	27
Carbazole		ND		35	160
1-Methylnaphthalene		ND		9.3	32
Surrogate		%Rec		Acceptance Limits	
2-Fluorophenol		105		36 - 145	
Phenol-d5		101		38 - 149	
Nitrobenzene-d5		105		38 - 141	
2-Fluorobiphenyl		109		42 - 140	
2,4,6-Tribromophenol		108		28 - 143	
Terphenyl-d14		118		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-010**

Lab Sample ID: 580-3718-1

Date Sampled: 09/25/2006 0945

Client Matrix: Solid

% Moisture: 12.9

Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C

Analysis Batch: 580-11419

Instrument ID: SEA023

Preparation: 3550B

Prep Batch: 580-11302

Lab File ID: HP02388.D

Dilution: 1.0

Initial Weight/Volume: 10.8005 g

Date Analyzed: 09/29/2006 0447

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0900

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzo[a]anthracene		33		1.8	5.3
Chrysene		41		0.43	5.3
Benzo[fluoranthene		61	B	0.67	11
Benzo[a]pyrene		37	B	0.43	5.3
Indeno[1,2,3-cd]pyrene		24	B	0.27	5.3
Dibenz(a,h)anthracene		9.2	B	0.23	5.3
Benzo[g,h,i]perylene		19	B	0.26	5.3
Benzo[b]fluoranthene		44	B	0.27	5.3
Benzo[k]fluoranthene		17	B	0.30	5.3
Surrogate		%Rec		Acceptance Limits	
Nitrobenzene-d5		124		38 - 141	
2-Fluorobiphenyl		113		42 - 140	
Terphenyl-d14		80		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-040**

Lab Sample ID: 580-3718-2

Date Sampled: 09/25/2006 0950

Client Matrix: Solid

% Moisture: 27.3

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: 8270C

Analysis Batch: 580-11394

Instrument ID: SEA040

Preparation: 3550B

Prep Batch: 580-11301

Lab File ID: ak006325.D

Dilution: 1.0

Initial Weight/Volume: 10.9099 g

Date Analyzed: 09/29/2006 0021

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0847

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		34	130
Bis(2-chloroethyl)ether		ND		38	130
2-Chlorophenol		ND		29	130
1,3-Dichlorobenzene		ND		15	63
1,4-Dichlorobenzene		ND		9.6	63
Benzyl alcohol		ND		38	130
1,2-Dichlorobenzene		ND		21	63
2-Methylphenol		ND		35	130
Bis(2-chloroisopropyl) ether		ND		43	190
3 & 4 Methylphenol		ND		67	250
N-Nitrosodi-n-propylamine		ND		33	130
Hexachloroethane		ND		26	130
Nitrobenzene		ND		19	130
Isophorone		ND		33	130
2-Nitrophenol		ND		29	130
2,4-Dimethylphenol		ND		24	130
Benzoic acid		ND		1000	3200
Bis(2-chloroethoxy)methane		ND		32	130
2,4-Dichlorophenol		ND		24	130
1,2,4-Trichlorobenzene		ND		12	63
Naphthalene		18	J	7.2	25
4-Chloroaniline		ND		34	130
Hexachlorobutadiene		ND		16	63
4-Chloro-3-methylphenol		ND		28	130
2-Methylnaphthalene		ND		3.9	25
Hexachlorocyclopentadiene		ND		32	130
2,4,6-Trichlorophenol		ND		42	190
2,4,5-Trichlorophenol		ND		29	130
2-Chloronaphthalene		ND		2.4	25
2-Nitroaniline		ND		24	130
Dimethyl phthalate		ND		9.7	130
Acenaphthylene		ND		2.9	25
2,6-Dinitrotoluene		ND		24	130
3-Nitroaniline		ND		37	130
Acenaphthene		ND		7.2	25
2,4-Dinitrophenol		ND		260	1300
4-Nitrophenol		ND		330	1300
Dibenzofuran		ND		21	130
2,4-Dinitrotoluene		ND		18	130
Diethyl phthalate		ND		9.1	130
4-Chlorophenyl phenyl ether		ND		20	130
Fluorene		ND		3.3	25
4-Nitroaniline		ND		24	130

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-040**

Lab Sample ID: 580-3718-2

Date Sampled: 09/25/2006 0950

Client Matrix: Solid

% Moisture: 27.3

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: 8270C

Analysis Batch: 580-11394

Instrument ID: SEA040

Preparation: 3550B

Prep Batch: 580-11301

Lab File ID: ak006325.D

Dilution: 1.0

Initial Weight/Volume: 10.9099 g

Date Analyzed: 09/29/2006 0021

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0847

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol		ND		340	1300
N-Nitrosodiphenylamine		ND		19	63
4-Bromophenyl phenyl ether		ND		13	130
Hexachlorobenzene		ND		14	63
Pentachlorophenol		ND		39	130
Phenanthrene		ND		5.0	25
Anthracene		ND		5.4	25
Di-n-butyl phthalate		290	B	16	250
Fluoranthene		ND		3.9	25
Pyrene		ND		3.4	25
Butyl benzyl phthalate		ND		37	130
3,3'-Dichlorobenzidine		ND		11	250
Benzo[a]anthracene		ND		8.2	32
Chrysene		ND		9.5	32
Bis(2-ethylhexyl) phthalate		ND		300	1900
Di-n-octyl phthalate		ND		42	250
Benzofluoranthene		ND		13	50
Benzo[a]pyrene		ND		11	38
Indeno[1,2,3-cd]pyrene		ND		15	50
Dibenz(a,h)anthracene		ND		15	50
Benzo[g,h,i]perylene		ND		9.2	32
Carbazole		ND		42	190
1-Methylnaphthalene		ND		11	38
Surrogate		%Rec		Acceptance Limits	
2-Fluorophenol		99		36 - 145	
Phenol-d5		93		38 - 149	
Nitrobenzene-d5		108		38 - 141	
2-Fluorobiphenyl		104		42 - 140	
2,4,6-Tribromophenol		111		28 - 143	
Terphenyl-d14		83		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-040**

Lab Sample ID: 580-3718-2

Date Sampled: 09/25/2006 0950

Client Matrix: Solid

% Moisture: 27.3

Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C

Analysis Batch: 580-11419

Instrument ID: SEA023

Preparation: 3550B

Prep Batch: 580-11302

Lab File ID: HP02389.D

Dilution: 1.0

Initial Weight/Volume: 10.9099 g

Date Analyzed: 09/29/2006 0514

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0900

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzo[a]anthracene		ND		2.1	6.3
Chrysene		ND		0.50	6.3
Benzofluoranthene		ND		0.79	13
Benzo[a]pyrene		45	B	0.50	6.3
Indeno[1,2,3-cd]pyrene		ND		0.32	6.3
Dibenz(a,h)anthracene		ND		0.28	6.3
Benzo[g,h,i]perylene		ND		0.30	6.3
Benzo[b]fluoranthene		ND		0.32	6.3
Benzo[k]fluoranthene		ND		0.35	6.3
Surrogate		%Rec		Acceptance Limits	
Nitrobenzene-d5		119		38 - 141	
2-Fluorobiphenyl		90		42 - 140	
Terphenyl-d14		79		42 - 151	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-W**

Lab Sample ID: 580-3718-3  
Client Matrix: Water

Date Sampled: 09/25/2006 1000  
Date Received: 09/26/2006 1139

## 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method:	8270C	Analysis Batch: 580-11408	Instrument ID: SEA023
Preparation:	3510C	Prep Batch: 580-11299	Lab File ID: HP02373.D
Dilution:	1.0		Initial Weight/Volume: 990 mL
Date Analyzed:	09/28/2006 2212		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0838		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzo[a]anthracene	0.054	J B	0.0091	0.10
Chrysene	0.028	J	0.0091	0.10
Benzofluoranthene	0.10	J B	0.031	0.20
Benzo[a]pyrene	0.073	J	0.061	0.20
Indeno[1,2,3-cd]pyrene	0.072	J B	0.015	0.10
Dibenz(a,h)anthracene	0.056	J B	0.012	0.10
Benzo[g,h,i]perylene	0.051	J B	0.018	0.10
Benzo[b]fluoranthene	0.056	J B	0.023	0.10
Benzo[k]fluoranthene	0.043	J B	0.011	0.10
Surrogate	%Rec		Acceptance Limits	
Nitrobenzene-d5	128		34 - 146	
2-Fluorobiphenyl	104		35 - 143	
Terphenyl-d14	82		35 - 166	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-W**

Lab Sample ID: 580-3718-3  
Client Matrix: Water

Date Sampled: 09/25/2006 1000  
Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11421	Instrument ID: SEA040
Preparation:	3510C	Prep Batch: 580-11292	Lab File ID: ak006310.D
Dilution:	1.0		Initial Weight/Volume: 990 mL
Date Analyzed:	09/28/2006 1827		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0759		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Phenol	ND		0.075	3.0
Bis(2-chloroethyl)ether	ND		0.18	2.0
2-Chlorophenol	ND		0.22	2.0
1,3-Dichlorobenzene	ND		0.11	2.0
1,4-Dichlorobenzene	ND		0.12	2.0
Benzyl alcohol	0.22	J	0.13	2.0
1,2-Dichlorobenzene	ND		0.11	2.0
2-Methylphenol	ND		0.38	2.0
Bis(2-chloroisopropyl) ether	ND		0.089	2.0
3 & 4 Methylphenol	ND		0.17	4.0
N-Nitrosodi-n-propylamine	ND		0.20	2.0
Hexachloroethane	ND		0.13	3.0
Nitrobenzene	ND		0.076	2.0
Isophorone	ND		0.11	2.0
2-Nitrophenol	ND		0.21	2.0
2,4-Dimethylphenol	ND		0.18	10
Benzoic acid	5.4	J	0.21	10
Bis(2-chloroethoxy)methane	ND		0.096	2.0
2,4-Dichlorophenol	ND		0.13	2.0
1,2,4-Trichlorobenzene	ND		0.10	2.0
Naphthalene	ND		0.014	2.0
4-Chloroaniline	ND		0.19	2.0
Hexachlorobutadiene	ND		0.16	3.0
4-Chloro-3-methylphenol	ND		0.14	2.0
2-Methylnaphthalene	ND		0.056	1.0
Hexachlorocyclopentadiene	ND		0.12	10
2,4,6-Trichlorophenol	ND		0.10	3.0
2,4,5-Trichlorophenol	ND		0.086	2.0
2-Chloronaphthalene	ND		0.030	0.30
2-Nitroaniline	ND		0.11	2.0
Dimethyl phthalate	0.14	J	0.12	2.0
Acenaphthylene	ND		0.026	0.40
2,6-Dinitrotoluene	ND		0.14	2.0
3-Nitroaniline	ND		0.57	2.0
Acenaphthene	0.081	J	0.012	0.51
2,4-Dinitrophenol	ND		0.59	25
4-Nitrophenol	ND		1.6	10
Dibenzofuran	ND		0.099	2.0
2,4-Dinitrotoluene	ND		0.12	2.0
Diethyl phthalate	1.0	J	0.094	2.0
4-Chlorophenyl phenyl ether	ND		0.12	2.0
Fluorene	0.10	J	0.042	0.30
4-Nitroaniline	ND		0.18	3.0

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-W**

Lab Sample ID: 580-3718-3  
Client Matrix: Water

Date Sampled: 09/25/2006 1000  
Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11421	Instrument ID: SEA040
Preparation:	3510C	Prep Batch: 580-11292	Lab File ID: ak006310.D
Dilution:	1.0		Initial Weight/Volume: 990 mL
Date Analyzed:	09/28/2006 1827		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0759		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol	ND		0.54	20
N-Nitrosodiphenylamine	ND		0.13	2.0
4-Bromophenyl phenyl ether	ND		0.10	2.0
Hexachlorobenzene	ND		0.083	2.0
Pentachlorophenol	ND		0.13	3.5
Phenanthrene	0.14	J	0.024	0.40
Anthracene	0.028	J	0.019	0.20
Di-n-butyl phthalate	1.1	J B	0.089	2.0
Fluoranthene	0.070	J	0.027	0.25
Pyrene	0.10	J	0.020	0.30
Butyl benzyl phthalate	ND		0.24	3.0
3,3'-Dichlorobenzidine	ND		1.6	10
Benzo[a]anthracene	ND		0.033	0.30
Chrysene	ND		0.045	0.20
Bis(2-ethylhexyl) phthalate	0.42	J	0.32	15
Di-n-octyl phthalate	ND		0.18	2.0
Benzofluoranthene	ND		0.056	0.40
Benzo[a]pyrene	ND		0.027	0.20
Indeno[1,2,3-cd]pyrene	ND		0.052	0.30
Dibenz(a,h)anthracene	ND		0.046	0.30
Benzo[g,h,i]perylene	ND		0.061	0.30
Carbazole	ND		0.091	2.0
1-Methylnaphthalene	ND		0.053	0.30
Surrogate	%Rec		Acceptance Limits	
2-Fluorophenol	43		10 - 120	
Phenol-d5	26		10 - 102	
Nitrobenzene-d5	104		34 - 146	
2-Fluorobiphenyl	101		35 - 143	
2,4,6-Tribromophenol	92		29 - 151	
Terphenyl-d14	111		35 - 166	



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP03-060925-010**

Lab Sample ID: 580-3718-4

Date Sampled: 09/25/2006 1050

Client Matrix: Solid

% Moisture: 8.7

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: 8270C

Analysis Batch: 580-11394

Instrument ID: SEA040

Preparation: 3550B

Prep Batch: 580-11301

Lab File ID: ak006343.D

Dilution: 1.0

Initial Weight/Volume: 10.1120 g

Date Analyzed: 09/29/2006 0739

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0847

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		29	110
Bis(2-chloroethyl)ether		ND		32	110
2-Chlorophenol		ND		25	110
1,3-Dichlorobenzene		ND		13	54
1,4-Dichlorobenzene		ND		8.2	54
Benzyl alcohol		ND		32	110
1,2-Dichlorobenzene		ND		18	54
2-Methylphenol		ND		30	110
Bis(2-chloroisopropyl) ether		ND		37	160
3 & 4 Methylphenol		ND		57	220
N-Nitrosodi-n-propylamine		ND		28	110
Hexachloroethane		ND		23	110
Nitrobenzene		ND		16	110
Isophorone		ND		28	110
2-Nitrophenol		ND		25	110
2,4-Dimethylphenol		ND		21	110
Benzoic acid		ND		900	2700
Bis(2-chloroethoxy)methane		ND		27	110
2,4-Dichlorophenol		ND		21	110
1,2,4-Trichlorobenzene		ND		11	54
Naphthalene		8.8	J	6.2	22
4-Chloroaniline		ND		29	110
Hexachlorobutadiene		ND		14	54
4-Chloro-3-methylphenol		ND		24	110
2-Methylnaphthalene		ND		3.4	22
Hexachlorocyclopentadiene		ND		27	110
2,4,6-Trichlorophenol		ND		36	160
2,4,5-Trichlorophenol		ND		25	110
2-Chloronaphthalene		ND		2.1	22
2-Nitroaniline		ND		21	110
Dimethyl phthalate		ND		8.3	110
Acenaphthylene		4.7	J	2.5	22
2,6-Dinitrotoluene		ND		21	110
3-Nitroaniline		ND		31	110
Acenaphthene		ND		6.2	22
2,4-Dinitrophenol		ND		220	1100
4-Nitrophenol		ND		280	1100
Dibenzofuran		ND		18	110
2,4-Dinitrotoluene		ND		15	110
Diethyl phthalate		ND		7.8	110
4-Chlorophenyl phenyl ether		ND		17	110
Fluorene		ND		2.8	22
4-Nitroaniline		ND		21	110

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP03-060925-010**

Lab Sample ID: 580-3718-4

Date Sampled: 09/25/2006 1050

Client Matrix: Solid

% Moisture: 8.7

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: 8270C

Analysis Batch: 580-11394

Instrument ID: SEA040

Preparation: 3550B

Prep Batch: 580-11301

Lab File ID: ak006343.D

Dilution: 1.0

Initial Weight/Volume: 10.1120 g

Date Analyzed: 09/29/2006 0739

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0847

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol		ND		290	1100
N-Nitrosodiphenylamine		ND		16	54
4-Bromophenyl phenyl ether		ND		11	110
Hexachlorobenzene		ND		12	54
Pentachlorophenol		ND		34	110
Phenanthrene		21	J	4.3	22
Anthracene		9.9	J	4.7	22
Di-n-butyl phthalate		52	J B	14	220
Fluoranthene		78		3.4	22
Pyrene		81		2.9	22
Butyl benzyl phthalate		ND		31	110
3,3'-Dichlorobenzidine		ND		9.9	220
Benzo[a]anthracene		53		7.0	27
Chrysene		58		8.1	27
Bis(2-ethylhexyl) phthalate		ND		260	1600
Di-n-octyl phthalate		ND		36	220
Benzofluoranthene		100		11	43
Benzo[a]pyrene		51	B	9.2	32
Indeno[1,2,3-cd]pyrene		40	J	13	43
Dibenz(a,h)anthracene		66		13	43
Benzo[g,h,i]perylene		48		7.9	27
Carbazole		ND		36	160
1-Methylnaphthalene		ND		9.4	32
Surrogate		%Rec		Acceptance Limits	
2-Fluorophenol		103		36 - 145	
Phenol-d5		97		38 - 149	
Nitrobenzene-d5		99		38 - 141	
2-Fluorobiphenyl		102		42 - 140	
2,4,6-Tribromophenol		102		28 - 143	
Terphenyl-d14		112		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP03-060925-010**

Lab Sample ID: 580-3718-4

Date Sampled: 09/25/2006 1050

Client Matrix: Solid

% Moisture: 8.7

Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C

Analysis Batch: 580-11419

Instrument ID: SEA023

Preparation: 3550B

Prep Batch: 580-11302

Lab File ID: HP02390.D

Dilution: 1.0

Initial Weight/Volume: 10.1120 g

Date Analyzed: 09/29/2006 0541

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0900

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzo[a]anthracene		41		1.8	5.4
Chrysene		56		0.43	5.4
Benzo[fluoranthene		70	B	0.68	11
Benzo[a]pyrene		41	B	0.43	5.4
Indeno[1,2,3-cd]pyrene		25	B	0.27	5.4
Dibenz(a,h)anthracene		4.2	J B	0.24	5.4
Benzo[g,h,i]perylene		23	B	0.26	5.4
Benzo[b]fluoranthene		52	B	0.27	5.4
Benzo[k]fluoranthene		16	B	0.30	5.4
Surrogate		%Rec		Acceptance Limits	
Nitrobenzene-d5		125		38 - 141	
2-Fluorobiphenyl		105		42 - 140	
Terphenyl-d14		84		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP02-060925-010**

Lab Sample ID: 580-3718-5

Date Sampled: 09/25/2006 1200

Client Matrix: Solid

% Moisture: 6.2

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: 8270C

Analysis Batch: 580-11394

Instrument ID: SEA040

Preparation: 3550B

Prep Batch: 580-11301

Lab File ID: ak006327.D

Dilution: 10

Initial Weight/Volume: 10.6770 g

Date Analyzed: 09/29/2006 0110

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0847

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		270	1000
Bis(2-chloroethyl)ether		ND		300	1000
2-Chlorophenol		ND		230	1000
1,3-Dichlorobenzene		ND		120	500
1,4-Dichlorobenzene		ND		76	500
Benzyl alcohol		ND		300	1000
1,2-Dichlorobenzene		ND		170	500
2-Methylphenol		ND		280	1000
Bis(2-chloroisopropyl) ether		ND		340	1500
3 & 4 Methylphenol		ND		530	2000
N-Nitrosodi-n-propylamine		ND		260	1000
Hexachloroethane		ND		210	1000
Nitrobenzene		ND		150	1000
Isophorone		ND		260	1000
2-Nitrophenol		ND		230	1000
2,4-Dimethylphenol		ND		190	1000
Benzoic acid		ND		8300	25000
Bis(2-chloroethoxy)methane		ND		250	1000
2,4-Dichlorophenol		ND		190	1000
1,2,4-Trichlorobenzene		ND		99	500
Naphthalene		ND		57	200
4-Chloroaniline		ND		270	1000
Hexachlorobutadiene		ND		130	500
4-Chloro-3-methylphenol		ND		220	1000
2-Methylnaphthalene		ND		31	200
Hexachlorocyclopentadiene		ND		250	1000
2,4,6-Trichlorophenol		ND		330	1500
2,4,5-Trichlorophenol		ND		230	1000
2-Chloronaphthalene		ND		19	200
2-Nitroaniline		ND		190	1000
Dimethyl phthalate		ND		77	1000
Acenaphthylene		ND		23	200
2,6-Dinitrotoluene		ND		190	1000
3-Nitroaniline		ND		290	1000
Acenaphthene		ND		57	200
2,4-Dinitrophenol		ND		2000	10000
4-Nitrophenol		ND		2600	10000
Dibenzofuran		ND		170	1000
2,4-Dinitrotoluene		ND		140	1000
Diethyl phthalate		ND		72	1000
4-Chlorophenyl phenyl ether		ND		160	1000
Fluorene		ND		26	200
4-Nitroaniline		ND		190	1000

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP02-060925-010**

Lab Sample ID: 580-3718-5

Date Sampled: 09/25/2006 1200

Client Matrix: Solid

% Moisture: 6.2

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006327.D
Dilution:	10		Initial Weight/Volume: 10.6770 g
Date Analyzed:	09/29/2006 0110		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol		ND		2700	10000
N-Nitrosodiphenylamine		ND		150	500
4-Bromophenyl phenyl ether		ND		100	1000
Hexachlorobenzene		ND		110	500
Pentachlorophenol		ND		310	1000
Phenanthrene		180	J	40	200
Anthracene		ND		43	200
Di-n-butyl phthalate		430	J B	130	2000
Fluoranthene		100	J	31	200
Pyrene		340		27	200
Butyl benzyl phthalate		ND		290	1000
3,3'-Dichlorobenzidine		ND		91	2000
Benzo[a]anthracene		ND		65	250
Chrysene		560		75	250
Bis(2-ethylhexyl) phthalate		ND		2400	15000
Di-n-octyl phthalate		ND		330	2000
Benzofluoranthene		ND		100	400
Benzo[a]pyrene		ND		85	300
Indeno[1,2,3-cd]pyrene		ND		120	400
Dibenz(a,h)anthracene		ND		120	400
Benzo[g,h,i]perylene		350		73	250
Carbazole		ND		330	1500
1-Methylnaphthalene		ND		87	300
Surrogate		%Rec		Acceptance Limits	
2-Fluorophenol		83		36 - 145	
Phenol-d5		91		38 - 149	
Nitrobenzene-d5		94		38 - 141	
2-Fluorobiphenyl		94		42 - 140	
2,4,6-Tribromophenol		108		28 - 143	
Terphenyl-d14		116		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP02-060925-010**

Lab Sample ID: 580-3718-5

Date Sampled: 09/25/2006 1200

Client Matrix: Solid

% Moisture: 6.2

Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C

Analysis Batch: 580-11419

Instrument ID: SEA023

Preparation: 3550B

Prep Batch: 580-11302

Lab File ID: HP02391.D

Dilution: 1.0

Initial Weight/Volume: 10.6770 g

Date Analyzed: 09/29/2006 0609

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0900

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzo[a]anthracene		390		1.7	5.0
Chrysene		140		0.40	5.0
Benzo[fluoranthene		150	B	0.63	10
Benzo[a]pyrene		130	B	0.40	5.0
Indeno[1,2,3-cd]pyrene		25	B	0.25	5.0
Dibenz(a,h)anthracene		19	B	0.22	5.0
Benzo[g,h,i]perylene		58	B	0.24	5.0
Benzo[b]fluoranthene		100	B	0.25	5.0
Benzo[k]fluoranthene		22	B	0.28	5.0
Surrogate		%Rec		Acceptance Limits	
Nitrobenzene-d5		116		38 - 141	
2-Fluorobiphenyl		94		42 - 140	
Terphenyl-d14		83		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-010**

Lab Sample ID: 580-3718-6

Date Sampled: 09/25/2006 1245

Client Matrix: Solid

% Moisture: 9.7

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006328.D
Dilution:	1.0		Initial Weight/Volume: 10.3335 g
Date Analyzed:	09/29/2006 0134		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		29	110
Bis(2-chloroethyl)ether		ND		32	110
2-Chlorophenol		ND		25	110
1,3-Dichlorobenzene		ND		13	54
1,4-Dichlorobenzene		ND		8.1	54
Benzyl alcohol		ND		32	110
1,2-Dichlorobenzene		ND		18	54
2-Methylphenol		ND		30	110
Bis(2-chloroisopropyl) ether		ND		36	160
3 & 4 Methylphenol		ND		57	210
N-Nitrosodi-n-propylamine		ND		28	110
Hexachloroethane		ND		23	110
Nitrobenzene		ND		16	110
Isophorone		ND		28	110
2-Nitrophenol		ND		25	110
2,4-Dimethylphenol		ND		20	110
Benzoic acid		ND		890	2700
Bis(2-chloroethoxy)methane		ND		27	110
2,4-Dichlorophenol		ND		20	110
1,2,4-Trichlorobenzene		ND		11	54
Naphthalene		ND		6.1	21
4-Chloroaniline		ND		29	110
Hexachlorobutadiene		ND		14	54
4-Chloro-3-methylphenol		ND		24	110
2-Methylnaphthalene		ND		3.3	21
Hexachlorocyclopentadiene		ND		27	110
2,4,6-Trichlorophenol		ND		35	160
2,4,5-Trichlorophenol		ND		25	110
2-Chloronaphthalene		ND		2.0	21
2-Nitroaniline		ND		20	110
Dimethyl phthalate		ND		8.3	110
Acenaphthylene		ND		2.5	21
2,6-Dinitrotoluene		ND		20	110
3-Nitroaniline		ND		31	110
Acenaphthene		ND		6.1	21
2,4-Dinitrophenol		ND		220	1100
4-Nitrophenol		ND		280	1100
Dibenzofuran		ND		18	110
2,4-Dinitrotoluene		ND		15	110
Diethyl phthalate		ND		7.7	110
4-Chlorophenyl phenyl ether		ND		17	110
Fluorene		ND		2.8	21
4-Nitroaniline		ND		20	110

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-010**

Lab Sample ID: 580-3718-6

Date Sampled: 09/25/2006 1245

Client Matrix: Solid

% Moisture: 9.7

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006328.D
Dilution:	1.0		Initial Weight/Volume: 10.3335 g
Date Analyzed:	09/29/2006 0134		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol		ND		290	1100
N-Nitrosodiphenylamine		ND		16	54
4-Bromophenyl phenyl ether		ND		11	110
Hexachlorobenzene		ND		12	54
Pentachlorophenol		ND		33	110
Phenanthrene		27		4.3	21
Anthracene		ND		4.6	21
Di-n-butyl phthalate		51	J B	14	210
Fluoranthene		23		3.3	21
Pyrene		25		2.9	21
Butyl benzyl phthalate		43	J	31	110
3,3'-Dichlorobenzidine		ND		9.8	210
Benzo[a]anthracene		ND		7.0	27
Chrysene		ND		8.0	27
Bis(2-ethylhexyl) phthalate		730	J	260	1600
Di-n-octyl phthalate		ND		35	210
Benzofluoranthene		ND		11	43
Benzo[a]pyrene		28	J B	9.1	32
Indeno[1,2,3-cd]pyrene		29	J	13	43
Dibenz(a,h)anthracene		ND		13	43
Benzo[g,h,i]perylene		33		7.8	27
Carbazole		ND		35	160
1-Methylnaphthalene		ND		9.3	32
Surrogate		%Rec		Acceptance Limits	
2-Fluorophenol		99		36 - 145	
Phenol-d5		101		38 - 149	
Nitrobenzene-d5		98		38 - 141	
2-Fluorobiphenyl		98		42 - 140	
2,4,6-Tribromophenol		87		28 - 143	
Terphenyl-d14		111		42 - 151	



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-010**

Lab Sample ID: 580-3718-6

Date Sampled: 09/25/2006 1245

Client Matrix: Solid

% Moisture: 9.7

Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C

Analysis Batch: 580-11419

Instrument ID: SEA023

Preparation: 3550B

Prep Batch: 580-11302

Lab File ID: HP02392.D

Dilution: 1.0

Initial Weight/Volume: 10.3335 g

Date Analyzed: 09/29/2006 0636

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0900

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzo[a]anthracene		8.3		1.8	5.4
Chrysene		18		0.43	5.4
Benzo[fluoranthene		22	B	0.68	11
Benzo[a]pyrene		14	B	0.43	5.4
Indeno[1,2,3-cd]pyrene		12	B	0.27	5.4
Dibenz(a,h)anthracene		ND		0.24	5.4
Benzo[g,h,i]perylene		11	B	0.26	5.4
Benzo[b]fluoranthene		16	B	0.27	5.4
Benzo[k]fluoranthene		5.1	J B	0.30	5.4
Surrogate		%Rec		Acceptance Limits	
Nitrobenzene-d5		122		38 - 141	
2-Fluorobiphenyl		99		42 - 140	
Terphenyl-d14		78		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-W**

Lab Sample ID: 580-3718-7  
Client Matrix: Water

Date Sampled: 09/25/2006 1315  
Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C	Analysis Batch: 580-11408	Instrument ID: SEA023
Preparation: 3510C	Prep Batch: 580-11299	Lab File ID: HP02374.D
Dilution: 1.0		Initial Weight/Volume: 960 mL
Date Analyzed: 09/28/2006 2239		Final Weight/Volume: 10 mL
Date Prepared: 09/28/2006 0838		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzo[a]anthracene	0.029	J B	0.0094	0.10
Chrysene	0.056	J	0.0094	0.10
Benzofluoranthene	0.093	J B	0.032	0.21
Benzo[a]pyrene	ND		0.063	0.21
Indeno[1,2,3-cd]pyrene	0.11	B	0.016	0.10
Dibenz(a,h)anthracene	0.038	J B	0.013	0.10
Benzo[g,h,i]perylene	0.079	J B	0.019	0.10
Benzo[b]fluoranthene	0.074	J B	0.024	0.10
Benzo[k]fluoranthene	0.022	J B	0.011	0.10
Surrogate	%Rec		Acceptance Limits	
Nitrobenzene-d5	123		34 - 146	
2-Fluorobiphenyl	98		35 - 143	
Terphenyl-d14	77		35 - 166	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-W**

Lab Sample ID: 580-3718-7  
Client Matrix: Water

Date Sampled: 09/25/2006 1315  
Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11421	Instrument ID: SEA040
Preparation:	3510C	Prep Batch: 580-11292	Lab File ID: ak006311.D
Dilution:	1.0		Initial Weight/Volume: 960 mL
Date Analyzed:	09/28/2006 1851		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0759		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Phenol	ND		0.077	3.1
Bis(2-chloroethyl)ether	ND		0.19	2.1
2-Chlorophenol	ND		0.23	2.1
1,3-Dichlorobenzene	ND		0.11	2.1
1,4-Dichlorobenzene	ND		0.13	2.1
Benzyl alcohol	0.14	J	0.14	2.1
1,2-Dichlorobenzene	ND		0.11	2.1
2-Methylphenol	ND		0.40	2.1
Bis(2-chloroisopropyl) ether	ND		0.092	2.1
3 & 4 Methylphenol	9.6		0.18	4.2
N-Nitrosodi-n-propylamine	ND		0.21	2.1
Hexachloroethane	ND		0.14	3.1
Nitrobenzene	ND		0.078	2.1
Isophorone	ND		0.11	2.1
2-Nitrophenol	ND		0.22	2.1
2,4-Dimethylphenol	ND		0.19	10
Benzoic acid	11		0.22	10
Bis(2-chloroethoxy)methane	ND		0.099	2.1
2,4-Dichlorophenol	ND		0.14	2.1
1,2,4-Trichlorobenzene	ND		0.10	2.1
Naphthalene	1.2	J	0.015	2.1
4-Chloroaniline	ND		0.20	2.1
Hexachlorobutadiene	ND		0.17	3.1
4-Chloro-3-methylphenol	ND		0.15	2.1
2-Methylnaphthalene	1.3		0.057	1.0
Hexachlorocyclopentadiene	ND		0.13	10
2,4,6-Trichlorophenol	ND		0.10	3.1
2,4,5-Trichlorophenol	ND		0.089	2.1
2-Chloronaphthalene	ND		0.031	0.31
2-Nitroaniline	ND		0.11	2.1
Dimethyl phthalate	ND		0.13	2.1
Acenaphthylene	ND		0.027	0.42
2,6-Dinitrotoluene	ND		0.15	2.1
3-Nitroaniline	ND		0.58	2.1
Acenaphthene	ND		0.013	0.52
2,4-Dinitrophenol	ND		0.60	26
4-Nitrophenol	ND		1.7	10
Dibenzofuran	ND		0.10	2.1
2,4-Dinitrotoluene	ND		0.13	2.1
Diethyl phthalate	0.39	J	0.097	2.1
4-Chlorophenyl phenyl ether	ND		0.13	2.1
Fluorene	ND		0.044	0.31
4-Nitroaniline	ND		0.19	3.1

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-W**

Lab Sample ID: 580-3718-7  
 Client Matrix: Water

Date Sampled: 09/25/2006 1315  
 Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11421	Instrument ID: SEA040
Preparation:	3510C	Prep Batch: 580-11292	Lab File ID: ak006311.D
Dilution:	1.0		Initial Weight/Volume: 960 mL
Date Analyzed:	09/28/2006 1851		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0759		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol	ND		0.55	21
N-Nitrosodiphenylamine	ND		0.14	2.1
4-Bromophenyl phenyl ether	ND		0.10	2.1
Hexachlorobenzene	ND		0.085	2.1
Pentachlorophenol	3.3	J	0.14	3.6
Phenanthrene	0.10	J	0.025	0.42
Anthracene	0.068	J	0.020	0.21
Di-n-butyl phthalate	3.6	B	0.092	2.1
Fluoranthene	0.086	J	0.028	0.26
Pyrene	0.13	J	0.021	0.31
Butyl benzyl phthalate	2.7	J	0.25	3.1
3,3'-Dichlorobenzidine	ND		1.7	10
Benzo[a]anthracene	ND		0.034	0.31
Chrysene	ND		0.047	0.21
Bis(2-ethylhexyl) phthalate	2.8	J	0.33	16
Di-n-octyl phthalate	ND		0.19	2.1
Benzofluoranthene	ND		0.057	0.42
Benzo[a]pyrene	ND		0.028	0.21
Indeno[1,2,3-cd]pyrene	ND		0.053	0.31
Dibenz(a,h)anthracene	ND		0.048	0.31
Benzo[g,h,i]perylene	ND		0.063	0.31
Carbazole	ND		0.094	2.1
1-Methylnaphthalene	0.70		0.054	0.31
Surrogate	%Rec		Acceptance Limits	
2-Fluorophenol	41		10 - 120	
Phenol-d5	28		10 - 102	
Nitrobenzene-d5	105		34 - 146	
2-Fluorobiphenyl	103		35 - 143	
2,4,6-Tribromophenol	93		29 - 151	
Terphenyl-d14	112		35 - 166	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-010**

Lab Sample ID: 580-3718-8

Date Sampled: 09/25/2006 1440

Client Matrix: Solid

% Moisture: 11.5

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006329.D
Dilution:	1.0		Initial Weight/Volume: 10.8106 g
Date Analyzed:	09/29/2006 0159		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		28	100
Bis(2-chloroethyl)ether		ND		31	100
2-Chlorophenol		ND		24	100
1,3-Dichlorobenzene		ND		13	52
1,4-Dichlorobenzene		ND		7.9	52
Benzyl alcohol		ND		31	100
1,2-Dichlorobenzene		ND		18	52
2-Methylphenol		ND		29	100
Bis(2-chloroisopropyl) ether		ND		36	160
3 & 4 Methylphenol		ND		55	210
N-Nitrosodi-n-propylamine		ND		27	100
Hexachloroethane		ND		22	100
Nitrobenzene		ND		16	100
Isophorone		ND		27	100
2-Nitrophenol		ND		24	100
2,4-Dimethylphenol		ND		20	100
Benzoic acid		ND		870	2600
Bis(2-chloroethoxy)methane		ND		26	100
2,4-Dichlorophenol		ND		20	100
1,2,4-Trichlorobenzene		ND		10	52
Naphthalene		ND		6.0	21
4-Chloroaniline		ND		28	100
Hexachlorobutadiene		ND		14	52
4-Chloro-3-methylphenol		ND		23	100
2-Methylnaphthalene		ND		3.2	21
Hexachlorocyclopentadiene		ND		26	100
2,4,6-Trichlorophenol		ND		35	160
2,4,5-Trichlorophenol		ND		24	100
2-Chloronaphthalene		ND		2.0	21
2-Nitroaniline		ND		20	100
Dimethyl phthalate		ND		8.1	100
Acenaphthylene		ND		2.4	21
2,6-Dinitrotoluene		ND		20	100
3-Nitroaniline		ND		30	100
Acenaphthene		ND		6.0	21
2,4-Dinitrophenol		ND		210	1000
4-Nitrophenol		ND		270	1000
Dibenzofuran		ND		18	100
2,4-Dinitrotoluene		ND		15	100
Diethyl phthalate		ND		7.5	100
4-Chlorophenyl phenyl ether		ND		17	100
Fluorene		ND		2.7	21
4-Nitroaniline		ND		20	100

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-010**

Lab Sample ID: 580-3718-8

Date Sampled: 09/25/2006 1440

Client Matrix: Solid

% Moisture: 11.5

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006329.D
Dilution:	1.0		Initial Weight/Volume: 10.8106 g
Date Analyzed:	09/29/2006 0159		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol		ND		280	1000
N-Nitrosodiphenylamine		ND		16	52
4-Bromophenyl phenyl ether		ND		10	100
Hexachlorobenzene		ND		12	52
Pentachlorophenol		ND		32	100
Phenanthrene		ND		4.2	21
Anthracene		ND		4.5	21
Di-n-butyl phthalate		44	J B	14	210
Fluoranthene		ND		3.2	21
Pyrene		ND		2.8	21
Butyl benzyl phthalate		ND		30	100
3,3'-Dichlorobenzidine		ND		9.5	210
Benzo[a]anthracene		ND		6.8	26
Chrysene		ND		7.8	26
Bis(2-ethylhexyl) phthalate		ND		250	1600
Di-n-octyl phthalate		ND		35	210
Benzofluoranthene		ND		10	42
Benzo[a]pyrene		ND		8.9	31
Indeno[1,2,3-cd]pyrene		ND		13	42
Dibenz(a,h)anthracene		ND		13	42
Benzo[g,h,i]perylene		ND		7.6	26
Carbazole		ND		35	160
1-Methylnaphthalene		ND		9.1	31
Surrogate		%Rec		Acceptance Limits	
2-Fluorophenol		105		36 - 145	
Phenol-d5		104		38 - 149	
Nitrobenzene-d5		98		38 - 141	
2-Fluorobiphenyl		101		42 - 140	
2,4,6-Tribromophenol		106		28 - 143	
Terphenyl-d14		113		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-010**

Lab Sample ID: 580-3718-8

Date Sampled: 09/25/2006 1440

Client Matrix: Solid

% Moisture: 11.5

Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C

Analysis Batch: 580-11419

Instrument ID: SEA023

Preparation: 3550B

Prep Batch: 580-11302

Lab File ID: HP02393.D

Dilution: 1.0

Initial Weight/Volume: 10.8106 g

Date Analyzed: 09/29/2006 0703

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0900

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzo[a]anthracene		ND		1.8	5.2
Chrysene		ND		0.42	5.2
Benzofluoranthene		5.2	J B	0.66	10
Benzo[a]pyrene		2.8	J B	0.42	5.2
Indeno[1,2,3-cd]pyrene		2.5	J B	0.26	5.2
Dibenz(a,h)anthracene		3.5	J B	0.23	5.2
Benzo[g,h,i]perylene		1.5	J B	0.25	5.2
Benzo[b]fluoranthene		3.1	J B	0.26	5.2
Benzo[k]fluoranthene		2.2	J B	0.29	5.2
Surrogate		%Rec		Acceptance Limits	
Nitrobenzene-d5		119		38 - 141	
2-Fluorobiphenyl		105		42 - 140	
Terphenyl-d14		104		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-W**

Lab Sample ID: 580-3718-9  
Client Matrix: Water

Date Sampled: 09/25/2006 1445  
Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C	Analysis Batch: 580-11408	Instrument ID: SEA023
Preparation: 3510C	Prep Batch: 580-11299	Lab File ID: HP02375.D
Dilution: 1.0		Initial Weight/Volume: 970 mL
Date Analyzed: 09/28/2006 2307		Final Weight/Volume: 10 mL
Date Prepared: 09/28/2006 0838		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzo[a]anthracene	ND		0.0093	0.10
Chrysene	ND		0.0093	0.10
Benzo[fluoranthene	ND		0.032	0.21
Benzo[a]pyrene	ND		0.062	0.21
Indeno[1,2,3-cd]pyrene	0.023	J B	0.015	0.10
Dibenz(a,h)anthracene	0.017	J B	0.012	0.10
Benzo[g,h,i]perylene	ND		0.019	0.10
Benzo[b]fluoranthene	ND		0.024	0.10
Benzo[k]fluoranthene	ND		0.011	0.10
Surrogate	%Rec		Acceptance Limits	
Nitrobenzene-d5	130		34 - 146	
2-Fluorobiphenyl	106		35 - 143	
Terphenyl-d14	95		35 - 166	



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-W**

Lab Sample ID: 580-3718-9  
Client Matrix: Water

Date Sampled: 09/25/2006 1445  
Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11421	Instrument ID: SEA040
Preparation:	3510C	Prep Batch: 580-11292	Lab File ID: ak006312.D
Dilution:	1.0		Initial Weight/Volume: 970 mL
Date Analyzed:	09/28/2006 1915		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0759		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Phenol	ND		0.076	3.1
Bis(2-chloroethyl)ether	ND		0.19	2.1
2-Chlorophenol	ND		0.23	2.1
1,3-Dichlorobenzene	ND		0.11	2.1
1,4-Dichlorobenzene	ND		0.12	2.1
Benzyl alcohol	ND		0.13	2.1
1,2-Dichlorobenzene	ND		0.11	2.1
2-Methylphenol	ND		0.39	2.1
Bis(2-chloroisopropyl) ether	ND		0.091	2.1
3 & 4 Methylphenol	ND		0.18	4.1
N-Nitrosodi-n-propylamine	ND		0.21	2.1
Hexachloroethane	ND		0.13	3.1
Nitrobenzene	ND		0.077	2.1
Isophorone	ND		0.11	2.1
2-Nitrophenol	ND		0.22	2.1
2,4-Dimethylphenol	ND		0.19	10
Benzoic acid	5.3	J	0.22	10
Bis(2-chloroethoxy)methane	ND		0.098	2.1
2,4-Dichlorophenol	ND		0.13	2.1
1,2,4-Trichlorobenzene	ND		0.10	2.1
Naphthalene	ND		0.014	2.1
4-Chloroaniline	ND		0.20	2.1
Hexachlorobutadiene	ND		0.16	3.1
4-Chloro-3-methylphenol	ND		0.14	2.1
2-Methylnaphthalene	ND		0.057	1.0
Hexachlorocyclopentadiene	ND		0.12	10
2,4,6-Trichlorophenol	ND		0.10	3.1
2,4,5-Trichlorophenol	ND		0.088	2.1
2-Chloronaphthalene	ND		0.031	0.31
2-Nitroaniline	ND		0.11	2.1
Dimethyl phthalate	ND		0.12	2.1
Acenaphthylene	ND		0.027	0.41
2,6-Dinitrotoluene	ND		0.14	2.1
3-Nitroaniline	ND		0.58	2.1
Acenaphthene	ND		0.012	0.52
2,4-Dinitrophenol	ND		0.60	26
4-Nitrophenol	ND		1.6	10
Dibenzofuran	ND		0.10	2.1
2,4-Dinitrotoluene	ND		0.12	2.1
Diethyl phthalate	0.14	J	0.096	2.1
4-Chlorophenyl phenyl ether	ND		0.12	2.1
Fluorene	ND		0.043	0.31
4-Nitroaniline	ND		0.19	3.1

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-W**

Lab Sample ID: 580-3718-9  
 Client Matrix: Water

Date Sampled: 09/25/2006 1445  
 Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11421	Instrument ID: SEA040
Preparation:	3510C	Prep Batch: 580-11292	Lab File ID: ak006312.D
Dilution:	1.0		Initial Weight/Volume: 970 mL
Date Analyzed:	09/28/2006 1915		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0759		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol	ND		0.55	21
N-Nitrosodiphenylamine	ND		0.13	2.1
4-Bromophenyl phenyl ether	ND		0.10	2.1
Hexachlorobenzene	ND		0.085	2.1
Pentachlorophenol	ND		0.13	3.6
Phenanthrene	ND		0.025	0.41
Anthracene	ND		0.020	0.21
Di-n-butyl phthalate	0.95	J B	0.091	2.1
Fluoranthene	ND		0.028	0.26
Pyrene	ND		0.021	0.31
Butyl benzyl phthalate	0.36	J	0.25	3.1
3,3'-Dichlorobenzidine	ND		1.6	10
Benzo[a]anthracene	ND		0.034	0.31
Chrysene	ND		0.046	0.21
Bis(2-ethylhexyl) phthalate	ND		0.33	15
Di-n-octyl phthalate	ND		0.19	2.1
Benzofluoranthene	ND		0.057	0.41
Benzo[a]pyrene	ND		0.028	0.21
Indeno[1,2,3-cd]pyrene	ND		0.053	0.31
Dibenz(a,h)anthracene	ND		0.047	0.31
Benzo[g,h,i]perylene	ND		0.062	0.31
Carbazole	ND		0.093	2.1
1-Methylnaphthalene	ND		0.054	0.31
Surrogate	%Rec		Acceptance Limits	
2-Fluorophenol	47		10 - 120	
Phenol-d5	27		10 - 102	
Nitrobenzene-d5	114		34 - 146	
2-Fluorobiphenyl	110		35 - 143	
2,4,6-Tribromophenol	105		29 - 151	
Terphenyl-d14	119		35 - 166	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP05-060925-015**

Lab Sample ID: 580-3718-10

Date Sampled: 09/25/2006 1545

Client Matrix: Solid

% Moisture: 5.5

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006332.D
Dilution:	1.0		Initial Weight/Volume: 10.5566 g
Date Analyzed:	09/29/2006 0312		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		27	100
Bis(2-chloroethyl)ether		ND		30	100
2-Chlorophenol		ND		23	100
1,3-Dichlorobenzene		ND		12	50
1,4-Dichlorobenzene		ND		7.6	50
Benzyl alcohol		ND		30	100
1,2-Dichlorobenzene		ND		17	50
2-Methylphenol		ND		28	100
Bis(2-chloroisopropyl) ether		ND		34	150
3 & 4 Methylphenol		ND		53	200
N-Nitrosodi-n-propylamine		ND		26	100
Hexachloroethane		ND		21	100
Nitrobenzene		ND		15	100
Isophorone		ND		26	100
2-Nitrophenol		ND		23	100
2,4-Dimethylphenol		ND		19	100
Benzoic acid		ND		830	2500
Bis(2-chloroethoxy)methane		ND		25	100
2,4-Dichlorophenol		ND		19	100
1,2,4-Trichlorobenzene		ND		9.9	50
Naphthalene		ND		5.7	20
4-Chloroaniline		ND		27	100
Hexachlorobutadiene		ND		13	50
4-Chloro-3-methylphenol		ND		22	100
2-Methylnaphthalene		ND		3.1	20
Hexachlorocyclopentadiene		ND		25	100
2,4,6-Trichlorophenol		ND		33	150
2,4,5-Trichlorophenol		ND		23	100
2-Chloronaphthalene		ND		1.9	20
2-Nitroaniline		ND		19	100
Dimethyl phthalate		ND		7.7	100
Acenaphthylene		ND		2.3	20
2,6-Dinitrotoluene		ND		19	100
3-Nitroaniline		ND		29	100
Acenaphthene		ND		5.7	20
2,4-Dinitrophenol		ND		210	1000
4-Nitrophenol		ND		260	1000
Dibenzofuran		ND		17	100
2,4-Dinitrotoluene		ND		14	100
Diethyl phthalate		ND		7.2	100
4-Chlorophenyl phenyl ether		ND		16	100
Fluorene		ND		2.6	20
4-Nitroaniline		ND		19	100

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP05-060925-015**

Lab Sample ID: 580-3718-10

Date Sampled: 09/25/2006 1545

Client Matrix: Solid

% Moisture: 5.5

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006332.D
Dilution:	1.0		Initial Weight/Volume: 10.5566 g
Date Analyzed:	09/29/2006 0312		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol		ND		270	1000
N-Nitrosodiphenylamine		ND		15	50
4-Bromophenyl phenyl ether		ND		10	100
Hexachlorobenzene		ND		11	50
Pentachlorophenol		ND		31	100
Phenanthrene		ND		4.0	20
Anthracene		ND		4.3	20
Di-n-butyl phthalate		41	J B	13	200
Fluoranthene		ND		3.1	20
Pyrene		ND		2.7	20
Butyl benzyl phthalate		ND		29	100
3,3'-Dichlorobenzidine		ND		9.1	200
Benzo[a]anthracene		ND		6.5	25
Chrysene		ND		7.5	25
Bis(2-ethylhexyl) phthalate		ND		240	1500
Di-n-octyl phthalate		ND		33	200
Benzofluoranthene		ND		10	40
Benzo[a]pyrene		ND		8.5	30
Indeno[1,2,3-cd]pyrene		ND		12	40
Dibenz(a,h)anthracene		ND		12	40
Benzo[g,h,i]perylene		ND		7.3	25
Carbazole		ND		33	150
1-Methylnaphthalene		ND		8.7	30
Surrogate		%Rec		Acceptance Limits	
2-Fluorophenol		105		36 - 145	
Phenol-d5		102		38 - 149	
Nitrobenzene-d5		98		38 - 141	
2-Fluorobiphenyl		102		42 - 140	
2,4,6-Tribromophenol		103		28 - 143	
Terphenyl-d14		114		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP05-060925-015**

Lab Sample ID: 580-3718-10

Date Sampled: 09/25/2006 1545

Client Matrix: Solid

% Moisture: 5.5

Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C

Analysis Batch: 580-11419

Instrument ID: SEA023

Preparation: 3550B

Prep Batch: 580-11302

Lab File ID: HP02396.D

Dilution: 1.0

Initial Weight/Volume: 10.5566 g

Date Analyzed: 09/29/2006 0825

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0900

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzo[a]anthracene		3.0	J	1.7	5.0
Chrysene		ND		0.40	5.0
Benzo[fluoranthene		7.5	J B	0.63	10
Benzo[a]pyrene		3.9	J B	0.40	5.0
Indeno[1,2,3-cd]pyrene		5.4	B	0.25	5.0
Dibenz(a,h)anthracene		3.9	J B	0.22	5.0
Benzo[g,h,i]perylene		3.7	J B	0.24	5.0
Benzo[b]fluoranthene		4.0	J B	0.25	5.0
Benzo[k]fluoranthene		3.7	J B	0.28	5.0
Surrogate		%Rec		Acceptance Limits	
Nitrobenzene-d5		125		38 - 141	
2-Fluorobiphenyl		105		42 - 140	
Terphenyl-d14		88		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP06-060926-030**

Lab Sample ID: 580-3718-11

Date Sampled: 09/26/2006 0900

Client Matrix: Solid

% Moisture: 57.0

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006333.D
Dilution:	1.0		Initial Weight/Volume: 10.6219 g
Date Analyzed:	09/29/2006 0336		Final Weight/Volume: 20 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		120	440
Bis(2-chloroethyl)ether		ND		130	440
2-Chlorophenol		ND		100	440
1,3-Dichlorobenzene		ND		53	220
1,4-Dichlorobenzene		ND		33	220
Benzyl alcohol		ND		130	440
1,2-Dichlorobenzene		ND		74	220
2-Methylphenol		ND		120	440
Bis(2-chloroisopropyl) ether		ND		150	660
3 & 4 Methylphenol		ND		230	880
N-Nitrosodi-n-propylamine		ND		110	440
Hexachloroethane		ND		92	440
Nitrobenzene		ND		66	440
Isophorone		ND		110	440
2-Nitrophenol		ND		100	440
2,4-Dimethylphenol		ND		83	440
Benzoic acid		ND		3600	11000
Bis(2-chloroethoxy)methane		ND		110	440
2,4-Dichlorophenol		ND		83	440
1,2,4-Trichlorobenzene		ND		43	220
Naphthalene		300		25	88
4-Chloroaniline		ND		120	440
Hexachlorobutadiene		ND		57	220
4-Chloro-3-methylphenol		ND		96	440
2-Methylnaphthalene		970		14	88
Hexachlorocyclopentadiene		ND		110	440
2,4,6-Trichlorophenol		ND		140	660
2,4,5-Trichlorophenol		ND		100	440
2-Chloronaphthalene		ND		8.3	88
2-Nitroaniline		ND		83	440
Dimethyl phthalate		ND		34	440
Acenaphthylene		37	J	10	88
2,6-Dinitrotoluene		ND		83	440
3-Nitroaniline		ND		130	440
Acenaphthene		1900		25	88
2,4-Dinitrophenol		ND		900	4400
4-Nitrophenol		ND		1100	4400
Dibenzofuran		940		74	440
2,4-Dinitrotoluene		ND		61	440
Diethyl phthalate		ND		32	440
4-Chlorophenyl phenyl ether		ND		70	440
Fluorene		1100		11	88
4-Nitroaniline		ND		83	440

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP06-060926-030**

Lab Sample ID: 580-3718-11

Date Sampled: 09/26/2006 0900

Client Matrix: Solid

% Moisture: 57.0

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006333.D
Dilution:	1.0		Initial Weight/Volume: 10.6219 g
Date Analyzed:	09/29/2006 0336		Final Weight/Volume: 20 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol		ND		1200	4400
N-Nitrosodiphenylamine		ND		66	220
4-Bromophenyl phenyl ether		ND		44	440
Hexachlorobenzene		ND		48	220
Pentachlorophenol		ND		140	440
Phenanthrene		1600		18	88
Anthracene		130		19	88
Di-n-butyl phthalate		190	J B	57	880
Fluoranthene		430		14	88
Pyrene		450		12	88
Butyl benzyl phthalate		ND		130	440
3,3'-Dichlorobenzidine		ND		40	880
Benzo[a]anthracene		180		28	110
Chrysene		150		33	110
Di-n-octyl phthalate		580	J	140	880
Benzofluoranthene		220		44	180
Benzo[a]pyrene		220	B	37	130
Indeno[1,2,3-cd]pyrene		150	J	53	180
Dibenz(a,h)anthracene		260		53	180
Benzo[g,h,i]perylene		160		32	110
Carbazole		ND		140	660
1-Methylnaphthalene		570		38	130
Surrogate		%Rec		Acceptance Limits	
2-Fluorophenol		92		36 - 145	
Phenol-d5		89		38 - 149	
Nitrobenzene-d5		96		38 - 141	
2-Fluorobiphenyl		101		42 - 140	
2,4,6-Tribromophenol		103		28 - 143	
Terphenyl-d14		113		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP06-060926-030**

Lab Sample ID: 580-3718-11

Date Sampled: 09/26/2006 0900

Client Matrix: Solid

% Moisture: 57.0

Date Received: 09/26/2006 1139

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### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: 8270C

Analysis Batch: 580-11394

Instrument ID: SEA040

Preparation: 3550B

Prep Batch: 580-11301

Lab File ID: AK006349.D

Dilution: 5.0

Initial Weight/Volume: 10.6219 g

Date Analyzed: 09/29/2006 1358

Final Weight/Volume: 20 mL

Date Prepared: 09/28/2006 0847

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Bis(2-ethylhexyl) phthalate		30000	J	5300	33000



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP06-060926-030**

Lab Sample ID: 580-3718-11

Date Sampled: 09/26/2006 0900

Client Matrix: Solid

% Moisture: 57.0

Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C

Analysis Batch: 580-11419

Instrument ID: SEA023

Preparation: 3550B

Prep Batch: 580-11302

Lab File ID: HP02397.D

Dilution: 1.0

Initial Weight/Volume: 10.6219 g

Date Analyzed: 09/29/2006 0853

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0900

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzo[a]anthracene		74		3.7	11
Chrysene		71		0.88	11
Benzo[fluoranthene		94	B	1.4	22
Benzo[a]pyrene		71	B	0.88	11
Indeno[1,2,3-cd]pyrene		41	B	0.55	11
Dibenz(a,h)anthracene		7.5	J B	0.48	11
Benzo[g,h,i]perylene		32	B	0.53	11
Benzo[b]fluoranthene		70	B	0.55	11
Benzo[k]fluoranthene		47	B	0.61	11
Surrogate		%Rec		Acceptance Limits	
Nitrobenzene-d5		58		38 - 141	
2-Fluorobiphenyl		51		42 - 140	
Terphenyl-d14		39	X	42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-020**

Lab Sample ID: 580-3718-12

Date Sampled: 09/26/2006 1010

Client Matrix: Solid

% Moisture: 7.7

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006334.D
Dilution:	1.0		Initial Weight/Volume: 10.5686 g
Date Analyzed:	09/29/2006 0400		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		28	100
Bis(2-chloroethyl)ether		ND		31	100
2-Chlorophenol		ND		24	100
1,3-Dichlorobenzene		ND		12	51
1,4-Dichlorobenzene		ND		7.8	51
Benzyl alcohol		ND		31	100
1,2-Dichlorobenzene		ND		17	51
2-Methylphenol		ND		29	100
Bis(2-chloroisopropyl) ether		ND		35	150
3 & 4 Methylphenol		ND		54	210
N-Nitrosodi-n-propylamine		ND		27	100
Hexachloroethane		ND		22	100
Nitrobenzene		ND		15	100
Isophorone		ND		27	100
2-Nitrophenol		ND		24	100
2,4-Dimethylphenol		ND		19	100
Benzoic acid		ND		850	2600
Bis(2-chloroethoxy)methane		ND		26	100
2,4-Dichlorophenol		ND		19	100
1,2,4-Trichlorobenzene		ND		10	51
Naphthalene		ND		5.8	21
4-Chloroaniline		ND		28	100
Hexachlorobutadiene		ND		13	51
4-Chloro-3-methylphenol		ND		23	100
2-Methylnaphthalene		ND		3.2	21
Hexachlorocyclopentadiene		ND		26	100
2,4,6-Trichlorophenol		ND		34	150
2,4,5-Trichlorophenol		ND		24	100
2-Chloronaphthalene		ND		1.9	21
2-Nitroaniline		ND		19	100
Dimethyl phthalate		ND		7.9	100
Acenaphthylene		ND		2.4	21
2,6-Dinitrotoluene		ND		19	100
3-Nitroaniline		ND		30	100
Acenaphthene		ND		5.8	21
2,4-Dinitrophenol		ND		210	1000
4-Nitrophenol		ND		270	1000
Dibenzofuran		ND		17	100
2,4-Dinitrotoluene		ND		14	100
Diethyl phthalate		ND		7.4	100
4-Chlorophenyl phenyl ether		ND		16	100
Fluorene		ND		2.7	21
4-Nitroaniline		ND		19	100

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-020**

Lab Sample ID: 580-3718-12

Date Sampled: 09/26/2006 1010

Client Matrix: Solid

% Moisture: 7.7

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006334.D
Dilution:	1.0		Initial Weight/Volume: 10.5686 g
Date Analyzed:	09/29/2006 0400		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol		ND		280	1000
N-Nitrosodiphenylamine		ND		15	51
4-Bromophenyl phenyl ether		ND		10	100
Hexachlorobenzene		ND		11	51
Pentachlorophenol		ND		32	100
Phenanthrene		ND		4.1	21
Anthracene		ND		4.4	21
Di-n-butyl phthalate		41	J B	13	210
Fluoranthene		ND		3.2	21
Pyrene		ND		2.8	21
Butyl benzyl phthalate		ND		30	100
3,3'-Dichlorobenzidine		ND		9.3	210
Benzo[a]anthracene		ND		6.7	26
Chrysene		ND		7.7	26
Bis(2-ethylhexyl) phthalate		ND		250	1500
Di-n-octyl phthalate		140	J	34	210
Benzofluoranthene		ND		10	41
Benzo[a]pyrene		ND		8.7	31
Indeno[1,2,3-cd]pyrene		ND		12	41
Dibenz(a,h)anthracene		ND		12	41
Benzo[g,h,i]perylene		ND		7.5	26
Carbazole		ND		34	150
1-Methylnaphthalene		ND		8.9	31
Surrogate		%Rec		Acceptance Limits	
2-Fluorophenol		105		36 - 145	
Phenol-d5		102		38 - 149	
Nitrobenzene-d5		100		38 - 141	
2-Fluorobiphenyl		102		42 - 140	
2,4,6-Tribromophenol		105		28 - 143	
Terphenyl-d14		114		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-020**

Lab Sample ID: 580-3718-12

Date Sampled: 09/26/2006 1010

Client Matrix: Solid

% Moisture: 7.7

Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C

Analysis Batch: 580-11419

Instrument ID: SEA023

Preparation: 3550B

Prep Batch: 580-11302

Lab File ID: HP02398.D

Dilution: 1.0

Initial Weight/Volume: 10.5686 g

Date Analyzed: 09/29/2006 0920

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0900

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzo[a]anthracene		ND		1.7	5.1
Chrysene		ND		0.41	5.1
Benzofluoranthene		1.4	J B	0.65	10
Benzo[a]pyrene		0.77	J B	0.41	5.1
Indeno[1,2,3-cd]pyrene		0.58	J B	0.26	5.1
Dibenz(a,h)anthracene		0.38	J B	0.23	5.1
Benzo[g,h,i]perylene		0.61	J B	0.25	5.1
Benzo[b]fluoranthene		1.3	J B	0.26	5.1
Benzo[k]fluoranthene		0.42	J B	0.29	5.1
Surrogate		%Rec		Acceptance Limits	
Nitrobenzene-d5		124		38 - 141	
2-Fluorobiphenyl		106		42 - 140	
Terphenyl-d14		92		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-W**

Lab Sample ID: 580-3718-13  
 Client Matrix: Water

Date Sampled: 09/26/2006 1030  
 Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C	Analysis Batch: 580-11408	Instrument ID: SEA023
Preparation: 3510C	Prep Batch: 580-11299	Lab File ID: HP02376.D
Dilution: 1.0		Initial Weight/Volume: 980 mL
Date Analyzed: 09/28/2006 2334		Final Weight/Volume: 10 mL
Date Prepared: 09/28/2006 0838		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzo[a]anthracene	ND		0.0092	0.10
Chrysene	ND		0.0092	0.10
Benzo[fluoranthene	ND		0.032	0.20
Benzo[a]pyrene	ND		0.061	0.20
Indeno[1,2,3-cd]pyrene	ND		0.015	0.10
Dibenz(a,h)anthracene	ND		0.012	0.10
Benzo[g,h,i]perylene	ND		0.018	0.10
Benzo[b]fluoranthene	ND		0.023	0.10
Benzo[k]fluoranthene	ND		0.011	0.10
Surrogate	%Rec		Acceptance Limits	
Nitrobenzene-d5	118		34 - 146	
2-Fluorobiphenyl	98		35 - 143	
Terphenyl-d14	86		35 - 166	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-W**

Lab Sample ID: 580-3718-13  
Client Matrix: Water

Date Sampled: 09/26/2006 1030  
Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11421	Instrument ID: SEA040
Preparation:	3510C	Prep Batch: 580-11292	Lab File ID: ak006313.D
Dilution:	1.0		Initial Weight/Volume: 980 mL
Date Analyzed:	09/28/2006 1940		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0759		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Phenol	ND		0.076	3.1
Bis(2-chloroethyl)ether	ND		0.18	2.0
2-Chlorophenol	ND		0.22	2.0
1,3-Dichlorobenzene	ND		0.11	2.0
1,4-Dichlorobenzene	ND		0.12	2.0
Benzyl alcohol	ND		0.13	2.0
1,2-Dichlorobenzene	ND		0.11	2.0
2-Methylphenol	ND		0.39	2.0
Bis(2-chloroisopropyl) ether	ND		0.090	2.0
3 & 4 Methylphenol	ND		0.17	4.1
N-Nitrosodi-n-propylamine	ND		0.20	2.0
Hexachloroethane	ND		0.13	3.1
Nitrobenzene	ND		0.077	2.0
Isophorone	ND		0.11	2.0
2-Nitrophenol	ND		0.21	2.0
2,4-Dimethylphenol	ND		0.18	10
Benzoic acid	ND		0.21	10
Bis(2-chloroethoxy)methane	ND		0.097	2.0
2,4-Dichlorophenol	ND		0.13	2.0
1,2,4-Trichlorobenzene	ND		0.10	2.0
Naphthalene	0.017	J	0.014	2.0
4-Chloroaniline	ND		0.19	2.0
Hexachlorobutadiene	ND		0.16	3.1
4-Chloro-3-methylphenol	ND		0.14	2.0
2-Methylnaphthalene	ND		0.056	1.0
Hexachlorocyclopentadiene	ND		0.12	10
2,4,6-Trichlorophenol	ND		0.10	3.1
2,4,5-Trichlorophenol	ND		0.087	2.0
2-Chloronaphthalene	ND		0.031	0.31
2-Nitroaniline	ND		0.11	2.0
Dimethyl phthalate	ND		0.12	2.0
Acenaphthylene	ND		0.027	0.41
2,6-Dinitrotoluene	ND		0.14	2.0
3-Nitroaniline	ND		0.57	2.0
Acenaphthene	ND		0.012	0.51
2,4-Dinitrophenol	ND		0.59	26
4-Nitrophenol	ND		1.6	10
Dibenzofuran	ND		0.10	2.0
2,4-Dinitrotoluene	ND		0.12	2.0
Diethyl phthalate	0.13	J	0.095	2.0
4-Chlorophenyl phenyl ether	ND		0.12	2.0
Fluorene	0.054	J	0.043	0.31
4-Nitroaniline	ND		0.18	3.1

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-W**

Lab Sample ID: 580-3718-13  
Client Matrix: Water

Date Sampled: 09/26/2006 1030  
Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11421	Instrument ID: SEA040
Preparation:	3510C	Prep Batch: 580-11292	Lab File ID: ak006313.D
Dilution:	1.0		Initial Weight/Volume: 980 mL
Date Analyzed:	09/28/2006 1940		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0759		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol	ND		0.54	20
N-Nitrosodiphenylamine	ND		0.13	2.0
4-Bromophenyl phenyl ether	ND		0.10	2.0
Hexachlorobenzene	ND		0.084	2.0
Pentachlorophenol	ND		0.13	3.6
Phenanthrene	ND		0.024	0.41
Anthracene	ND		0.019	0.20
Di-n-butyl phthalate	0.89	J B	0.090	2.0
Fluoranthene	ND		0.028	0.26
Pyrene	ND		0.020	0.31
Butyl benzyl phthalate	0.44	J	0.24	3.1
3,3'-Dichlorobenzidine	ND		1.6	10
Benzo[a]anthracene	ND		0.034	0.31
Chrysene	ND		0.046	0.20
Bis(2-ethylhexyl) phthalate	ND		0.33	15
Di-n-octyl phthalate	ND		0.18	2.0
Benzofluoranthene	ND		0.056	0.41
Benzo[a]pyrene	ND		0.028	0.20
Indeno[1,2,3-cd]pyrene	ND		0.052	0.31
Dibenz(a,h)anthracene	ND		0.047	0.31
Benzo[g,h,i]perylene	ND		0.061	0.31
Carbazole	ND		0.092	2.0
1-Methylnaphthalene	ND		0.053	0.31
Surrogate	%Rec		Acceptance Limits	
2-Fluorophenol	42		10 - 120	
Phenol-d5	24		10 - 102	
Nitrobenzene-d5	102		34 - 146	
2-Fluorobiphenyl	102		35 - 143	
2,4,6-Tribromophenol	92		29 - 151	
Terphenyl-d14	107		35 - 166	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-WDUP**

Lab Sample ID: 580-3718-14  
 Client Matrix: Water

Date Sampled: 09/26/2006 1035  
 Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C	Analysis Batch: 580-11408	Instrument ID: SEA023
Preparation: 3510C	Prep Batch: 580-11299	Lab File ID: HP02377.D
Dilution: 1.0		Initial Weight/Volume: 995 mL
Date Analyzed: 09/29/2006 0001		Final Weight/Volume: 10 mL
Date Prepared: 09/28/2006 0838		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzo[a]anthracene	ND		0.0090	0.10
Chrysene	ND		0.0090	0.10
Benzo[fluoranthene	ND		0.031	0.20
Benzo[a]pyrene	ND		0.060	0.20
Indeno[1,2,3-cd]pyrene	ND		0.015	0.10
Dibenz(a,h)anthracene	ND		0.012	0.10
Benzo[g,h,i]perylene	ND		0.018	0.10
Benzo[b]fluoranthene	ND		0.023	0.10
Benzo[k]fluoranthene	ND		0.011	0.10
Surrogate	%Rec		Acceptance Limits	
Nitrobenzene-d5	130		34 - 146	
2-Fluorobiphenyl	106		35 - 143	
Terphenyl-d14	95		35 - 166	



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-WDUP**

Lab Sample ID: 580-3718-14  
Client Matrix: Water

Date Sampled: 09/26/2006 1035  
Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11421	Instrument ID: SEA040
Preparation:	3510C	Prep Batch: 580-11292	Lab File ID: ak006314.D
Dilution:	1.0		Initial Weight/Volume: 995 mL
Date Analyzed:	09/28/2006 2004		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0759		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Phenol	ND		0.074	3.0
Bis(2-chloroethyl)ether	ND		0.18	2.0
2-Chlorophenol	ND		0.22	2.0
1,3-Dichlorobenzene	ND		0.11	2.0
1,4-Dichlorobenzene	ND		0.12	2.0
Benzyl alcohol	ND		0.13	2.0
1,2-Dichlorobenzene	ND		0.11	2.0
2-Methylphenol	ND		0.38	2.0
Bis(2-chloroisopropyl) ether	ND		0.088	2.0
3 & 4 Methylphenol	ND		0.17	4.0
N-Nitrosodi-n-propylamine	ND		0.20	2.0
Hexachloroethane	ND		0.13	3.0
Nitrobenzene	ND		0.075	2.0
Isophorone	ND		0.11	2.0
2-Nitrophenol	ND		0.21	2.0
2,4-Dimethylphenol	ND		0.18	10
Benzoic acid	ND		0.21	10
Bis(2-chloroethoxy)methane	ND		0.095	2.0
2,4-Dichlorophenol	ND		0.13	2.0
1,2,4-Trichlorobenzene	ND		0.10	2.0
Naphthalene	ND		0.014	2.0
4-Chloroaniline	ND		0.19	2.0
Hexachlorobutadiene	ND		0.16	3.0
4-Chloro-3-methylphenol	ND		0.14	2.0
2-Methylnaphthalene	ND		0.055	1.0
Hexachlorocyclopentadiene	ND		0.12	10
2,4,6-Trichlorophenol	ND		0.10	3.0
2,4,5-Trichlorophenol	ND		0.085	2.0
2-Chloronaphthalene	ND		0.030	0.30
2-Nitroaniline	ND		0.11	2.0
Dimethyl phthalate	ND		0.12	2.0
Acenaphthylene	ND		0.026	0.40
2,6-Dinitrotoluene	ND		0.14	2.0
3-Nitroaniline	ND		0.56	2.0
Acenaphthene	0.061	J	0.012	0.50
2,4-Dinitrophenol	ND		0.58	25
4-Nitrophenol	ND		1.6	10
Dibenzofuran	ND		0.098	2.0
2,4-Dinitrotoluene	ND		0.12	2.0
Diethyl phthalate	ND		0.093	2.0
4-Chlorophenyl phenyl ether	ND		0.12	2.0
Fluorene	0.069	J	0.042	0.30
4-Nitroaniline	ND		0.18	3.0

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-WDUP**

Lab Sample ID: 580-3718-14  
Client Matrix: Water

Date Sampled: 09/26/2006 1035  
Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11421	Instrument ID: SEA040
Preparation:	3510C	Prep Batch: 580-11292	Lab File ID: ak006314.D
Dilution:	1.0		Initial Weight/Volume: 995 mL
Date Analyzed:	09/28/2006 2004		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0759		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol	ND		0.53	20
N-Nitrosodiphenylamine	ND		0.13	2.0
4-Bromophenyl phenyl ether	ND		0.10	2.0
Hexachlorobenzene	ND		0.082	2.0
Pentachlorophenol	ND		0.13	3.5
Phenanthrene	ND		0.024	0.40
Anthracene	ND		0.019	0.20
Di-n-butyl phthalate	0.93	J B	0.088	2.0
Fluoranthene	ND		0.027	0.25
Pyrene	0.022	J	0.020	0.30
Butyl benzyl phthalate	0.56	J	0.24	3.0
3,3'-Dichlorobenzidine	ND		1.6	10
Benzo[a]anthracene	ND		0.033	0.30
Chrysene	ND		0.045	0.20
Bis(2-ethylhexyl) phthalate	ND		0.32	15
Di-n-octyl phthalate	ND		0.18	2.0
Benzofluoranthene	ND		0.055	0.40
Benzo[a]pyrene	ND		0.027	0.20
Indeno[1,2,3-cd]pyrene	ND		0.051	0.30
Dibenz(a,h)anthracene	ND		0.046	0.30
Benzo[g,h,i]perylene	ND		0.060	0.30
Carbazole	ND		0.090	2.0
1-Methylnaphthalene	ND		0.052	0.30
Surrogate	%Rec		Acceptance Limits	
2-Fluorophenol	47		10 - 120	
Phenol-d5	26		10 - 102	
Nitrobenzene-d5	108		34 - 146	
2-Fluorobiphenyl	109		35 - 143	
2,4,6-Tribromophenol	101		29 - 151	
Terphenyl-d14	117		35 - 166	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045**

Lab Sample ID: 580-3718-15

Date Sampled: 09/26/2006 1120

Client Matrix: Solid

% Moisture: 13.2

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006335.D
Dilution:	1.0		Initial Weight/Volume: 10.5161 g
Date Analyzed:	09/29/2006 0425		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		30	110
Bis(2-chloroethyl)ether		ND		33	110
2-Chlorophenol		ND		25	110
1,3-Dichlorobenzene		ND		13	55
1,4-Dichlorobenzene		ND		8.3	55
Benzyl alcohol		ND		33	110
1,2-Dichlorobenzene		ND		19	55
2-Methylphenol		ND		31	110
Bis(2-chloroisopropyl) ether		ND		37	160
3 & 4 Methylphenol		ND		58	220
N-Nitrosodi-n-propylamine		ND		28	110
Hexachloroethane		ND		23	110
Nitrobenzene		ND		16	110
Isophorone		ND		28	110
2-Nitrophenol		ND		25	110
2,4-Dimethylphenol		ND		21	110
Benzoic acid		ND		910	2700
Bis(2-chloroethoxy)methane		ND		27	110
2,4-Dichlorophenol		ND		21	110
1,2,4-Trichlorobenzene		ND		11	55
Naphthalene		ND		6.2	22
4-Chloroaniline		ND		30	110
Hexachlorobutadiene		ND		14	55
4-Chloro-3-methylphenol		ND		24	110
2-Methylnaphthalene		ND		3.4	22
Hexachlorocyclopentadiene		ND		27	110
2,4,6-Trichlorophenol		ND		36	160
2,4,5-Trichlorophenol		ND		25	110
2-Chloronaphthalene		ND		2.1	22
2-Nitroaniline		ND		21	110
Dimethyl phthalate		ND		8.4	110
Acenaphthylene		ND		2.5	22
2,6-Dinitrotoluene		33	J	21	110
3-Nitroaniline		ND		32	110
Acenaphthene		ND		6.2	22
2,4-Dinitrophenol		ND		220	1100
4-Nitrophenol		ND		280	1100
Dibenzofuran		ND		19	110
2,4-Dinitrotoluene		ND		15	110
Diethyl phthalate		ND		7.9	110
4-Chlorophenyl phenyl ether		ND		18	110
Fluorene		ND		2.8	22
4-Nitroaniline		ND		21	110

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045**

Lab Sample ID: 580-3718-15

Date Sampled: 09/26/2006 1120

Client Matrix: Solid

% Moisture: 13.2

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006335.D
Dilution:	1.0		Initial Weight/Volume: 10.5161 g
Date Analyzed:	09/29/2006 0425		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol		ND		300	1100
N-Nitrosodiphenylamine		ND		16	55
4-Bromophenyl phenyl ether		ND		11	110
Hexachlorobenzene		ND		12	55
Pentachlorophenol		ND		34	110
Phenanthrene		ND		4.4	22
Anthracene		ND		4.7	22
Di-n-butyl phthalate		44	J B	14	220
Fluoranthene		ND		3.4	22
Pyrene		ND		3.0	22
Butyl benzyl phthalate		ND		32	110
3,3'-Dichlorobenzidine		ND		10	220
Benzo[a]anthracene		ND		7.1	27
Chrysene		ND		8.2	27
Bis(2-ethylhexyl) phthalate		ND		260	1600
Di-n-octyl phthalate		ND		36	220
Benzofluoranthene		ND		11	44
Benzo[a]pyrene		ND		9.3	33
Indeno[1,2,3-cd]pyrene		ND		13	44
Dibenz(a,h)anthracene		ND		13	44
Benzo[g,h,i]perylene		ND		8.0	27
Carbazole		ND		36	160
1-Methylnaphthalene		ND		9.5	33
Surrogate		%Rec		Acceptance Limits	
2-Fluorophenol		104		36 - 145	
Phenol-d5		100		38 - 149	
Nitrobenzene-d5		98		38 - 141	
2-Fluorobiphenyl		99		42 - 140	
2,4,6-Tribromophenol		100		28 - 143	
Terphenyl-d14		114		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045**

Lab Sample ID: 580-3718-15

Date Sampled: 09/26/2006 1120

Client Matrix: Solid

% Moisture: 13.2

Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C

Analysis Batch: 580-11419

Instrument ID: SEA023

Preparation: 3550B

Prep Batch: 580-11302

Lab File ID: HP02399.D

Dilution: 1.0

Initial Weight/Volume: 10.5161 g

Date Analyzed: 09/29/2006 0947

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0900

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzo[a]anthracene		ND		1.9	5.5
Chrysene		ND		0.44	5.5
Benzofluoranthene		1.4	J B	0.69	11
Benzo[a]pyrene		0.72	J B	0.44	5.5
Indeno[1,2,3-cd]pyrene		0.66	J B	0.27	5.5
Dibenz(a,h)anthracene		1.0	J B	0.24	5.5
Benzo[g,h,i]perylene		0.47	J B	0.26	5.5
Benzo[b]fluoranthene		1.6	J B	0.27	5.5
Benzo[k]fluoranthene		ND		0.31	5.5
Surrogate		%Rec		Acceptance Limits	
Nitrobenzene-d5		120		38 - 141	
2-Fluorobiphenyl		102		42 - 140	
Terphenyl-d14		91		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045DUP**

Lab Sample ID: 580-3718-16

Date Sampled: 09/26/2006 1125

Client Matrix: Solid

% Moisture: 8.1

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006336.D
Dilution:	1.0		Initial Weight/Volume: 10.7184 g
Date Analyzed:	09/29/2006 0449		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		27	100
Bis(2-chloroethyl)ether		ND		30	100
2-Chlorophenol		ND		23	100
1,3-Dichlorobenzene		ND		12	51
1,4-Dichlorobenzene		ND		7.7	51
Benzyl alcohol		ND		30	100
1,2-Dichlorobenzene		ND		17	51
2-Methylphenol		ND		28	100
Bis(2-chloroisopropyl) ether		ND		35	150
3 & 4 Methylphenol		ND		54	200
N-Nitrosodi-n-propylamine		ND		26	100
Hexachloroethane		ND		21	100
Nitrobenzene		ND		15	100
Isophorone		ND		26	100
2-Nitrophenol		ND		23	100
2,4-Dimethylphenol		ND		19	100
Benzoic acid		ND		840	2500
Bis(2-chloroethoxy)methane		ND		25	100
2,4-Dichlorophenol		ND		19	100
1,2,4-Trichlorobenzene		ND		10	51
Naphthalene		ND		5.8	20
4-Chloroaniline		ND		27	100
Hexachlorobutadiene		ND		13	51
4-Chloro-3-methylphenol		ND		22	100
2-Methylnaphthalene		ND		3.1	20
Hexachlorocyclopentadiene		ND		25	100
2,4,6-Trichlorophenol		ND		34	150
2,4,5-Trichlorophenol		ND		23	100
2-Chloronaphthalene		ND		1.9	20
2-Nitroaniline		ND		19	100
Dimethyl phthalate		ND		7.8	100
Acenaphthylene		ND		2.3	20
2,6-Dinitrotoluene		ND		19	100
3-Nitroaniline		ND		29	100
Acenaphthene		ND		5.8	20
2,4-Dinitrophenol		ND		210	1000
4-Nitrophenol		ND		260	1000
Dibenzofuran		ND		17	100
2,4-Dinitrotoluene		ND		14	100
Diethyl phthalate		ND		7.3	100
4-Chlorophenyl phenyl ether		ND		16	100
Fluorene		ND		2.6	20
4-Nitroaniline		ND		19	100

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045DUP**

Lab Sample ID: 580-3718-16

Date Sampled: 09/26/2006 1125

Client Matrix: Solid

% Moisture: 8.1

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006336.D
Dilution:	1.0		Initial Weight/Volume: 10.7184 g
Date Analyzed:	09/29/2006 0449		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol		ND		270	1000
N-Nitrosodiphenylamine		ND		15	51
4-Bromophenyl phenyl ether		ND		10	100
Hexachlorobenzene		ND		11	51
Pentachlorophenol		ND		31	100
Phenanthrene		ND		4.1	20
Anthracene		ND		4.4	20
Di-n-butyl phthalate		39	J B	13	200
Fluoranthene		ND		3.1	20
Pyrene		ND		2.7	20
Butyl benzyl phthalate		ND		29	100
3,3'-Dichlorobenzidine		ND		9.2	200
Benzo[a]anthracene		ND		6.6	25
Chrysene		ND		7.6	25
Bis(2-ethylhexyl) phthalate		ND		240	1500
Di-n-octyl phthalate		ND		34	200
Benzofluoranthene		ND		10	41
Benzo[a]pyrene		ND		8.6	30
Indeno[1,2,3-cd]pyrene		ND		12	41
Dibenz(a,h)anthracene		ND		12	41
Benzo[g,h,i]perylene		ND		7.4	25
Carbazole		ND		34	150
1-Methylnaphthalene		ND		8.8	30
Surrogate		%Rec		Acceptance Limits	
2-Fluorophenol		102		36 - 145	
Phenol-d5		100		38 - 149	
Nitrobenzene-d5		95		38 - 141	
2-Fluorobiphenyl		99		42 - 140	
2,4,6-Tribromophenol		97		28 - 143	
Terphenyl-d14		110		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045DUP**

Lab Sample ID: 580-3718-16

Date Sampled: 09/26/2006 1125

Client Matrix: Solid

% Moisture: 8.1

Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C

Analysis Batch: 580-11419

Instrument ID: SEA023

Preparation: 3550B

Prep Batch: 580-11302

Lab File ID: HP02400.D

Dilution: 1.0

Initial Weight/Volume: 10.7184 g

Date Analyzed: 09/29/2006 1014

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0900

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzo[a]anthracene		ND		1.7	5.1
Chrysene		ND		0.41	5.1
Benzofluoranthene		0.97	J B	0.64	10
Benzo[a]pyrene		ND		0.41	5.1
Indeno[1,2,3-cd]pyrene		ND		0.25	5.1
Dibenz(a,h)anthracene		0.39	J B	0.22	5.1
Benzo[g,h,i]perylene		0.40	J B	0.24	5.1
Benzo[b]fluoranthene		1.0	J B	0.25	5.1
Benzo[k]fluoranthene		ND		0.28	5.1
Surrogate		%Rec		Acceptance Limits	
Nitrobenzene-d5		122		38 - 141	
2-Fluorobiphenyl		105		42 - 140	
Terphenyl-d14		92		42 - 151	



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP08-060926-010**

Lab Sample ID: 580-3718-17

Date Sampled: 09/26/2006 1315

Client Matrix: Solid

% Moisture: 6.4

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006337.D
Dilution:	10		Initial Weight/Volume: 10.7479 g
Date Analyzed:	09/29/2006 0514		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		270	990
Bis(2-chloroethyl)ether		ND		300	990
2-Chlorophenol		ND		230	990
1,3-Dichlorobenzene		ND		120	500
1,4-Dichlorobenzene		ND		76	500
Benzyl alcohol		ND		300	990
1,2-Dichlorobenzene		ND		170	500
2-Methylphenol		ND		280	990
Bis(2-chloroisopropyl) ether		ND		340	1500
3 & 4 Methylphenol		ND		530	2000
N-Nitrosodi-n-propylamine		ND		260	990
Hexachloroethane		ND		210	990
Nitrobenzene		ND		150	990
Isophorone		ND		260	990
2-Nitrophenol		ND		230	990
2,4-Dimethylphenol		ND		190	990
Benzoic acid		ND		8300	25000
Bis(2-chloroethoxy)methane		ND		250	990
2,4-Dichlorophenol		ND		190	990
1,2,4-Trichlorobenzene		ND		98	500
Naphthalene		ND		57	200
4-Chloroaniline		ND		270	990
Hexachlorobutadiene		ND		130	500
4-Chloro-3-methylphenol		ND		220	990
2-Methylnaphthalene		ND		31	200
Hexachlorocyclopentadiene		ND		250	990
2,4,6-Trichlorophenol		ND		330	1500
2,4,5-Trichlorophenol		ND		230	990
2-Chloronaphthalene		ND		19	200
2-Nitroaniline		ND		190	990
Dimethyl phthalate		ND		77	990
Acenaphthylene		ND		23	200
2,6-Dinitrotoluene		ND		190	990
3-Nitroaniline		ND		290	990
Acenaphthene		ND		57	200
2,4-Dinitrophenol		ND		2000	9900
4-Nitrophenol		ND		2600	9900
Dibenzofuran		ND		170	990
2,4-Dinitrotoluene		ND		140	990
Diethyl phthalate		ND		72	990
4-Chlorophenyl phenyl ether		ND		160	990
Fluorene		ND		26	200
4-Nitroaniline		ND		190	990

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP08-060926-010**

Lab Sample ID: 580-3718-17

Date Sampled: 09/26/2006 1315

Client Matrix: Solid

% Moisture: 6.4

Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11394	Instrument ID: SEA040
Preparation:	3550B	Prep Batch: 580-11301	Lab File ID: ak006337.D
Dilution:	10		Initial Weight/Volume: 10.7479 g
Date Analyzed:	09/29/2006 0514		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0847		Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol		ND		2700	9900
N-Nitrosodiphenylamine		ND		150	500
4-Bromophenyl phenyl ether		ND		99	990
Hexachlorobenzene		ND		110	500
Pentachlorophenol		ND		310	990
Phenanthrene		ND		40	200
Anthracene		ND		43	200
Di-n-butyl phthalate		ND		130	2000
Fluoranthene		ND		31	200
Pyrene		290		27	200
Butyl benzyl phthalate		ND		290	990
3,3'-Dichlorobenzidine		ND		90	2000
Benzo[a]anthracene		ND		65	250
Chrysene		ND		75	250
Bis(2-ethylhexyl) phthalate		ND		2400	15000
Di-n-octyl phthalate		1400	J	330	2000
Benzofluoranthene		110	J	99	400
Benzo[a]pyrene		220	J B	84	300
Indeno[1,2,3-cd]pyrene		ND		120	400
Dibenz(a,h)anthracene		ND		120	400
Benzo[g,h,i]perylene		160	J	73	250
Carbazole		ND		330	1500
1-Methylnaphthalene		ND		86	300
Surrogate		%Rec		Acceptance Limits	
2-Fluorophenol		82		36 - 145	
Phenol-d5		83		38 - 149	
Nitrobenzene-d5		87		38 - 141	
2-Fluorobiphenyl		91		42 - 140	
2,4,6-Tribromophenol		111		28 - 143	
Terphenyl-d14		107		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP08-060926-010**

Lab Sample ID: 580-3718-17

Date Sampled: 09/26/2006 1315

Client Matrix: Solid

% Moisture: 6.4

Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C

Analysis Batch: 580-11419

Instrument ID: SEA023

Preparation: 3550B

Prep Batch: 580-11302

Lab File ID: HP02401.D

Dilution: 1.0

Initial Weight/Volume: 10.7479 g

Date Analyzed: 09/29/2006 1042

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0900

Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzo[a]anthracene		34		1.7	5.0
Chrysene		120		0.40	5.0
Benzo[fluoranthene		98	B	0.63	9.9
Benzo[a]pyrene		78	B	0.40	5.0
Indeno[1,2,3-cd]pyrene		34	B	0.25	5.0
Dibenz(a,h)anthracene		18	B	0.22	5.0
Benzo[g,h,i]perylene		39	B	0.24	5.0
Benzo[b]fluoranthene		66	B	0.25	5.0
Benzo[k]fluoranthene		36	B	0.28	5.0
Surrogate		%Rec		Acceptance Limits	
Nitrobenzene-d5		124		38 - 141	
2-Fluorobiphenyl		49		42 - 140	
Terphenyl-d14		80		42 - 151	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-W**

Lab Sample ID: 580-3718-18  
 Client Matrix: Water

Date Sampled: 09/26/2006 1145  
 Date Received: 09/26/2006 1139

### 8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C	Analysis Batch: 580-11408	Instrument ID: SEA023
Preparation: 3510C	Prep Batch: 580-11299	Lab File ID: HP02378.D
Dilution: 1.0		Initial Weight/Volume: 960 mL
Date Analyzed: 09/29/2006 0029		Final Weight/Volume: 10 mL
Date Prepared: 09/28/2006 0838		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzo[a]anthracene	ND		0.0094	0.10
Chrysene	ND		0.0094	0.10
Benzo[fluoranthene	ND		0.032	0.21
Benzo[a]pyrene	ND		0.063	0.21
Indeno[1,2,3-cd]pyrene	ND		0.016	0.10
Dibenz(a,h)anthracene	ND		0.013	0.10
Benzo[g,h,i]perylene	ND		0.019	0.10
Benzo[b]fluoranthene	ND		0.024	0.10
Benzo[k]fluoranthene	ND		0.011	0.10
Surrogate	%Rec		Acceptance Limits	
Nitrobenzene-d5	125		34 - 146	
2-Fluorobiphenyl	103		35 - 143	
Terphenyl-d14	82		35 - 166	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-W**

Lab Sample ID: 580-3718-18  
Client Matrix: Water

Date Sampled: 09/26/2006 1145  
Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11421	Instrument ID: SEA040
Preparation:	3510C	Prep Batch: 580-11292	Lab File ID: ak006315.D
Dilution:	1.0		Initial Weight/Volume: 960 mL
Date Analyzed:	09/28/2006 2028		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0759		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Phenol	ND		0.077	3.1
Bis(2-chloroethyl)ether	ND		0.19	2.1
2-Chlorophenol	ND		0.23	2.1
1,3-Dichlorobenzene	ND		0.11	2.1
1,4-Dichlorobenzene	ND		0.13	2.1
Benzyl alcohol	ND		0.14	2.1
1,2-Dichlorobenzene	ND		0.11	2.1
2-Methylphenol	ND		0.40	2.1
Bis(2-chloroisopropyl) ether	ND		0.092	2.1
3 & 4 Methylphenol	0.41	J	0.18	4.2
N-Nitrosodi-n-propylamine	ND		0.21	2.1
Hexachloroethane	ND		0.14	3.1
Nitrobenzene	ND		0.078	2.1
Isophorone	ND		0.11	2.1
2-Nitrophenol	ND		0.22	2.1
2,4-Dimethylphenol	ND		0.19	10
Benzoic acid	5.5	J	0.22	10
Bis(2-chloroethoxy)methane	ND		0.099	2.1
2,4-Dichlorophenol	ND		0.14	2.1
1,2,4-Trichlorobenzene	ND		0.10	2.1
Naphthalene	ND		0.015	2.1
4-Chloroaniline	ND		0.20	2.1
Hexachlorobutadiene	ND		0.17	3.1
4-Chloro-3-methylphenol	ND		0.15	2.1
2-Methylnaphthalene	ND		0.057	1.0
Hexachlorocyclopentadiene	ND		0.13	10
2,4,6-Trichlorophenol	ND		0.10	3.1
2,4,5-Trichlorophenol	ND		0.089	2.1
2-Chloronaphthalene	ND		0.031	0.31
2-Nitroaniline	ND		0.11	2.1
Dimethyl phthalate	ND		0.13	2.1
Acenaphthylene	ND		0.027	0.42
2,6-Dinitrotoluene	ND		0.15	2.1
3-Nitroaniline	ND		0.58	2.1
Acenaphthene	ND		0.013	0.52
2,4-Dinitrophenol	ND		0.60	26
4-Nitrophenol	ND		1.7	10
Dibenzofuran	ND		0.10	2.1
2,4-Dinitrotoluene	ND		0.13	2.1
Diethyl phthalate	0.21	J	0.097	2.1
4-Chlorophenyl phenyl ether	ND		0.13	2.1
Fluorene	ND		0.044	0.31
4-Nitroaniline	ND		0.19	3.1

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-W**

Lab Sample ID: 580-3718-18  
Client Matrix: Water

Date Sampled: 09/26/2006 1145  
Date Received: 09/26/2006 1139

### 8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-11421	Instrument ID: SEA040
Preparation:	3510C	Prep Batch: 580-11292	Lab File ID: ak006315.D
Dilution:	1.0		Initial Weight/Volume: 960 mL
Date Analyzed:	09/28/2006 2028		Final Weight/Volume: 10 mL
Date Prepared:	09/28/2006 0759		Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
4,6-Dinitro-2-methylphenol	ND		0.55	21
N-Nitrosodiphenylamine	ND		0.14	2.1
4-Bromophenyl phenyl ether	ND		0.10	2.1
Hexachlorobenzene	ND		0.085	2.1
Pentachlorophenol	ND		0.14	3.6
Phenanthrene	ND		0.025	0.42
Anthracene	ND		0.020	0.21
Di-n-butyl phthalate	1.1	J B	0.092	2.1
Fluoranthene	ND		0.028	0.26
Pyrene	ND		0.021	0.31
Butyl benzyl phthalate	0.59	J	0.25	3.1
3,3'-Dichlorobenzidine	ND		1.7	10
Benzo[a]anthracene	ND		0.034	0.31
Chrysene	ND		0.047	0.21
Bis(2-ethylhexyl) phthalate	ND		0.33	16
Di-n-octyl phthalate	1.4	J	0.19	2.1
Benzofluoranthene	ND		0.057	0.42
Benzo[a]pyrene	ND		0.028	0.21
Indeno[1,2,3-cd]pyrene	ND		0.053	0.31
Dibenz(a,h)anthracene	ND		0.048	0.31
Benzo[g,h,i]perylene	ND		0.063	0.31
Carbazole	ND		0.094	2.1
1-Methylnaphthalene	ND		0.054	0.31
Surrogate	%Rec		Acceptance Limits	
2-Fluorophenol	48		10 - 120	
Phenol-d5	28		10 - 102	
Nitrobenzene-d5	102		34 - 146	
2-Fluorobiphenyl	101		35 - 143	
2,4,6-Tribromophenol	103		29 - 151	
Terphenyl-d14	110		35 - 166	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-010**

Lab Sample ID: 580-3718-1

Date Sampled: 09/25/2006 0945

Client Matrix: Solid

% Moisture: 12.9

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11389

Instrument ID: SEA003

Preparation: 5035

Prep Batch: 580-11336

Lab File ID: CS167500.D

Dilution: 1.0

Initial Weight/Volume: 6.37 g

Date Analyzed: 09/28/2006 1701

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1514

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		1.6	J	0.46	7.2
Surrogate		%Rec			Acceptance Limits
4-Bromofluorobenzene (Surr)		100			50 - 150
Trifluorotoluene (Surr)		87			50 - 150
Ethylbenzene-d10		105			50 - 150
Fluorobenzene (Surr)		84			50 - 150
Toluene-d8 (Surr)		105			50 - 150

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-040**

Lab Sample ID: 580-3718-2

Date Sampled: 09/25/2006 0950

Client Matrix: Solid

% Moisture: 27.3

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11389

Instrument ID: SEA003

Preparation: 5035

Prep Batch: 580-11336

Lab File ID: CS167501.D

Dilution: 1.0

Initial Weight/Volume: 4.63 g

Date Analyzed: 09/28/2006 1724

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1514

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		13		0.76	12
Surrogate		%Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)		99		50 - 150	
Trifluorotoluene (Surr)		79		50 - 150	
Ethylbenzene-d10		106		50 - 150	
Fluorobenzene (Surr)		84		50 - 150	
Toluene-d8 (Surr)		105		50 - 150	



# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-W**

Lab Sample ID: 580-3718-3

Date Sampled: 09/25/2006 1000

Client Matrix: Water

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11401

Instrument ID: SEA041

Preparation: 5030B

Lab File ID: GX0003043.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Date Analyzed: 09/28/2006 1524

Final Weight/Volume: 5 mL

Date Prepared: 09/28/2006 1524

Injection Volume:

Column ID: PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	0.026	J	0.0077	0.050
Surrogate	%Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)	100		50 - 150	
Trifluorotoluene (Surr)	88		50 - 150	
Ethylbenzene-d10	101		50 - 150	
Fluorobenzene (Surr)	97		50 - 150	
Toluene-d8 (Surr)	105		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP03-060925-010**

Lab Sample ID: 580-3718-4

Date Sampled: 09/25/2006 1050

Client Matrix: Solid

% Moisture: 8.7

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11389

Instrument ID: SEA003

Preparation: 5035

Prep Batch: 580-11336

Lab File ID: CS167502.D

Dilution: 1.0

Initial Weight/Volume: 6.77 g

Date Analyzed: 09/28/2006 1746

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1514

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		1.7	J	0.41	6.5
Surrogate		%Rec			Acceptance Limits
4-Bromofluorobenzene (Surr)		100			50 - 150
Trifluorotoluene (Surr)		86			50 - 150
Ethylbenzene-d10		105			50 - 150
Fluorobenzene (Surr)		83			50 - 150
Toluene-d8 (Surr)		105			50 - 150

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP02-060925-010**

Lab Sample ID: 580-3718-5

Date Sampled: 09/25/2006 1200

Client Matrix: Solid

% Moisture: 6.2

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11389

Instrument ID: SEA003

Preparation: 5035

Prep Batch: 580-11336

Lab File ID: CS167503.D

Dilution: 1.0

Initial Weight/Volume: 5.39 g

Date Analyzed: 09/28/2006 1809

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1514

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		24		0.50	7.9
Surrogate		%Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)		103		50 - 150	
Trifluorotoluene (Surr)		88		50 - 150	
Ethylbenzene-d10		106		50 - 150	
Fluorobenzene (Surr)		84		50 - 150	
Toluene-d8 (Surr)		106		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-010**

Lab Sample ID: 580-3718-6

Date Sampled: 09/25/2006 1245

Client Matrix: Solid

% Moisture: 9.7

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11389

Instrument ID: SEA003

Preparation: 5035

Prep Batch: 580-11336

Lab File ID: CS167504.D

Dilution: 1.0

Initial Weight/Volume: 5.52 g

Date Analyzed: 09/28/2006 1832

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1514

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		2.5	J	0.51	8.0
Surrogate		%Rec			Acceptance Limits
4-Bromofluorobenzene (Surr)		100			50 - 150
Trifluorotoluene (Surr)		90			50 - 150
Ethylbenzene-d10		105			50 - 150
Fluorobenzene (Surr)		83			50 - 150
Toluene-d8 (Surr)		106			50 - 150

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-W**

Lab Sample ID: 580-3718-7

Date Sampled: 09/25/2006 1315

Client Matrix: Water

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11401

Instrument ID: SEA041

Preparation: 5030B

Lab File ID: GX0003044.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Date Analyzed: 09/28/2006 1546

Final Weight/Volume: 5 mL

Date Prepared: 09/28/2006 1546

Injection Volume:

Column ID: PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	0.073		0.0077	0.050
Surrogate	%Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)	100		50 - 150	
Trifluorotoluene (Surr)	103		50 - 150	
Ethylbenzene-d10	101		50 - 150	
Fluorobenzene (Surr)	96		50 - 150	
Toluene-d8 (Surr)	106		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-010**

Lab Sample ID: 580-3718-8

Date Sampled: 09/25/2006 1440

Client Matrix: Solid

% Moisture: 11.5

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11389

Instrument ID: SEA003

Preparation: 5035

Prep Batch: 580-11336

Lab File ID: CS167505.D

Dilution: 1.0

Initial Weight/Volume: 6.54 g

Date Analyzed: 09/28/2006 1854

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1514

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		0.82	J	0.44	6.9
Surrogate		%Rec			Acceptance Limits
4-Bromofluorobenzene (Surr)		100			50 - 150
Trifluorotoluene (Surr)		89			50 - 150
Ethylbenzene-d10		105			50 - 150
Fluorobenzene (Surr)		83			50 - 150
Toluene-d8 (Surr)		105			50 - 150

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-W**

Lab Sample ID: 580-3718-9

Date Sampled: 09/25/2006 1445

Client Matrix: Water

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11401

Instrument ID: SEA041

Preparation: 5030B

Lab File ID: GX0003045.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Date Analyzed: 09/28/2006 1609

Final Weight/Volume: 5 mL

Date Prepared: 09/28/2006 1609

Injection Volume:

Column ID: PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	0.012	J	0.0077	0.050
Surrogate	%Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)	100		50 - 150	
Trifluorotoluene (Surr)	100		50 - 150	
Ethylbenzene-d10	102		50 - 150	
Fluorobenzene (Surr)	95		50 - 150	
Toluene-d8 (Surr)	104		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP05-060925-015**

Lab Sample ID: 580-3718-10

Date Sampled: 09/25/2006 1545

Client Matrix: Solid

% Moisture: 5.5

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11389

Instrument ID: SEA003

Preparation: 5035

Prep Batch: 580-11336

Lab File ID: CS167506.D

Dilution: 1.0

Initial Weight/Volume: 6.64 g

Date Analyzed: 09/28/2006 1917

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1514

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		0.78	J	0.41	6.4
Surrogate		%Rec			Acceptance Limits
4-Bromofluorobenzene (Surr)		100			50 - 150
Trifluorotoluene (Surr)		88			50 - 150
Ethylbenzene-d10		105			50 - 150
Fluorobenzene (Surr)		84			50 - 150
Toluene-d8 (Surr)		105			50 - 150



# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP06-060926-030**

Lab Sample ID: 580-3718-11

Date Sampled: 09/26/2006 0900

Client Matrix: Solid

% Moisture: 57.0

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11389

Instrument ID: SEA003

Preparation: 5035

Prep Batch: 580-11336

Lab File ID: CS167507.D

Dilution: 1.0

Initial Weight/Volume: 4.97 g

Date Analyzed: 09/28/2006 1939

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1514

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		290		1.2	19
Surrogate		%Rec			Acceptance Limits
4-Bromofluorobenzene (Surr)		102			50 - 150
Trifluorotoluene (Surr)		82			50 - 150
Ethylbenzene-d10		105			50 - 150
Fluorobenzene (Surr)		84			50 - 150
Toluene-d8 (Surr)		105			50 - 150

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-020**

Lab Sample ID: 580-3718-12

Date Sampled: 09/26/2006 1010

Client Matrix: Solid

% Moisture: 7.7

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11389

Instrument ID: SEA003

Preparation: 5035

Prep Batch: 580-11336

Lab File ID: CS167508.D

Dilution: 1.0

Initial Weight/Volume: 7.26 g

Date Analyzed: 09/28/2006 2002

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1514

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		8.7		0.38	6.0
Surrogate		%Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)		100		50 - 150	
Trifluorotoluene (Surr)		89		50 - 150	
Ethylbenzene-d10		105		50 - 150	
Fluorobenzene (Surr)		84		50 - 150	
Toluene-d8 (Surr)		105		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-W**

Lab Sample ID: 580-3718-13

Date Sampled: 09/26/2006 1030

Client Matrix: Water

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11401

Instrument ID: SEA041

Preparation: 5030B

Lab File ID: GX0003046.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Date Analyzed: 09/28/2006 1631

Final Weight/Volume: 5 mL

Date Prepared: 09/28/2006 1631

Injection Volume:

Column ID: PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	ND		0.0077	0.050
Surrogate	%Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)	101		50 - 150	
Trifluorotoluene (Surr)	105		50 - 150	
Ethylbenzene-d10	102		50 - 150	
Fluorobenzene (Surr)	96		50 - 150	
Toluene-d8 (Surr)	104		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-WDUP**

Lab Sample ID: 580-3718-14  
Client Matrix: Water

Date Sampled: 09/26/2006 1035  
Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method:	NWTPH-Gx	Analysis Batch: 580-11401	Instrument ID:	SEA041
Preparation:	5030B		Lab File ID:	GX0003047.D
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	09/28/2006 1653		Final Weight/Volume:	5 mL
Date Prepared:	09/28/2006 1653		Injection Volume:	
			Column ID:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	ND		0.0077	0.050
Surrogate	%Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)	100		50 - 150	
Trifluorotoluene (Surr)	102		50 - 150	
Ethylbenzene-d10	102		50 - 150	
Fluorobenzene (Surr)	97		50 - 150	
Toluene-d8 (Surr)	105		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045**

Lab Sample ID: 580-3718-15

Date Sampled: 09/26/2006 1120

Client Matrix: Solid

% Moisture: 13.2

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11389

Instrument ID: SEA003

Preparation: 5035

Prep Batch: 580-11336

Lab File ID: CS167509.D

Dilution: 1.0

Initial Weight/Volume: 5.72 g

Date Analyzed: 09/28/2006 2024

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1514

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		2.8	J	0.51	8.1
Surrogate		%Rec			Acceptance Limits
4-Bromofluorobenzene (Surr)		100			50 - 150
Trifluorotoluene (Surr)		88			50 - 150
Ethylbenzene-d10		105			50 - 150
Fluorobenzene (Surr)		83			50 - 150
Toluene-d8 (Surr)		106			50 - 150

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045DUP**

Lab Sample ID: 580-3718-16

Date Sampled: 09/26/2006 1125

Client Matrix: Solid

% Moisture: 8.1

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11389

Instrument ID: SEA003

Preparation: 5035

Prep Batch: 580-11336

Lab File ID: CS167510.D

Dilution: 1.0

Initial Weight/Volume: 5.81 g

Date Analyzed: 09/28/2006 2046

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1514

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		1.4	J	0.48	7.5
Surrogate		%Rec			Acceptance Limits
4-Bromofluorobenzene (Surr)		100			50 - 150
Trifluorotoluene (Surr)		88			50 - 150
Ethylbenzene-d10		105			50 - 150
Fluorobenzene (Surr)		84			50 - 150
Toluene-d8 (Surr)		106			50 - 150

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP08-060926-010**

Lab Sample ID: 580-3718-17

Date Sampled: 09/26/2006 1315

Client Matrix: Solid

% Moisture: 6.4

Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-11389

Instrument ID: SEA003

Preparation: 5035

Prep Batch: 580-11336

Lab File ID: CS167511.D

Dilution: 1.0

Initial Weight/Volume: 5.69 g

Date Analyzed: 09/28/2006 2109

Final Weight/Volume: 400 mL

Date Prepared: 09/28/2006 1514

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		60		0.48	7.5
Surrogate		%Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)		102		50 - 150	
Trifluorotoluene (Surr)		84		50 - 150	
Ethylbenzene-d10		105		50 - 150	
Fluorobenzene (Surr)		83		50 - 150	
Toluene-d8 (Surr)		105		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-W**

Lab Sample ID: 580-3718-18  
Client Matrix: Water

Date Sampled: 09/26/2006 1145  
Date Received: 09/26/2006 1139

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## NWTPH-Gx Volatile Petroleum Products

Method:	NWTPH-Gx	Analysis Batch: 580-11401	Instrument ID:	SEA041
Preparation:	5030B		Lab File ID:	GX0003048.D
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	09/28/2006 1716		Final Weight/Volume:	5 mL
Date Prepared:	09/28/2006 1716		Injection Volume:	
			Column ID:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	0.018	J	0.0077	0.050
Surrogate	%Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)	100		50 - 150	
Trifluorotoluene (Surr)	101		50 - 150	
Ethylbenzene-d10	102		50 - 150	
Fluorobenzene (Surr)	96		50 - 150	
Toluene-d8 (Surr)	104		50 - 150	



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-010**

Lab Sample ID: 580-3718-1

Date Sampled: 09/25/2006 0945

Client Matrix: Solid

% Moisture: 12.9

Date Received: 09/26/2006 1139

### 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082

Analysis Batch: 580-11666

Instrument ID: SEA034

Preparation: 3550B

Prep Batch: 580-11625

Lab File ID: PCB3676.D

Dilution: 1.0

Initial Weight/Volume: 10.0301 g

Date Analyzed: 10/05/2006 1120

Final Weight/Volume: 10 mL

Date Prepared: 10/04/2006 1449

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.0066	0.011
PCB-1221		ND		0.0066	0.011
PCB-1232		ND		0.0066	0.011
PCB-1242		ND		0.0066	0.011
PCB-1248		ND		0.0066	0.011
PCB-1254		ND		0.0017	0.011
PCB-1260		ND		0.0017	0.011
Surrogate		%Rec		Acceptance Limits	
Tetrachloro-m-xylene		49	X	60 - 123	
DCB Decachlorobiphenyl		55	X	65 - 126	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-040**

Lab Sample ID: 580-3718-2

Date Sampled: 09/25/2006 0950

Client Matrix: Solid

% Moisture: 27.3

Date Received: 09/26/2006 1139

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## 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082

Analysis Batch: 580-11666

Instrument ID: SEA034

Preparation: 3550B

Prep Batch: 580-11625

Lab File ID: PCB3683.D

Dilution: 1.0

Initial Weight/Volume: 10.6767 g

Date Analyzed: 10/05/2006 1406

Final Weight/Volume: 10 mL

Date Prepared: 10/04/2006 1449

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.0075	0.013
PCB-1221		ND		0.0075	0.013
PCB-1232		ND		0.0075	0.013
PCB-1242		ND		0.0075	0.013
PCB-1248		ND		0.0075	0.013
PCB-1254		ND		0.0019	0.013
PCB-1260		ND		0.0019	0.013
Surrogate		%Rec		Acceptance Limits	
Tetrachloro-m-xylene		66		60 - 123	
DCB Decachlorobiphenyl		88		65 - 126	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-W**

Lab Sample ID: 580-3718-3  
 Client Matrix: Water

Date Sampled: 09/25/2006 1000  
 Date Received: 09/26/2006 1139

### 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method:	8082	Analysis Batch: 580-11379	Instrument ID: SEA034
Preparation:	3510C	Prep Batch: 580-11237	Lab File ID: PCB3418.D
Dilution:	1.0		Initial Weight/Volume: 995 mL
Date Analyzed:	09/28/2006 1951		Final Weight/Volume: 10 mL
Date Prepared:	09/27/2006 0802		Injection Volume:
			Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
PCB-1016	ND		0.080	0.10
PCB-1221	ND		0.080	0.10
PCB-1232	ND		0.080	0.10
PCB-1242	ND		0.080	0.10
PCB-1248	ND		0.080	0.10
PCB-1254	ND		0.050	0.10
PCB-1260	0.089	J	0.050	0.10
Surrogate	%Rec		Acceptance Limits	
Tetrachloro-m-xylene	116		32 - 134	
DCB Decachlorobiphenyl	53	X	55 - 128	

Method:	8082	Analysis Batch: 580-11379	Instrument ID: SEA034
Preparation:	3510C	Prep Batch: 580-11237	Lab File ID: PCB3418.D
Dilution:	1.0		Initial Weight/Volume: 995 mL
Date Analyzed:	09/28/2006 1951		Final Weight/Volume: 10 mL
Date Prepared:	09/27/2006 0802		Injection Volume:
			Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
PCB-1016	ND		0.080	0.10
PCB-1221	ND		0.080	0.10
PCB-1232	ND		0.080	0.10
PCB-1242	ND		0.080	0.10
PCB-1248	ND		0.080	0.10
PCB-1254	ND		0.050	0.10
PCB-1260	0.13		0.050	0.10
Surrogate	%Rec		Acceptance Limits	
Tetrachloro-m-xylene	107		32 - 134	
DCB Decachlorobiphenyl	61		55 - 128	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP03-060925-010**

Lab Sample ID: 580-3718-4

Date Sampled: 09/25/2006 1050

Client Matrix: Solid

% Moisture: 8.7

Date Received: 09/26/2006 1139

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## 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082

Analysis Batch: 580-11666

Instrument ID: SEA034

Preparation: 3550B

Prep Batch: 580-11625

Lab File ID: PCB3678.D

Dilution: 1.0

Initial Weight/Volume: 10.6098 g

Date Analyzed: 10/05/2006 1207

Final Weight/Volume: 10 mL

Date Prepared: 10/04/2006 1449

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.0060	0.010
PCB-1221		ND		0.0060	0.010
PCB-1232		ND		0.0060	0.010
PCB-1242		ND		0.0060	0.010
PCB-1248		ND		0.0060	0.010
PCB-1254		ND		0.0015	0.010
PCB-1260		0.0080	J	0.0015	0.010
Surrogate		%Rec		Acceptance Limits	
Tetrachloro-m-xylene		59	X	60 - 123	
DCB Decachlorobiphenyl		69		65 - 126	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP02-060925-010**

Lab Sample ID: 580-3718-5

Date Sampled: 09/25/2006 1200

Client Matrix: Solid

% Moisture: 6.2

Date Received: 09/26/2006 1139

### 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082

Analysis Batch: 580-11666

Instrument ID: SEA034

Preparation: 3550B

Prep Batch: 580-11625

Lab File ID: PCB3681.D

Dilution: 1.0

Initial Weight/Volume: 10.2323 g

Date Analyzed: 10/05/2006 1318

Final Weight/Volume: 10 mL

Date Prepared: 10/04/2006 1449

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.0060	0.010
PCB-1221		ND		0.0060	0.010
PCB-1232		ND		0.0060	0.010
PCB-1242		ND		0.0060	0.010
PCB-1248		ND		0.0060	0.010
PCB-1254		ND		0.0016	0.010
PCB-1260		ND		0.0016	0.010
Surrogate		%Rec		Acceptance Limits	
Tetrachloro-m-xylene		86		60 - 123	
DCB Decachlorobiphenyl		87		65 - 126	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-010**

Lab Sample ID: 580-3718-6

Date Sampled: 09/25/2006 1245

Client Matrix: Solid

% Moisture: 9.7

Date Received: 09/26/2006 1139

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## 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082

Analysis Batch: 580-11666

Instrument ID: SEA034

Preparation: 3550B

Prep Batch: 580-11625

Lab File ID: PCB3664.D

Dilution: 1.0

Initial Weight/Volume: 10.7560 g

Date Analyzed: 10/05/2006 0411

Final Weight/Volume: 10 mL

Date Prepared: 10/04/2006 1449

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.0060	0.010
PCB-1221		ND		0.0060	0.010
PCB-1232		ND		0.0060	0.010
PCB-1242		ND		0.0060	0.010
PCB-1248		ND		0.0060	0.010
PCB-1254		ND		0.0015	0.010
PCB-1260		ND		0.0015	0.010
Surrogate		%Rec		Acceptance Limits	
Tetrachloro-m-xylene		62		60 - 123	
DCB Decachlorobiphenyl		75		65 - 126	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-W**

Lab Sample ID: 580-3718-7  
 Client Matrix: Water

Date Sampled: 09/25/2006 1315  
 Date Received: 09/26/2006 1139

### 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082	Analysis Batch: 580-11379	Instrument ID: SEA034
Preparation: 3510C	Prep Batch: 580-11237	Lab File ID: PCB3419.D
Dilution: 1.0		Initial Weight/Volume: 995 mL
Date Analyzed: 09/28/2006 2014		Final Weight/Volume: 10 mL
Date Prepared: 09/27/2006 0802		Injection Volume:
		Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
PCB-1016	ND		0.080	0.10
PCB-1221	ND		0.080	0.10
PCB-1232	ND		0.080	0.10
PCB-1242	ND		0.080	0.10
PCB-1248	ND		0.080	0.10
PCB-1254	ND		0.050	0.10
PCB-1260	ND		0.050	0.10
Surrogate	%Rec		Acceptance Limits	
Tetrachloro-m-xylene	87		32 - 134	
DCB Decachlorobiphenyl	54	X	55 - 128	

Method: 8082	Analysis Batch: 580-11379	Instrument ID: SEA034
Preparation: 3510C	Prep Batch: 580-11237	Lab File ID: PCB3419.D
Dilution: 1.0		Initial Weight/Volume: 995 mL
Date Analyzed: 09/28/2006 2014		Final Weight/Volume: 10 mL
Date Prepared: 09/27/2006 0802		Injection Volume:
		Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
PCB-1016	ND		0.080	0.10
PCB-1221	ND		0.080	0.10
PCB-1232	ND		0.080	0.10
PCB-1242	ND		0.080	0.10
PCB-1248	ND		0.080	0.10
PCB-1254	ND		0.050	0.10
PCB-1260	0.055	J	0.050	0.10
Surrogate	%Rec		Acceptance Limits	
Tetrachloro-m-xylene	87		32 - 134	
DCB Decachlorobiphenyl	64		55 - 128	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-010**

Lab Sample ID: 580-3718-8

Date Sampled: 09/25/2006 1440

Client Matrix: Solid

% Moisture: 11.5

Date Received: 09/26/2006 1139

### 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082

Analysis Batch: 580-11604

Instrument ID: SEA034

Preparation: 3550B

Prep Batch: 580-11268

Lab File ID: PCB3564.D

Dilution: 1.0

Initial Weight/Volume: 10.8026 g

Date Analyzed: 10/03/2006 1024

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1350

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND	*	0.0061	0.010
PCB-1221		ND		0.0061	0.010
PCB-1232		ND		0.0061	0.010
PCB-1242		ND		0.0061	0.010
PCB-1248		ND		0.0061	0.010
PCB-1254		ND		0.0016	0.010
PCB-1260		ND	*	0.0016	0.010
Surrogate		%Rec		Acceptance Limits	
Tetrachloro-m-xylene		106		60 - 123	
DCB Decachlorobiphenyl		116		65 - 126	



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-W**

Lab Sample ID: 580-3718-9  
 Client Matrix: Water

Date Sampled: 09/25/2006 1445  
 Date Received: 09/26/2006 1139

### 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082	Analysis Batch: 580-11379	Instrument ID: SEA034
Preparation: 3510C	Prep Batch: 580-11237	Lab File ID: PCB3420.D
Dilution: 1.0		Initial Weight/Volume: 975 mL
Date Analyzed: 09/28/2006 2038		Final Weight/Volume: 10 mL
Date Prepared: 09/27/2006 0802		Injection Volume:
		Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
PCB-1016	ND		0.082	0.10
PCB-1221	ND		0.082	0.10
PCB-1232	ND		0.082	0.10
PCB-1242	ND		0.082	0.10
PCB-1248	ND		0.082	0.10
PCB-1254	ND		0.051	0.10
PCB-1260	ND		0.051	0.10
Surrogate	%Rec		Acceptance Limits	
Tetrachloro-m-xylene	118		32 - 134	
DCB Decachlorobiphenyl	72		55 - 128	

Method: 8082	Analysis Batch: 580-11379	Instrument ID: SEA034
Preparation: 3510C	Prep Batch: 580-11237	Lab File ID: PCB3420.D
Dilution: 1.0		Initial Weight/Volume: 975 mL
Date Analyzed: 09/28/2006 2038		Final Weight/Volume: 10 mL
Date Prepared: 09/27/2006 0802		Injection Volume:
		Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
PCB-1016	ND		0.082	0.10
PCB-1221	ND		0.082	0.10
PCB-1232	ND		0.082	0.10
PCB-1242	ND		0.082	0.10
PCB-1248	ND		0.082	0.10
PCB-1254	ND		0.051	0.10
PCB-1260	ND		0.051	0.10
Surrogate	%Rec		Acceptance Limits	
Tetrachloro-m-xylene	105		32 - 134	
DCB Decachlorobiphenyl	75		55 - 128	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP05-060925-015**

Lab Sample ID: 580-3718-10

Date Sampled: 09/25/2006 1545

Client Matrix: Solid

% Moisture: 5.5

Date Received: 09/26/2006 1139

### 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082

Analysis Batch: 580-11604

Instrument ID: SEA034

Preparation: 3550B

Prep Batch: 580-11268

Lab File ID: PCB3560.D

Dilution: 1.0

Initial Weight/Volume: 10.2941 g

Date Analyzed: 10/03/2006 0849

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1350

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND	*	0.0060	0.010
PCB-1221		ND		0.0060	0.010
PCB-1232		ND		0.0060	0.010
PCB-1242		ND		0.0060	0.010
PCB-1248		ND		0.0060	0.010
PCB-1254		ND		0.0015	0.010
PCB-1260		ND	*	0.0015	0.010
Surrogate		%Rec		Acceptance Limits	
Tetrachloro-m-xylene		111		60 - 123	
DCB Decachlorobiphenyl		109		65 - 126	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP06-060926-030**

Lab Sample ID: 580-3718-11

Date Sampled: 09/26/2006 0900

Client Matrix: Solid

% Moisture: 57.0

Date Received: 09/26/2006 1139

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## 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082

Analysis Batch: 580-11604

Instrument ID: SEA034

Preparation: 3550B

Prep Batch: 580-11268

Lab File ID: PCB3561.D

Dilution: 1.0

Initial Weight/Volume: 10.1995 g

Date Analyzed: 10/03/2006 0913

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1350

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND	*	0.013	0.023
PCB-1221		ND		0.013	0.023
PCB-1232		ND		0.013	0.023
PCB-1242		ND		0.013	0.023
PCB-1248		ND		0.013	0.023
PCB-1254		ND		0.0034	0.023
PCB-1260		ND	*	0.0034	0.023
Surrogate		%Rec		Acceptance Limits	
Tetrachloro-m-xylene		99		60 - 123	
DCB Decachlorobiphenyl		73		65 - 126	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-020**

Lab Sample ID: 580-3718-12

Date Sampled: 09/26/2006 1010

Client Matrix: Solid

% Moisture: 7.7

Date Received: 09/26/2006 1139

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## 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082

Analysis Batch: 580-11604

Instrument ID: SEA034

Preparation: 3550B

Prep Batch: 580-11268

Lab File ID: PCB3567.D

Dilution: 1.0

Initial Weight/Volume: 10.0546 g

Date Analyzed: 10/03/2006 1135

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1350

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND	*	0.0062	0.011
PCB-1221		ND		0.0062	0.011
PCB-1232		ND		0.0062	0.011
PCB-1242		ND		0.0062	0.011
PCB-1248		ND		0.0062	0.011
PCB-1254		ND		0.0016	0.011
PCB-1260		ND	*	0.0016	0.011
Surrogate		%Rec		Acceptance Limits	
Tetrachloro-m-xylene		118		60 - 123	
DCB Decachlorobiphenyl		119		65 - 126	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-W**

Lab Sample ID: 580-3718-13  
 Client Matrix: Water

Date Sampled: 09/26/2006 1030  
 Date Received: 09/26/2006 1139

### 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082	Analysis Batch: 580-11379	Instrument ID: SEA034
Preparation: 3510C	Prep Batch: 580-11237	Lab File ID: PCB3421.D
Dilution: 1.0		Initial Weight/Volume: 995 mL
Date Analyzed: 09/28/2006 2102		Final Weight/Volume: 10 mL
Date Prepared: 09/27/2006 0802		Injection Volume:
		Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
PCB-1016	ND		0.080	0.10
PCB-1221	ND		0.080	0.10
PCB-1232	ND		0.080	0.10
PCB-1242	ND		0.080	0.10
PCB-1248	ND		0.080	0.10
PCB-1254	ND		0.050	0.10
PCB-1260	ND		0.050	0.10
Surrogate	%Rec		Acceptance Limits	
Tetrachloro-m-xylene	118		32 - 134	
DCB Decachlorobiphenyl	64		55 - 128	

Method: 8082	Analysis Batch: 580-11379	Instrument ID: SEA034
Preparation: 3510C	Prep Batch: 580-11237	Lab File ID: PCB3421.D
Dilution: 1.0		Initial Weight/Volume: 995 mL
Date Analyzed: 09/28/2006 2102		Final Weight/Volume: 10 mL
Date Prepared: 09/27/2006 0802		Injection Volume:
		Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
PCB-1016	ND		0.080	0.10
PCB-1221	ND		0.080	0.10
PCB-1232	ND		0.080	0.10
PCB-1242	ND		0.080	0.10
PCB-1248	ND		0.080	0.10
PCB-1254	ND		0.050	0.10
PCB-1260	ND		0.050	0.10
Surrogate	%Rec		Acceptance Limits	
Tetrachloro-m-xylene	107		32 - 134	
DCB Decachlorobiphenyl	71		55 - 128	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-WDUP**

Lab Sample ID: 580-3718-14  
Client Matrix: Water

Date Sampled: 09/26/2006 1035  
Date Received: 09/26/2006 1139

### 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082	Analysis Batch: 580-11379	Instrument ID: SEA034
Preparation: 3510C	Prep Batch: 580-11237	Lab File ID: PCB3422.D
Dilution: 1.0		Initial Weight/Volume: 1005 mL
Date Analyzed: 09/28/2006 2125		Final Weight/Volume: 10 mL
Date Prepared: 09/27/2006 0802		Injection Volume:
		Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
PCB-1016	ND		0.080	0.10
PCB-1221	ND		0.080	0.10
PCB-1232	ND		0.080	0.10
PCB-1242	ND		0.080	0.10
PCB-1248	ND		0.080	0.10
PCB-1254	ND		0.050	0.10
PCB-1260	ND		0.050	0.10
Surrogate	%Rec		Acceptance Limits	
Tetrachloro-m-xylene	123		32 - 134	
DCB Decachlorobiphenyl	74		55 - 128	

Method: 8082	Analysis Batch: 580-11379	Instrument ID: SEA034
Preparation: 3510C	Prep Batch: 580-11237	Lab File ID: PCB3422.D
Dilution: 1.0		Initial Weight/Volume: 1005 mL
Date Analyzed: 09/28/2006 2125		Final Weight/Volume: 10 mL
Date Prepared: 09/27/2006 0802		Injection Volume:
		Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
PCB-1016	ND		0.080	0.10
PCB-1221	ND		0.080	0.10
PCB-1232	ND		0.080	0.10
PCB-1242	ND		0.080	0.10
PCB-1248	ND		0.080	0.10
PCB-1254	ND		0.050	0.10
PCB-1260	ND		0.050	0.10
Surrogate	%Rec		Acceptance Limits	
Tetrachloro-m-xylene	109		32 - 134	
DCB Decachlorobiphenyl	77		55 - 128	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045**

Lab Sample ID: 580-3718-15

Date Sampled: 09/26/2006 1120

Client Matrix: Solid

% Moisture: 13.2

Date Received: 09/26/2006 1139

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## 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082

Analysis Batch: 580-11604

Instrument ID: SEA034

Preparation: 3550B

Prep Batch: 580-11268

Lab File ID: PCB3568.D

Dilution: 1.0

Initial Weight/Volume: 10.9896 g

Date Analyzed: 10/03/2006 1159

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1350

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND	*	0.0061	0.010
PCB-1221		ND		0.0061	0.010
PCB-1232		ND		0.0061	0.010
PCB-1242		ND		0.0061	0.010
PCB-1248		ND		0.0061	0.010
PCB-1254		ND		0.0016	0.010
PCB-1260		ND	*	0.0016	0.010
Surrogate		%Rec		Acceptance Limits	
Tetrachloro-m-xylene		117		60 - 123	
DCB Decachlorobiphenyl		105		65 - 126	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045DUP**

Lab Sample ID: 580-3718-16

Date Sampled: 09/26/2006 1125

Client Matrix: Solid

% Moisture: 8.1

Date Received: 09/26/2006 1139

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## 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082

Analysis Batch: 580-11604

Instrument ID: SEA034

Preparation: 3550B

Prep Batch: 580-11268

Lab File ID: PCB3569.D

Dilution: 1.0

Initial Weight/Volume: 10.9405 g

Date Analyzed: 10/03/2006 1222

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1350

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND	*	0.0058	0.0099
PCB-1221		ND		0.0058	0.0099
PCB-1232		ND		0.0058	0.0099
PCB-1242		ND		0.0058	0.0099
PCB-1248		ND		0.0058	0.0099
PCB-1254		ND		0.0015	0.0099
PCB-1260		ND	*	0.0015	0.0099
Surrogate		%Rec		Acceptance Limits	
Tetrachloro-m-xylene		111		60 - 123	
DCB Decachlorobiphenyl		118		65 - 126	



# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP08-060926-010**

Lab Sample ID: 580-3718-17

Date Sampled: 09/26/2006 1315

Client Matrix: Solid

% Moisture: 6.4

Date Received: 09/26/2006 1139

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## 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082

Analysis Batch: 580-11666

Instrument ID: SEA034

Preparation: 3550B

Prep Batch: 580-11625

Lab File ID: PCB3682.D

Dilution: 1.0

Initial Weight/Volume: 10.1180 g

Date Analyzed: 10/05/2006 1342

Final Weight/Volume: 10 mL

Date Prepared: 10/04/2006 1449

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.0061	0.011
PCB-1221		ND		0.0061	0.011
PCB-1232		ND		0.0061	0.011
PCB-1242		ND		0.0061	0.011
PCB-1248		ND		0.0061	0.011
PCB-1254		ND		0.0016	0.011
PCB-1260		0.027		0.0016	0.011
Surrogate		%Rec		Acceptance Limits	
Tetrachloro-m-xylene		72		60 - 123	
DCB Decachlorobiphenyl		105		65 - 126	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-W**

Lab Sample ID: 580-3718-18  
 Client Matrix: Water

Date Sampled: 09/26/2006 1145  
 Date Received: 09/26/2006 1139

### 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082	Analysis Batch: 580-11379	Instrument ID: SEA034
Preparation: 3510C	Prep Batch: 580-11237	Lab File ID: PCB3423.D
Dilution: 1.0		Initial Weight/Volume: 980 mL
Date Analyzed: 09/28/2006 2149		Final Weight/Volume: 10 mL
Date Prepared: 09/27/2006 0802		Injection Volume:
		Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
PCB-1016	ND		0.082	0.10
PCB-1221	ND		0.082	0.10
PCB-1232	ND		0.082	0.10
PCB-1242	ND		0.082	0.10
PCB-1248	ND		0.082	0.10
PCB-1254	ND		0.051	0.10
PCB-1260	ND		0.051	0.10
Surrogate	%Rec		Acceptance Limits	
Tetrachloro-m-xylene	120		32 - 134	
DCB Decachlorobiphenyl	64		55 - 128	

Method: 8082	Analysis Batch: 580-11379	Instrument ID: SEA034
Preparation: 3510C	Prep Batch: 580-11237	Lab File ID: PCB3423.D
Dilution: 1.0		Initial Weight/Volume: 980 mL
Date Analyzed: 09/28/2006 2149		Final Weight/Volume: 10 mL
Date Prepared: 09/27/2006 0802		Injection Volume:
		Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
PCB-1016	ND		0.082	0.10
PCB-1221	ND		0.082	0.10
PCB-1232	ND		0.082	0.10
PCB-1242	ND		0.082	0.10
PCB-1248	ND		0.082	0.10
PCB-1254	ND		0.051	0.10
PCB-1260	ND		0.051	0.10
Surrogate	%Rec		Acceptance Limits	
Tetrachloro-m-xylene	106		32 - 134	
DCB Decachlorobiphenyl	70		55 - 128	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-010**

Lab Sample ID: 580-3718-1

Date Sampled: 09/25/2006 0945

Client Matrix: Solid

% Moisture: 12.9

Date Received: 09/26/2006 1139

---

## NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11356

Instrument ID: SEA015

Preparation: 3550B

Prep Batch: 580-11267

Lab File ID: PL13968.D

Dilution: 1.0

Initial Weight/Volume: 10.8651 g

Date Analyzed: 09/28/2006 1105

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1223

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Motor Oil (>C24-C36)		77		6.3	53
#2 Diesel (C10-C24)		25	J	6.4	26
Surrogate		%Rec		Acceptance Limits	
o-Terphenyl		87		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-040**

Lab Sample ID: 580-3718-2

Date Sampled: 09/25/2006 0950

Client Matrix: Solid

% Moisture: 27.3

Date Received: 09/26/2006 1139

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## NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11356

Instrument ID: SEA015

Preparation: 3550B

Prep Batch: 580-11267

Lab File ID: PL13969.D

Dilution: 1.0

Initial Weight/Volume: 10.6742 g

Date Analyzed: 09/28/2006 1125

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1223

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		3900		7.8	32
Surrogate		%Rec		Acceptance Limits	
o-Terphenyl		106		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-040**

Lab Sample ID: 580-3718-2

Date Sampled: 09/25/2006 0950

Client Matrix: Solid

% Moisture: 27.3

Date Received: 09/26/2006 1139

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## NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11356

Instrument ID: SEA015

Preparation: 3550B

Prep Batch: 580-11267

Lab File ID: PL13981.D

Dilution: 5.0

Initial Weight/Volume: 10.6742 g

Date Analyzed: 09/28/2006 1615

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1223

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Motor Oil (>C24-C36)		7200		39	320

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP04-060925-W**

Lab Sample ID: 580-3718-3

Date Sampled: 09/25/2006 1000

Client Matrix: Water

Date Received: 09/26/2006 1139

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### NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method:	NWTPH-Dx	Analysis Batch: 580-11354	Instrument ID:	SEA016
Preparation:	3510C	Prep Batch: 580-11251	Lab File ID:	EP19682.D
Dilution:	1.0		Initial Weight/Volume:	975 mL
Date Analyzed:	09/28/2006 1635		Final Weight/Volume:	5 mL
Date Prepared:	09/27/2006 1049		Injection Volume:	
			Column ID:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Motor Oil (>C24-C36)	3.8	*	0.062	0.51
#2 Diesel (C10-C24)	2.0		0.033	0.26
Surrogate	%Rec		Acceptance Limits	
o-Terphenyl	98		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP03-060925-010**

Lab Sample ID: 580-3718-4

Date Sampled: 09/25/2006 1050

Client Matrix: Solid

% Moisture: 8.7

Date Received: 09/26/2006 1139

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## NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11356

Instrument ID: SEA015

Preparation: 3550B

Prep Batch: 580-11267

Lab File ID: PL13970.D

Dilution: 1.0

Initial Weight/Volume: 10.2937 g

Date Analyzed: 09/28/2006 1151

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1223

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Motor Oil (>C24-C36)		620		6.4	53
#2 Diesel (C10-C24)		77		6.4	27
Surrogate		%Rec		Acceptance Limits	
o-Terphenyl		86		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP02-060925-010**

Lab Sample ID: 580-3718-5

Date Sampled: 09/25/2006 1200

Client Matrix: Solid

% Moisture: 6.2

Date Received: 09/26/2006 1139

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## NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11356

Instrument ID: SEA015

Preparation: 3550B

Prep Batch: 580-11267

Lab File ID: PL13979.D

Dilution: 10

Initial Weight/Volume: 10.7369 g

Date Analyzed: 09/28/2006 1524

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1223

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Motor Oil (>C24-C36)		9900		59	500
#2 Diesel (C10-C24)		580		60	250
Surrogate		%Rec			Acceptance Limits
o-Terphenyl		0	D X		50 - 150



# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-010**

Lab Sample ID: 580-3718-6

Date Sampled: 09/25/2006 1245

Client Matrix: Solid

% Moisture: 9.7

Date Received: 09/26/2006 1139

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## NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11356

Instrument ID: SEA015

Preparation: 3550B

Prep Batch: 580-11267

Lab File ID: PL13971.D

Dilution: 1.0

Initial Weight/Volume: 10.1853 g

Date Analyzed: 09/28/2006 1216

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1223

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Motor Oil (>C24-C36)		100		6.5	54
#2 Diesel (C10-C24)		22	J	6.5	27
Surrogate		%Rec		Acceptance Limits	
o-Terphenyl		81		50 - 150	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP01-060925-W**

Lab Sample ID: 580-3718-7

Date Sampled: 09/25/2006 1315

Client Matrix: Water

Date Received: 09/26/2006 1139

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### NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method:	NWTPH-Dx	Analysis Batch: 580-11354	Instrument ID:	SEA016
Preparation:	3510C	Prep Batch: 580-11251	Lab File ID:	EP19683.D
Dilution:	1.0		Initial Weight/Volume:	970 mL
Date Analyzed:	09/28/2006 1656		Final Weight/Volume:	5 mL
Date Prepared:	09/27/2006 1049		Injection Volume:	
			Column ID:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Motor Oil (>C24-C36)	0.36	J *	0.062	0.52
#2 Diesel (C10-C24)	0.25	J	0.033	0.26
Surrogate	%Rec		Acceptance Limits	
o-Terphenyl	101		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-010**

Lab Sample ID: 580-3718-8

Date Sampled: 09/25/2006 1440

Client Matrix: Solid

% Moisture: 11.5

Date Received: 09/26/2006 1139

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## NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11356

Instrument ID: SEA015

Preparation: 3550B

Prep Batch: 580-11267

Lab File ID: PL13972.D

Dilution: 1.0

Initial Weight/Volume: 10.1948 g

Date Analyzed: 09/28/2006 1242

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1223

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Motor Oil (>C24-C36)		ND		6.6	55
#2 Diesel (C10-C24)		ND		6.7	28
Surrogate		%Rec		Acceptance Limits	
o-Terphenyl		89		50 - 150	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP09-060925-W**

Lab Sample ID: 580-3718-9

Date Sampled: 09/25/2006 1445

Client Matrix: Water

Date Received: 09/26/2006 1139

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### NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11354

Instrument ID: SEA016

Preparation: 3510C

Prep Batch: 580-11251

Lab File ID: EP19684.D

Dilution: 1.0

Initial Weight/Volume: 965 mL

Date Analyzed: 09/28/2006 1718

Final Weight/Volume: 5 mL

Date Prepared: 09/27/2006 1049

Injection Volume:

Column ID: PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Motor Oil (>C24-C36)	ND	*	0.062	0.52
#2 Diesel (C10-C24)	ND		0.033	0.26
Surrogate	%Rec		Acceptance Limits	
o-Terphenyl	92		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP05-060925-015**

Lab Sample ID: 580-3718-10

Date Sampled: 09/25/2006 1545

Client Matrix: Solid

% Moisture: 5.5

Date Received: 09/26/2006 1139

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## NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11356

Instrument ID: SEA015

Preparation: 3550B

Prep Batch: 580-11267

Lab File ID: PL13974.D

Dilution: 1.0

Initial Weight/Volume: 10.3618 g

Date Analyzed: 09/28/2006 1322

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1223

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Motor Oil (>C24-C36)		ND		6.1	51
#2 Diesel (C10-C24)		9.1	J	6.2	26
Surrogate		%Rec		Acceptance Limits	
o-Terphenyl		94		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP06-060926-030**

Lab Sample ID: 580-3718-11

Date Sampled: 09/26/2006 0900

Client Matrix: Solid

% Moisture: 57.0

Date Received: 09/26/2006 1139

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## NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11356

Instrument ID: SEA015

Preparation: 3550B

Prep Batch: 580-11267

Lab File ID: PL13975.D

Dilution: 1.0

Initial Weight/Volume: 10.1280 g

Date Analyzed: 09/28/2006 1342

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1223

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Motor Oil (>C24-C36)		320		14	110
#2 Diesel (C10-C24)		97		14	57
Surrogate		%Rec			Acceptance Limits
o-Terphenyl		77			50 - 150

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-020**

Lab Sample ID: 580-3718-12

Date Sampled: 09/26/2006 1010

Client Matrix: Solid

% Moisture: 7.7

Date Received: 09/26/2006 1139

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### NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11356

Instrument ID: SEA015

Preparation: 3550B

Prep Batch: 580-11267

Lab File ID: PL13976.D

Dilution: 1.0

Initial Weight/Volume: 10.7662 g

Date Analyzed: 09/28/2006 1407

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1223

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Motor Oil (>C24-C36)		ND		6.0	50
#2 Diesel (C10-C24)		6.4	J	6.1	25
Surrogate		%Rec		Acceptance Limits	
o-Terphenyl		91		50 - 150	

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-W**

Lab Sample ID: 580-3718-13  
Client Matrix: Water

Date Sampled: 09/26/2006 1030  
Date Received: 09/26/2006 1139

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### NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method:	NWTPH-Dx	Analysis Batch: 580-11354	Instrument ID:	SEA016
Preparation:	3510C	Prep Batch: 580-11251	Lab File ID:	EP19685.D
Dilution:	1.0		Initial Weight/Volume:	1010 mL
Date Analyzed:	09/28/2006 1739		Final Weight/Volume:	5 mL
Date Prepared:	09/27/2006 1049		Injection Volume:	
			Column ID:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Motor Oil (>C24-C36)	0.14	J *	0.059	0.50
#2 Diesel (C10-C24)	0.055	J	0.032	0.25
Surrogate	%Rec		Acceptance Limits	
o-Terphenyl	105		50 - 150	



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP10-060926-WDUP**

Lab Sample ID: 580-3718-14  
Client Matrix: Water

Date Sampled: 09/26/2006 1035  
Date Received: 09/26/2006 1139

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### NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method:	NWTPH-Dx	Analysis Batch: 580-11354	Instrument ID: SEA016
Preparation:	3510C	Prep Batch: 580-11251	Lab File ID: EP19686.D
Dilution:	1.0		Initial Weight/Volume: 980 mL
Date Analyzed:	09/28/2006 1800		Final Weight/Volume: 5 mL
Date Prepared:	09/27/2006 1049		Injection Volume:
			Column ID: PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Motor Oil (>C24-C36)	0.076	J *	0.061	0.51
#2 Diesel (C10-C24)	0.047	J	0.033	0.26
Surrogate	%Rec		Acceptance Limits	
o-Terphenyl	108		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045**

Lab Sample ID: 580-3718-15

Date Sampled: 09/26/2006 1120

Client Matrix: Solid

% Moisture: 13.2

Date Received: 09/26/2006 1139

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## NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11356

Instrument ID: SEA015

Preparation: 3550B

Prep Batch: 580-11267

Lab File ID: PL13977.D

Dilution: 1.0

Initial Weight/Volume: 10.6604 g

Date Analyzed: 09/28/2006 1433

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1223

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Motor Oil (>C24-C36)		ND		6.5	54
#2 Diesel (C10-C24)		ND		6.5	27
Surrogate		%Rec		Acceptance Limits	
o-Terphenyl		80		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-045DUP**

Lab Sample ID: 580-3718-16

Date Sampled: 09/26/2006 1125

Client Matrix: Solid

% Moisture: 8.1

Date Received: 09/26/2006 1139

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## NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11356

Instrument ID: SEA015

Preparation: 3550B

Prep Batch: 580-11267

Lab File ID: PL13978.D

Dilution: 1.0

Initial Weight/Volume: 10.2372 g

Date Analyzed: 09/28/2006 1459

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1223

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Motor Oil (>C24-C36)		ND		6.4	53
#2 Diesel (C10-C24)		ND		6.4	27
Surrogate		%Rec		Acceptance Limits	
o-Terphenyl		95		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP08-060926-010**

Lab Sample ID: 580-3718-17

Date Sampled: 09/26/2006 1315

Client Matrix: Solid

% Moisture: 6.4

Date Received: 09/26/2006 1139

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## NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method: NWTPH-Dx

Analysis Batch: 580-11356

Instrument ID: SEA015

Preparation: 3550B

Prep Batch: 580-11267

Lab File ID: PL13980.D

Dilution: 10

Initial Weight/Volume: 10.7487 g

Date Analyzed: 09/28/2006 1550

Final Weight/Volume: 10 mL

Date Prepared: 09/27/2006 1223

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Motor Oil (>C24-C36)		8800		60	500
#2 Diesel (C10-C24)		7300		60	250
Surrogate		%Rec			Acceptance Limits
o-Terphenyl		0	D X		50 - 150

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Client Sample ID: DP07-060926-W**

Lab Sample ID: 580-3718-18  
Client Matrix: Water

Date Sampled: 09/26/2006 1145  
Date Received: 09/26/2006 1139

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### NWTPH-Dx Semi-Volatile Petroleum Products by NWTPH-Dx

Method:	NWTPH-Dx	Analysis Batch: 580-11354	Instrument ID:	SEA016
Preparation:	3510C	Prep Batch: 580-11251	Lab File ID:	EP19687.D
Dilution:	1.0		Initial Weight/Volume:	985 mL
Date Analyzed:	09/28/2006 1821		Final Weight/Volume:	5 mL
Date Prepared:	09/27/2006 1049		Injection Volume:	
			Column ID:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Motor Oil (>C24-C36)	0.23	J *	0.061	0.51
#2 Diesel (C10-C24)	0.090	J	0.032	0.25
Surrogate	%Rec		Acceptance Limits	
o-Terphenyl	73		50 - 150	

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

## Client Sample ID: DP04-060925-010

Lab Sample ID: 580-3718-1  
Client Matrix: Solid

% Moisture: 12.9

Date Sampled: 09/25/2006 0945  
Date Received: 09/26/2006 1139

### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B                      Analysis Batch: 580-11614                      Instrument ID: SEA027  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 1.1513 g  
Date Analyzed: 09/29/2006 1919                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Barium		29		0.0055	0.25
Chromium		22		0.011	0.50
Selenium		2.7		0.21	2.5
Silver		ND		0.015	0.50

### 6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020                      Analysis Batch: 580-11444                      Instrument ID: SEA026  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 10                      Initial Weight/Volume: 1.1513 g  
Date Analyzed: 09/29/2006 1527                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		3.8		0.036	0.20
Lead		12	B	0.0017	0.20
Cadmium		0.18	J	0.0040	0.20

### 7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A                      Analysis Batch: 580-11346                      Instrument ID: SEA029  
Preparation: 7471A                      Prep Batch: 580-11295                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 0.7050 g  
Date Analyzed: 09/28/2006 1211                      Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0826

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.019		0.0073	0.016

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

## Client Sample ID: DP04-060925-040

Lab Sample ID: 580-3718-2  
Client Matrix: Solid

% Moisture: 27.3

Date Sampled: 09/25/2006 0950  
Date Received: 09/26/2006 1139

### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B Analysis Batch: 580-11614 Instrument ID: SEA027  
Preparation: 3050B Prep Batch: 580-11375 Lab File ID: N/A  
Dilution: 1.0 Initial Weight/Volume: 1.1198 g  
Date Analyzed: 09/29/2006 1922 Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Barium		130		0.0068	0.31
Chromium		120		0.013	0.61
Selenium		73		0.26	3.1
Silver		2.0		0.018	0.61

### 6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020 Analysis Batch: 580-11444 Instrument ID: SEA026  
Preparation: 3050B Prep Batch: 580-11375 Lab File ID: N/A  
Dilution: 10 Initial Weight/Volume: 1.1198 g  
Date Analyzed: 09/29/2006 1531 Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		52		0.045	0.25
Lead		140	B	0.0021	0.25
Cadmium		5.2		0.0049	0.25

### 7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A Analysis Batch: 580-11346 Instrument ID: SEA029  
Preparation: 7471A Prep Batch: 580-11295 Lab File ID: N/A  
Dilution: 1.0 Initial Weight/Volume: 0.6305 g  
Date Analyzed: 09/28/2006 1216 Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0826

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.049		0.0098	0.022

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Client Sample ID: DP04-060925-W

Lab Sample ID: 580-3718-3  
Client Matrix: Water

Date Sampled: 09/25/2006 1000  
Date Received: 09/26/2006 1139

#### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry-Total Recoverable

Method: 6010B                      Analysis Batch: 580-11434                      Instrument ID: SEA027  
Preparation: 3005A                      Prep Batch: 580-11367                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/29/2006 1659                      Final Weight/Volume: 50 mL  
Date Prepared: 10/29/2006 0913

Analyte	Result (mg/L)	Qualifier	MDL	RL
Barium	0.041	B	0.00016	0.0050
Chromium	ND		0.00063	0.010
Selenium	ND		0.0044	0.050
Silver	ND		0.00083	0.010

#### 6020 Inductively Coupled Plasma - Mass Spectrometry-Total Recoverable

Method: 6020                      Analysis Batch: 580-11443                      Instrument ID: SEA026  
Preparation: 3005A                      Prep Batch: 580-11367                      Lab File ID: N/A  
Dilution: 5.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/29/2006 1211                      Final Weight/Volume: 50 mL  
Date Prepared: 10/29/2006 0913

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	ND		0.00037	0.0020
Lead	0.000080	J B	0.000016	0.0020
Cadmium	ND		0.000037	0.0020

#### 7470A Mercury in Liquid Waste (Manual Cold Vapor Technique)

Method: 7470A                      Analysis Batch: 580-11347                      Instrument ID: SEA029  
Preparation: 7470A                      Prep Batch: 580-11309                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/28/2006 1431                      Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0948

Analyte	Result (mg/L)	Qualifier	MDL	RL
Mercury	0.00014	J	0.000055	0.00020



# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

## Client Sample ID: DP03-060925-010

Lab Sample ID: 580-3718-4

Date Sampled: 09/25/2006 1050

Client Matrix: Solid

% Moisture: 8.7

Date Received: 09/26/2006 1139

### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B                      Analysis Batch: 580-11614                      Instrument ID: SEA027  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 1.0134 g  
Date Analyzed: 09/29/2006 1925                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Barium		59		0.0060	0.27
Chromium		18		0.012	0.54
Selenium		1.3	J	0.23	2.7
Silver		ND		0.016	0.54

### 6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020                      Analysis Batch: 580-11444                      Instrument ID: SEA026  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 10                      Initial Weight/Volume: 1.0134 g  
Date Analyzed: 09/29/2006 1535                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		4.4		0.039	0.22
Lead		19	B	0.0018	0.22
Cadmium		0.17	J	0.0043	0.22

### 7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A                      Analysis Batch: 580-11346                      Instrument ID: SEA029  
Preparation: 7471A                      Prep Batch: 580-11295                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 0.7660 g  
Date Analyzed: 09/28/2006 1221                      Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0826

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.070		0.0064	0.014

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Client Sample ID: DP02-060925-010

Lab Sample ID: 580-3718-5

Date Sampled: 09/25/2006 1200

Client Matrix: Solid

% Moisture: 6.2

Date Received: 09/26/2006 1139

#### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B Analysis Batch: 580-11614 Instrument ID: SEA027  
Preparation: 3050B Prep Batch: 580-11375 Lab File ID: N/A  
Dilution: 1.0 Initial Weight/Volume: 1.1517 g  
Date Analyzed: 09/29/2006 1928 Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Barium		47		0.0051	0.23
Chromium		12		0.0099	0.46
Selenium		3.4		0.20	2.3
Silver		ND		0.014	0.46

#### 6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020 Analysis Batch: 580-11444 Instrument ID: SEA026  
Preparation: 3050B Prep Batch: 580-11375 Lab File ID: N/A  
Dilution: 10 Initial Weight/Volume: 1.1517 g  
Date Analyzed: 09/29/2006 1539 Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		3.7		0.034	0.19
Lead		12	B	0.0015	0.19
Cadmium		ND		0.0037	0.19

#### 7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A Analysis Batch: 580-11346 Instrument ID: SEA029  
Preparation: 7471A Prep Batch: 580-11295 Lab File ID: N/A  
Dilution: 1.0 Initial Weight/Volume: 0.7585 g  
Date Analyzed: 09/28/2006 1225 Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0826

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.0063	0.014

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

## Client Sample ID: DP01-060925-010

Lab Sample ID: 580-3718-6

Date Sampled: 09/25/2006 1245

Client Matrix: Solid

% Moisture: 9.7

Date Received: 09/26/2006 1139

### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B Analysis Batch: 580-11614 Instrument ID: SEA027  
Preparation: 3050B Prep Batch: 580-11375 Lab File ID: N/A  
Dilution: 1.0 Initial Weight/Volume: 1.0694 g  
Date Analyzed: 09/29/2006 1931 Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Barium		52		0.0057	0.26
Chromium		19		0.011	0.52
Selenium		2.0	J	0.22	2.6
Silver		ND		0.015	0.52

### 6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020 Analysis Batch: 580-11444 Instrument ID: SEA026  
Preparation: 3050B Prep Batch: 580-11375 Lab File ID: N/A  
Dilution: 10 Initial Weight/Volume: 1.0694 g  
Date Analyzed: 09/29/2006 1543 Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		5.7		0.038	0.21
Lead		38	B	0.0017	0.21
Cadmium		0.046	J	0.0041	0.21

### 7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A Analysis Batch: 580-11346 Instrument ID: SEA029  
Preparation: 7471A Prep Batch: 580-11295 Lab File ID: N/A  
Dilution: 1.0 Initial Weight/Volume: 0.6216 g  
Date Analyzed: 09/28/2006 1231 Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0826

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.015	J	0.0080	0.018

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Client Sample ID: DP01-060925-W

Lab Sample ID: 580-3718-7  
Client Matrix: Water

Date Sampled: 09/25/2006 1315  
Date Received: 09/26/2006 1139

#### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry-Total Recoverable

Method: 6010B                      Analysis Batch: 580-11434                      Instrument ID: SEA027  
Preparation: 3005A                      Prep Batch: 580-11367                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/29/2006 1737                      Final Weight/Volume: 50 mL  
Date Prepared: 10/29/2006 0913

Analyte	Result (mg/L)	Qualifier	MDL	RL
Barium	0.015	B	0.00016	0.0050
Chromium	ND		0.00063	0.010
Selenium	ND		0.0044	0.050
Silver	ND		0.00083	0.010

#### 6020 Inductively Coupled Plasma - Mass Spectrometry-Total Recoverable

Method: 6020                      Analysis Batch: 580-11443                      Instrument ID: SEA026  
Preparation: 3005A                      Prep Batch: 580-11367                      Lab File ID: N/A  
Dilution: 5.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/29/2006 1247                      Final Weight/Volume: 50 mL  
Date Prepared: 10/29/2006 0913

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	0.0041		0.00037	0.0020
Lead	0.00023	J B	0.000016	0.0020
Cadmium	ND		0.000037	0.0020

#### 7470A Mercury in Liquid Waste (Manual Cold Vapor Technique)

Method: 7470A                      Analysis Batch: 580-11347                      Instrument ID: SEA029  
Preparation: 7470A                      Prep Batch: 580-11309                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/28/2006 1452                      Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0948

Analyte	Result (mg/L)	Qualifier	MDL	RL
Mercury	0.00029		0.000055	0.00020

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

## Client Sample ID: DP09-060925-010

Lab Sample ID: 580-3718-8

Date Sampled: 09/25/2006 1440

Client Matrix: Solid

% Moisture: 11.5

Date Received: 09/26/2006 1139

### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B                      Analysis Batch: 580-11614                      Instrument ID: SEA027  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 1.1446 g  
Date Analyzed: 09/29/2006 1934                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Barium		35		0.0055	0.25
Chromium		26		0.011	0.49
Selenium		2.6		0.21	2.5
Silver		ND		0.014	0.49

### 6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020                      Analysis Batch: 580-11444                      Instrument ID: SEA026  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 10                      Initial Weight/Volume: 1.1446 g  
Date Analyzed: 09/29/2006 1547                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		3.3		0.036	0.20
Lead		2.5	B	0.0016	0.20
Cadmium		ND		0.0040	0.20

### 7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A                      Analysis Batch: 580-11346                      Instrument ID: SEA029  
Preparation: 7471A                      Prep Batch: 580-11295                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 0.6662 g  
Date Analyzed: 09/28/2006 1235                      Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0826

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.033		0.0076	0.017

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Client Sample ID: DP09-060925-W

Lab Sample ID: 580-3718-9  
Client Matrix: Water

Date Sampled: 09/25/2006 1445  
Date Received: 09/26/2006 1139

#### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry-Total Recoverable

Method: 6010B                      Analysis Batch: 580-11434                      Instrument ID: SEA027  
Preparation: 3005A                      Prep Batch: 580-11367                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/29/2006 1740                      Final Weight/Volume: 50 mL  
Date Prepared: 10/29/2006 0913

Analyte	Result (mg/L)	Qualifier	MDL	RL
Barium	0.047	B	0.00016	0.0050
Chromium	ND		0.00063	0.010
Selenium	ND		0.0044	0.050
Silver	ND		0.00083	0.010

#### 6020 Inductively Coupled Plasma - Mass Spectrometry-Total Recoverable

Method: 6020                      Analysis Batch: 580-11443                      Instrument ID: SEA026  
Preparation: 3005A                      Prep Batch: 580-11367                      Lab File ID: N/A  
Dilution: 5.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/29/2006 1252                      Final Weight/Volume: 50 mL  
Date Prepared: 10/29/2006 0913

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	ND		0.00037	0.0020
Lead	ND		0.000016	0.0020
Cadmium	ND		0.000037	0.0020

#### 7470A Mercury in Liquid Waste (Manual Cold Vapor Technique)

Method: 7470A                      Analysis Batch: 580-11347                      Instrument ID: SEA029  
Preparation: 7470A                      Prep Batch: 580-11309                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/28/2006 1457                      Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0948

Analyte	Result (mg/L)	Qualifier	MDL	RL
Mercury	ND		0.000055	0.00020

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Client Sample ID: DP05-060925-015

Lab Sample ID: 580-3718-10

Date Sampled: 09/25/2006 1545

Client Matrix: Solid

% Moisture: 5.5

Date Received: 09/26/2006 1139

#### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B Analysis Batch: 580-11614 Instrument ID: SEA027  
Preparation: 3050B Prep Batch: 580-11375 Lab File ID: N/A  
Dilution: 1.0 Initial Weight/Volume: 1.1785 g  
Date Analyzed: 09/29/2006 1937 Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Barium		32		0.0050	0.22
Chromium		15		0.0096	0.45
Selenium		2.2	J	0.19	2.2
Silver		ND		0.013	0.45

#### 6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020 Analysis Batch: 580-11444 Instrument ID: SEA026  
Preparation: 3050B Prep Batch: 580-11375 Lab File ID: N/A  
Dilution: 10 Initial Weight/Volume: 1.1785 g  
Date Analyzed: 09/29/2006 1551 Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		1.7		0.033	0.18
Lead		2.2	B	0.0015	0.18
Cadmium		ND		0.0036	0.18

#### 7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A Analysis Batch: 580-11645 Instrument ID: SEA029  
Preparation: 7471A Prep Batch: 580-11295 Lab File ID: N/A  
Dilution: 1.0 Initial Weight/Volume: 0.7989 g  
Date Analyzed: 09/28/2006 1240 Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0826

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.019		0.0060	0.013

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

## Client Sample ID: DP06-060926-030

Lab Sample ID: 580-3718-11

Date Sampled: 09/26/2006 0900

Client Matrix: Solid

% Moisture: 57.0

Date Received: 09/26/2006 1139

### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B                      Analysis Batch: 580-11614                      Instrument ID: SEA027  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 1.0025 g  
Date Analyzed: 09/29/2006 1953                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Barium		50		0.013	0.58
Chromium		23		0.025	1.2
Selenium		2.8	J	0.49	5.8
Silver		ND		0.034	1.2

### 6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020                      Analysis Batch: 580-11444                      Instrument ID: SEA026  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 10                      Initial Weight/Volume: 1.0025 g  
Date Analyzed: 09/29/2006 1555                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		5.8		0.084	0.46
Lead		48	B	0.0039	0.46
Cadmium		0.31	J	0.0093	0.46

### 7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A                      Analysis Batch: 580-11346                      Instrument ID: SEA029  
Preparation: 7471A                      Prep Batch: 580-11295                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 0.6010 g  
Date Analyzed: 09/28/2006 1300                      Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0826

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.056		0.017	0.039



## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Client Sample ID: DP10-060926-020

Lab Sample ID: 580-3718-12

Date Sampled: 09/26/2006 1010

Client Matrix: Solid

% Moisture: 7.7

Date Received: 09/26/2006 1139

#### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B                      Analysis Batch: 580-11614                      Instrument ID: SEA027  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 1.1819 g  
Date Analyzed: 09/29/2006 1957                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Barium		44		0.0051	0.23
Chromium		23		0.0098	0.46
Selenium		2.9		0.19	2.3
Silver		ND		0.013	0.46

#### 6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020                      Analysis Batch: 580-11444                      Instrument ID: SEA026  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 10                      Initial Weight/Volume: 1.1819 g  
Date Analyzed: 09/29/2006 1559                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		2.0		0.033	0.18
Lead		2.6	B	0.0015	0.18
Cadmium		ND		0.0037	0.18

#### 7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A                      Analysis Batch: 580-11346                      Instrument ID: SEA029  
Preparation: 7471A                      Prep Batch: 580-11295                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 0.5771 g  
Date Analyzed: 09/28/2006 1304                      Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0826

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.0084	0.019

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Client Sample ID: DP10-060926-W

Lab Sample ID: 580-3718-13  
Client Matrix: Water

Date Sampled: 09/26/2006 1030  
Date Received: 09/26/2006 1139

#### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry-Total Recoverable

Method: 6010B                      Analysis Batch: 580-11434                      Instrument ID: SEA027  
Preparation: 3005A                      Prep Batch: 580-11367                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/29/2006 1742                      Final Weight/Volume: 50 mL  
Date Prepared: 10/29/2006 0913

Analyte	Result (mg/L)	Qualifier	MDL	RL
Barium	0.016	B	0.00016	0.0050
Chromium	ND		0.00063	0.010
Selenium	ND		0.0044	0.050
Silver	ND		0.00083	0.010

#### 6020 Inductively Coupled Plasma - Mass Spectrometry-Total Recoverable

Method: 6020                      Analysis Batch: 580-11443                      Instrument ID: SEA026  
Preparation: 3005A                      Prep Batch: 580-11367                      Lab File ID: N/A  
Dilution: 5.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/29/2006 1256                      Final Weight/Volume: 50 mL  
Date Prepared: 10/29/2006 0913

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	ND		0.00037	0.0020
Lead	ND		0.000016	0.0020
Cadmium	ND		0.000037	0.0020

#### 7470A Mercury in Liquid Waste (Manual Cold Vapor Technique)

Method: 7470A                      Analysis Batch: 580-11347                      Instrument ID: SEA029  
Preparation: 7470A                      Prep Batch: 580-11309                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/28/2006 1501                      Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0948

Analyte	Result (mg/L)	Qualifier	MDL	RL
Mercury	ND		0.000055	0.00020

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Client Sample ID: DP10-060926-WDUP

Lab Sample ID: 580-3718-14  
Client Matrix: Water

Date Sampled: 09/26/2006 1035  
Date Received: 09/26/2006 1139

#### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry-Total Recoverable

Method: 6010B                      Analysis Batch: 580-11434                      Instrument ID: SEA027  
Preparation: 3005A                      Prep Batch: 580-11367                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/29/2006 1745                      Final Weight/Volume: 50 mL  
Date Prepared: 10/29/2006 0913

Analyte	Result (mg/L)	Qualifier	MDL	RL
Barium	0.016	B	0.00016	0.0050
Chromium	ND		0.00063	0.010
Selenium	ND		0.0044	0.050
Silver	ND		0.00083	0.010

#### 6020 Inductively Coupled Plasma - Mass Spectrometry-Total Recoverable

Method: 6020                      Analysis Batch: 580-11443                      Instrument ID: SEA026  
Preparation: 3005A                      Prep Batch: 580-11367                      Lab File ID: N/A  
Dilution: 5.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/29/2006 1300                      Final Weight/Volume: 50 mL  
Date Prepared: 10/29/2006 0913

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	ND		0.00037	0.0020
Lead	ND		0.000016	0.0020
Cadmium	ND		0.000037	0.0020

#### 7470A Mercury in Liquid Waste (Manual Cold Vapor Technique)

Method: 7470A                      Analysis Batch: 580-11347                      Instrument ID: SEA029  
Preparation: 7470A                      Prep Batch: 580-11309                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/28/2006 1506                      Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0948

Analyte	Result (mg/L)	Qualifier	MDL	RL
Mercury	0.00011	J	0.000055	0.00020

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Client Sample ID: DP07-060926-045

Lab Sample ID: 580-3718-15

Date Sampled: 09/26/2006 1120

Client Matrix: Solid

% Moisture: 13.2

Date Received: 09/26/2006 1139

#### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B                      Analysis Batch: 580-11614                      Instrument ID: SEA027  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 1.3623 g  
Date Analyzed: 09/29/2006 2000                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Barium		25		0.0047	0.21
Chromium		15		0.0090	0.42
Selenium		ND		0.18	2.1
Silver		ND		0.012	0.42

#### 6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020                      Analysis Batch: 580-11444                      Instrument ID: SEA026  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 10                      Initial Weight/Volume: 1.3623 g  
Date Analyzed: 09/29/2006 1611                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		2.8		0.031	0.17
Lead		1.5	B	0.0014	0.17
Cadmium		0.023	J	0.0034	0.17

#### 7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A                      Analysis Batch: 580-11346                      Instrument ID: SEA029  
Preparation: 7471A                      Prep Batch: 580-11295                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 1.0233 g  
Date Analyzed: 09/28/2006 1309                      Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0826

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.0051	0.011

# Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

## Client Sample ID: DP07-060926-045DUP

Lab Sample ID: 580-3718-16 Date Sampled: 09/26/2006 1125  
Client Matrix: Solid % Moisture: 8.1 Date Received: 09/26/2006 1139

### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B Analysis Batch: 580-11614 Instrument ID: SEA027  
Preparation: 3050B Prep Batch: 580-11375 Lab File ID: N/A  
Dilution: 1.0 Initial Weight/Volume: 1.1375 g  
Date Analyzed: 09/29/2006 2003 Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Barium		18		0.0053	0.24
Chromium		17		0.010	0.48
Selenium		0.44	J	0.20	2.4
Silver		ND		0.014	0.48

### 6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020 Analysis Batch: 580-11444 Instrument ID: SEA026  
Preparation: 3050B Prep Batch: 580-11375 Lab File ID: N/A  
Dilution: 10 Initial Weight/Volume: 1.1375 g  
Date Analyzed: 09/29/2006 1615 Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		2.9		0.035	0.19
Lead		1.4	B	0.0016	0.19
Cadmium		ND		0.0038	0.19

### 7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A Analysis Batch: 580-11346 Instrument ID: SEA029  
Preparation: 7471A Prep Batch: 580-11295 Lab File ID: N/A  
Dilution: 1.0 Initial Weight/Volume: 0.6228 g  
Date Analyzed: 09/28/2006 1314 Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0826

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.011	J	0.0079	0.017

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Client Sample ID: DP08-060926-010

Lab Sample ID: 580-3718-17

Date Sampled: 09/26/2006 1315

Client Matrix: Solid

% Moisture: 6.4

Date Received: 09/26/2006 1139

#### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B                      Analysis Batch: 580-11614                      Instrument ID: SEA027  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 1.1961 g  
Date Analyzed: 09/29/2006 2006                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Barium		110		0.0050	0.22
Chromium		13		0.0096	0.45
Selenium		2.5		0.19	2.2
Silver		ND		0.013	0.45

#### 6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020                      Analysis Batch: 580-11444                      Instrument ID: SEA026  
Preparation: 3050B                      Prep Batch: 580-11375                      Lab File ID: N/A  
Dilution: 10                      Initial Weight/Volume: 1.1961 g  
Date Analyzed: 09/29/2006 1619                      Final Weight/Volume: 50 mL  
Date Prepared: 09/29/2006 1006

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		1.8		0.032	0.18
Lead		37	B	0.0015	0.18
Cadmium		0.24		0.0036	0.18

#### 7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A                      Analysis Batch: 580-11346                      Instrument ID: SEA029  
Preparation: 7471A                      Prep Batch: 580-11295                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 0.5960 g  
Date Analyzed: 09/28/2006 1319                      Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0826

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.038		0.0081	0.018

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Client Sample ID: DP07-060926-W

Lab Sample ID: 580-3718-18  
Client Matrix: Water

Date Sampled: 09/26/2006 1145  
Date Received: 09/26/2006 1139

#### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry-Total Recoverable

Method: 6010B                      Analysis Batch: 580-11434                      Instrument ID: SEA027  
Preparation: 3005A                      Prep Batch: 580-11367                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/29/2006 1748                      Final Weight/Volume: 50 mL  
Date Prepared: 10/29/2006 0913

Analyte	Result (mg/L)	Qualifier	MDL	RL
Barium	0.047	B	0.00016	0.0050
Chromium	ND		0.00063	0.010
Selenium	ND		0.0044	0.050
Silver	ND		0.00083	0.010

#### 6020 Inductively Coupled Plasma - Mass Spectrometry-Total Recoverable

Method: 6020                      Analysis Batch: 580-11443                      Instrument ID: SEA026  
Preparation: 3005A                      Prep Batch: 580-11367                      Lab File ID: N/A  
Dilution: 5.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/29/2006 1304                      Final Weight/Volume: 50 mL  
Date Prepared: 10/29/2006 0913

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	ND		0.00037	0.0020
Lead	ND		0.000016	0.0020
Cadmium	ND		0.000037	0.0020

#### 7470A Mercury in Liquid Waste (Manual Cold Vapor Technique)

Method: 7470A                      Analysis Batch: 580-11347                      Instrument ID: SEA029  
Preparation: 7470A                      Prep Batch: 580-11309                      Lab File ID: N/A  
Dilution: 1.0                      Initial Weight/Volume: 50 mL  
Date Analyzed: 09/28/2006 1511                      Final Weight/Volume: 50 mL  
Date Prepared: 09/28/2006 0948

Analyte	Result (mg/L)	Qualifier	MDL	RL
Mercury	0.00011	J	0.000055	0.00020

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11334**

**Method: 8260B  
Preparation: 5035**

Lab Sample ID: MB 580-11334/1-A  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 09/28/2006 1456  
 Date Prepared: 09/28/2006 1457

Analysis Batch: 580-11393  
 Prep Batch: 580-11334  
 Units: ug/Kg

Instrument ID: SEA001  
 Lab File ID: AG29549.D  
 Initial Weight/Volume: 10 g  
 Final Weight/Volume: 400 mL

Analyte	Result	Qual	MDL	RL
Dichlorodifluoromethane	ND		5.6	40
Chloromethane	ND		7.3	40
Vinyl chloride	ND		5.2	16
Bromomethane	ND		28	200
Chloroethane	ND		29	200
Trichlorofluoromethane	ND		3.8	40
1,1-Dichloroethene	ND		5.3	16
Methylene Chloride	ND		6.1	40
trans-1,2-Dichloroethene	ND		4.3	40
1,1-Dichloroethane	ND		9.5	40
2,2-Dichloropropane	ND		4.7	40
cis-1,2-Dichloroethene	ND		6.0	40
Chlorobromomethane	ND		4.8	40
Chloroform	ND		3.8	40
1,1,1-Trichloroethane	ND		3.9	16
Carbon tetrachloride	ND		3.0	16
1,1-Dichloropropene	ND		3.1	40
Benzene	ND		2.8	8.0
1,2-Dichloroethane	ND		8.1	40
Trichloroethene	ND		3.0	16
1,2-Dichloropropane	ND		2.5	8.0
Dibromomethane	ND		7.3	40
Dichlorobromomethane	ND		2.8	40
cis-1,3-Dichloropropene	ND		2.8	40
Toluene	ND		7.4	40
trans-1,3-Dichloropropene	ND		2.8	40
1,1,2-Trichloroethane	ND		3.6	40
Tetrachloroethene	ND		7.3	25
1,3-Dichloropropane	ND		4.2	16
Chlorodibromomethane	ND		2.5	40
Ethylene Dibromide	ND		6.6	40
Chlorobenzene	ND		12	40
Ethylbenzene	ND		7.2	40
1,1,1,2-Tetrachloroethane	ND		3.8	40
1,1,2,2-Tetrachloroethane	ND		2.4	8.0
m-Xylene & p-Xylene	ND		15	40
o-Xylene	ND		7.2	40
Styrene	ND		3.2	40
Bromoform	ND		2.8	40
Isopropylbenzene	ND		6.1	40
Bromobenzene	ND		3.6	40

Calculations are performed before rounding to avoid round-off errors in calculated results.



# Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

## Method Blank - Batch: 580-11334

Method: 8260B  
Preparation: 5035

Lab Sample ID: MB 580-11334/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1456  
Date Prepared: 09/28/2006 1457

Analysis Batch: 580-11393  
Prep Batch: 580-11334  
Units: ug/Kg

Instrument ID: SEA001  
Lab File ID: AG29549.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 400 mL

Analyte	Result	Qual	MDL	RL
N-Propylbenzene	ND		6.9	40
1,2,3-Trichloropropane	ND		7.1	40
2-Chlorotoluene	ND		5.8	40
1,3,5-Trimethylbenzene	ND		6.0	40
4-Chlorotoluene	ND		3.5	40
tert-Butylbenzene	ND		3.4	40
1,2,4-Trimethylbenzene	ND		6.9	40
sec-Butylbenzene	ND		1.6	40
1,3-Dichlorobenzene	ND		4.1	40
4-Isopropyltoluene	ND		2.8	40
1,4-Dichlorobenzene	ND		2.0	40
n-Butylbenzene	ND		2.4	40
1,2-Dichlorobenzene	ND		3.4	40
1,2-Dibromo-3-Chloropropane	ND		8.8	40
1,2,4-Trichlorobenzene	ND		3.9	40
1,2,3-Trichlorobenzene	ND		4.8	40
Hexachlorobutadiene	ND		6.6	40
Naphthalene	ND		2.6	40
Surrogate	% Rec		Acceptance Limits	
Fluorobenzene (Surr)	93		75 - 125	
Toluene-d8 (Surr)	92		75 - 125	
Ethylbenzene-d10	91		75 - 125	
4-Bromofluorobenzene (Surr)	87		75 - 125	
Trifluorotoluene (Surr)	113		75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11334**

**Method: 8260B  
Preparation: 5035**

LCS Lab Sample ID: LCS 580-11334/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1359  
Date Prepared: 09/28/2006 1457

Analysis Batch: 580-11393  
Prep Batch: 580-11334  
Units: ug/Kg

Instrument ID: SEA001  
Lab File ID: AG29546.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 400 mL

LCSD Lab Sample ID: LCSD 580-11334/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1418  
Date Prepared: 09/28/2006 1457

Analysis Batch: 580-11393  
Prep Batch: 580-11334  
Units: ug/Kg

Instrument ID: SEA001  
Lab File ID: AG29547.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 400 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Dichlorodifluoromethane	61	54	35 - 135	11	20		
Chloromethane	96	86	50 - 130	10	20		
Vinyl chloride	102	95	60 - 125	7	20		
Bromomethane	115	109	30 - 160	5	20		
Chloroethane	40	39	40 - 155	3	20	J	J *
Trichlorofluoromethane	112	105	25 - 185	7	20		
1,1-Dichloroethene	114	118	65 - 135	4	26		
Methylene Chloride	105	100	55 - 140	5	20		
trans-1,2-Dichloroethene	114	118	65 - 135	4	20		
1,1-Dichloroethane	122	120	75 - 125	2	20		
2,2-Dichloropropane	130	129	65 - 135	1	20		
cis-1,2-Dichloroethene	114	114	65 - 125	0	20		
Chlorobromomethane	109	107	70 - 125	2	20		
Chloroform	120	110	70 - 125	9	20		
1,1,1-Trichloroethane	118	113	70 - 135	4	20		
Carbon tetrachloride	123	114	65 - 135	8	20		
1,1-Dichloropropene	116	116	70 - 135	1	20		
Benzene	112	108	75 - 125	4	22		
1,2-Dichloroethane	107	102	70 - 135	5	20		
Trichloroethene	114	112	75 - 125	2	28		
1,2-Dichloropropane	115	107	70 - 120	7	20		
Dibromomethane	110	104	75 - 130	6	20		
Dichlorobromomethane	109	98	70 - 130	10	20		
cis-1,3-Dichloropropene	111	103	70 - 125	7	20		
Toluene	110	104	70 - 125	6	21		
trans-1,3-Dichloropropene	102	92	65 - 125	11	20		
1,1,2-Trichloroethane	99	98	60 - 125	1	20		
Tetrachloroethene	115	109	65 - 140	5	20		
1,3-Dichloropropane	106	98	75 - 125	7	20		
Chlorodibromomethane	101	89	65 - 130	13	20		
Ethylene Dibromide	103	100	70 - 125	3	20		
Chlorobenzene	110	100	75 - 125	10	24		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11334**

**Method: 8260B  
Preparation: 5035**

LCS Lab Sample ID: LCS 580-11334/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1359  
Date Prepared: 09/28/2006 1457

Analysis Batch: 580-11393  
Prep Batch: 580-11334  
Units: ug/Kg

Instrument ID: SEA001  
Lab File ID: AG29546.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 400 mL

LCSD Lab Sample ID: LCSD 580-11334/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1418  
Date Prepared: 09/28/2006 1457

Analysis Batch: 580-11393  
Prep Batch: 580-11334  
Units: ug/Kg

Instrument ID: SEA001  
Lab File ID: AG29547.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 400 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ethylbenzene	116	106	75 - 125	9	20		
1,1,1,2-Tetrachloroethane	110	98	75 - 125	12	20		
1,1,2,2-Tetrachloroethane	91	93	55 - 130	2	20		
m-Xylene & p-Xylene	112	102	80 - 125	10	20		
o-Xylene	107	98	75 - 125	9	20		
Styrene	111	103	75 - 125	8	20		
Bromoform	104	92	55 - 135	12	20		
Isopropylbenzene	114	105	75 - 130	8	20		
Bromobenzene	104	97	65 - 120	7	20		
N-Propylbenzene	117	108	65 - 135	8	20		
1,2,3-Trichloropropane	93	96	65 - 130	3	20		
2-Chlorotoluene	110	100	70 - 130	10	20		
1,3,5-Trimethylbenzene	115	103	65 - 135	11	20		
4-Chlorotoluene	109	100	75 - 125	8	20		
tert-Butylbenzene	119	109	65 - 130	8	20		
1,2,4-Trimethylbenzene	114	104	65 - 135	9	20		
sec-Butylbenzene	117	107	65 - 130	9	20		
1,3-Dichlorobenzene	103	94	70 - 125	9	20		
4-Isopropyltoluene	114	104	75 - 135	9	20		
1,4-Dichlorobenzene	109	102	70 - 125	6	20		
n-Butylbenzene	125	114	65 - 140	9	20		
1,2-Dichlorobenzene	105	99	75 - 120	6	20		
1,2-Dibromo-3-Chloropropane	92	92	40 - 135	0	20		
1,2,4-Trichlorobenzene	107	103	65 - 130	4	20		
1,2,3-Trichlorobenzene	104	98	60 - 135	5	20		
Hexachlorobutadiene	124	117	55 - 140	5	20		
Naphthalene	95	96	40 - 125	1	20		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Fluorobenzene (Surr)	92		92		75 - 125		
Toluene-d8 (Surr)	92		91		75 - 125		
Ethylbenzene-d10	94		90		75 - 125		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene (Surr)	89	85	75 - 125
Trifluorotoluene (Surr)	116	116	75 - 125

Calculations are performed before rounding to avoid round-off errors in calculated results.

# Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

## Method Blank - Batch: 580-11480

Method: 8260B  
Preparation: 5035

Lab Sample ID: MB 580-11480/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/03/2006 1628  
Date Prepared: 10/02/2006 1518

Analysis Batch: 580-11569  
Prep Batch: 580-11480  
Units: ug/Kg

Instrument ID: SEA001  
Lab File ID: AG29613.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 400 mL

Analyte	Result	Qual	MDL	RL
Dichlorodifluoromethane	ND		5.6	40
Chloromethane	ND		7.3	40
Vinyl chloride	ND		5.2	16
Bromomethane	ND		28	200
Chloroethane	ND		29	200
Trichlorofluoromethane	ND		3.8	40
1,1-Dichloroethene	ND		5.3	16
Methylene Chloride	ND		6.1	40
trans-1,2-Dichloroethene	ND		4.3	40
1,1-Dichloroethane	ND		9.5	40
2,2-Dichloropropane	ND		4.7	40
cis-1,2-Dichloroethene	ND		6.0	40
Chlorobromomethane	ND		4.8	40
Chloroform	ND		3.8	40
1,1,1-Trichloroethane	ND		3.9	16
Carbon tetrachloride	ND		3.0	16
1,1-Dichloropropene	ND		3.1	40
Benzene	ND		2.8	8.0
1,2-Dichloroethane	ND		8.1	40
Trichloroethene	ND		3.0	16
1,2-Dichloropropane	ND		2.5	8.0
Dibromomethane	ND		7.3	40
Dichlorobromomethane	ND		2.8	40
cis-1,3-Dichloropropene	ND		2.8	40
Toluene	ND		7.4	40
trans-1,3-Dichloropropene	ND		2.8	40
1,1,2-Trichloroethane	ND		3.6	40
Tetrachloroethene	ND		7.3	25
1,3-Dichloropropane	ND		4.2	16
Chlorodibromomethane	ND		2.5	40
Ethylene Dibromide	ND		6.6	40
Chlorobenzene	ND		12	40
Ethylbenzene	ND		7.2	40
1,1,1,2-Tetrachloroethane	ND		3.8	40
1,1,2,2-Tetrachloroethane	ND		2.4	8.0
m-Xylene & p-Xylene	ND		15	40
o-Xylene	ND		7.2	40
Styrene	ND		3.2	40
Bromoform	ND		2.8	40
Isopropylbenzene	ND		6.1	40
Bromobenzene	ND		3.6	40

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11480**

**Method: 8260B  
Preparation: 5035**

Lab Sample ID: MB 580-11480/1-A  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 10/03/2006 1628  
 Date Prepared: 10/02/2006 1518

Analysis Batch: 580-11569  
 Prep Batch: 580-11480  
 Units: ug/Kg

Instrument ID: SEA001  
 Lab File ID: AG29613.D  
 Initial Weight/Volume: 10 g  
 Final Weight/Volume: 400 mL

Analyte	Result	Qual	MDL	RL
N-Propylbenzene	ND		6.9	40
1,2,3-Trichloropropane	ND		7.1	40
2-Chlorotoluene	ND		5.8	40
1,3,5-Trimethylbenzene	ND		6.0	40
4-Chlorotoluene	ND		3.5	40
tert-Butylbenzene	ND		3.4	40
1,2,4-Trimethylbenzene	ND		6.9	40
sec-Butylbenzene	ND		1.6	40
1,3-Dichlorobenzene	ND		4.1	40
4-Isopropyltoluene	ND		2.8	40
1,4-Dichlorobenzene	ND		2.0	40
n-Butylbenzene	ND		2.4	40
1,2-Dichlorobenzene	ND		3.4	40
1,2-Dibromo-3-Chloropropane	ND		8.8	40
1,2,4-Trichlorobenzene	ND		3.9	40
1,2,3-Trichlorobenzene	ND		4.8	40
Hexachlorobutadiene	ND		6.6	40
Naphthalene	ND		2.6	40
Surrogate	% Rec	Acceptance Limits		
Fluorobenzene (Surr)	93	75 - 125		
Toluene-d8 (Surr)	88	75 - 125		
Ethylbenzene-d10	85	75 - 125		
4-Bromofluorobenzene (Surr)	77	75 - 125		
Trifluorotoluene (Surr)	114	75 - 125		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11480**

**Method: 8260B  
Preparation: 5035**

LCS Lab Sample ID: LCS 580-11480/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/03/2006 1532  
Date Prepared: 10/02/2006 1518

Analysis Batch: 580-11569  
Prep Batch: 580-11480  
Units: ug/Kg

Instrument ID: SEA001  
Lab File ID: AG29610.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 400 mL

LCSD Lab Sample ID: LCSD 580-11480/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/03/2006 1551  
Date Prepared: 10/02/2006 1518

Analysis Batch: 580-11569  
Prep Batch: 580-11480  
Units: ug/Kg

Instrument ID: SEA001  
Lab File ID: AG29611.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 400 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Dichlorodifluoromethane	49	49	35 - 135	0	20		
Chloromethane	80	75	50 - 130	6	20		
Vinyl chloride	88	87	60 - 125	1	20		
Bromomethane	87	80	30 - 160	9	20	J	J
Chloroethane	34	32	40 - 155	7	20	J*	J*
Trichlorofluoromethane	65	26	25 - 185	87	20		*
1,1-Dichloroethene	110	124	65 - 135	12	26		
Methylene Chloride	93	104	55 - 140	11	20		
trans-1,2-Dichloroethene	110	124	65 - 135	12	20		
1,1-Dichloroethane	113	124	75 - 125	9	20		
2,2-Dichloropropane	124	139	65 - 135	12	20		*
cis-1,2-Dichloroethene	109	125	65 - 125	14	20		
Chlorobromomethane	101	114	70 - 125	12	20		
Chloroform	105	117	70 - 125	11	20		
1,1,1-Trichloroethane	111	125	70 - 135	12	20		
Carbon tetrachloride	119	130	65 - 135	9	20		
1,1-Dichloropropene	113	127	70 - 135	12	20		
Benzene	102	112	75 - 125	9	22		
1,2-Dichloroethane	92	106	70 - 135	14	20		
Trichloroethene	111	122	75 - 125	10	28		
1,2-Dichloropropane	103	113	70 - 120	10	20		
Dibromomethane	96	109	75 - 130	13	20		
Dichlorobromomethane	94	97	70 - 130	3	20		
cis-1,3-Dichloropropene	98	106	70 - 125	8	20		
Toluene	95	105	70 - 125	9	21		
trans-1,3-Dichloropropene	88	92	65 - 125	5	20		
1,1,2-Trichloroethane	87	95	60 - 125	9	20		
Tetrachloroethene	103	112	65 - 140	9	20		
1,3-Dichloropropane	90	99	75 - 125	9	20		
Chlorodibromomethane	85	85	65 - 130	1	20		
Ethylene Dibromide	87	94	70 - 125	8	20		
Chlorobenzene	91	98	75 - 125	8	24		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11480**

**Method: 8260B  
Preparation: 5035**

LCS Lab Sample ID: LCS 580-11480/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/03/2006 1532  
Date Prepared: 10/02/2006 1518

Analysis Batch: 580-11569  
Prep Batch: 580-11480  
Units: ug/Kg

Instrument ID: SEA001  
Lab File ID: AG29610.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 400 mL

LCSD Lab Sample ID: LCSD 580-11480/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/03/2006 1551  
Date Prepared: 10/02/2006 1518

Analysis Batch: 580-11569  
Prep Batch: 580-11480  
Units: ug/Kg

Instrument ID: SEA001  
Lab File ID: AG29611.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 400 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ethylbenzene	97	102	75 - 125	6	20		
1,1,1,2-Tetrachloroethane	93	94	75 - 125	1	20		
1,1,2,2-Tetrachloroethane	79	89	55 - 130	12	20		
m-Xylene & p-Xylene	94	98	80 - 125	4	20		
o-Xylene	90	95	75 - 125	5	20		
Styrene	94	100	75 - 125	6	20		
Bromoform	92	87	55 - 135	6	20		
Isopropylbenzene	98	104	75 - 130	6	20		
Bromobenzene	88	92	65 - 120	5	20		
N-Propylbenzene	101	104	65 - 135	3	20		
1,2,3-Trichloropropane	76	87	65 - 130	14	20		
2-Chlorotoluene	92	98	70 - 130	7	20		
1,3,5-Trimethylbenzene	99	102	65 - 135	4	20		
4-Chlorotoluene	91	96	75 - 125	5	20		
tert-Butylbenzene	106	110	65 - 130	3	20		
1,2,4-Trimethylbenzene	98	102	65 - 135	4	20		
sec-Butylbenzene	105	110	65 - 130	5	20		
1,3-Dichlorobenzene	86	91	70 - 125	5	20		
4-Isopropyltoluene	104	108	75 - 135	4	20		
1,4-Dichlorobenzene	96	106	70 - 125	10	20		
n-Butylbenzene	123	132	65 - 140	7	20		
1,2-Dichlorobenzene	96	106	75 - 120	10	20		
1,2-Dibromo-3-Chloropropane	84	106	40 - 135	23	20		*
1,2,4-Trichlorobenzene	106	115	65 - 130	9	20		
1,2,3-Trichlorobenzene	98	112	60 - 135	13	20		
Hexachlorobutadiene	126	134	55 - 140	6	20		
Naphthalene	89	105	40 - 125	17	20		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Fluorobenzene (Surr)	91		91		75 - 125		
Toluene-d8 (Surr)	89		88		75 - 125		
Ethylbenzene-d10	88		85		75 - 125		

Calculations are performed before rounding to avoid round-off errors in calculated results.



## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene (Surr)	81	77	75 - 125
Trifluorotoluene (Surr)	113	114	75 - 125

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11519**

**Method: 8260B**

**Preparation: 5030B**

Lab Sample ID: MB 580-11519/1  
 Client Matrix: Water  
 Dilution: 1.0  
 Date Analyzed: 10/02/2006 1237  
 Date Prepared: 10/02/2006 1237

Analysis Batch: 580-11519  
 Prep Batch: N/A  
 Units: ug/L

Instrument ID: SEA036  
 Lab File ID: hp12726.D  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Dichlorodifluoromethane	ND		0.13	1.0
Chloromethane	ND		0.18	1.0
Vinyl chloride	ND		0.18	1.0
Bromomethane	ND		0.23	1.0
Chloroethane	ND		0.19	5.0
Trichlorofluoromethane	ND		0.088	1.0
1,1-Dichloroethene	ND		0.098	1.0
Methylene Chloride	ND		0.090	1.0
trans-1,2-Dichloroethene	ND		0.074	1.0
1,1-Dichloroethane	ND		0.11	1.0
2,2-Dichloropropane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.079	1.0
Chlorobromomethane	ND		0.14	1.0
Chloroform	ND		0.067	1.0
1,1,1-Trichloroethane	ND		0.11	1.0
Carbon tetrachloride	ND		0.070	1.0
1,1-Dichloropropene	ND		0.080	1.0
Benzene	ND		0.10	1.0
1,2-Dichloroethane	ND		0.20	1.0
Trichloroethene	ND		0.074	1.0
1,2-Dichloropropane	ND		0.092	1.0
Dibromomethane	ND		0.13	1.0
Dichlorobromomethane	ND		0.076	1.0
cis-1,3-Dichloropropene	ND		0.064	1.0
Toluene	ND		0.066	1.0
trans-1,3-Dichloropropene	ND		0.082	1.0
1,1,2-Trichloroethane	ND		0.076	1.0
Tetrachloroethene	ND		0.088	1.0
1,3-Dichloropropane	ND		0.10	1.0
Chlorodibromomethane	ND		0.11	1.0
Ethylene Dibromide	ND		0.076	1.0
Chlorobenzene	ND		0.063	1.0
Ethylbenzene	ND		0.085	1.0
1,1,1,2-Tetrachloroethane	ND		0.073	1.0
1,1,2,2-Tetrachloroethane	ND		0.11	1.0
m-Xylene & p-Xylene	ND		0.17	2.0
o-Xylene	ND		0.068	1.0
Styrene	ND		0.061	1.0
Bromoform	ND		0.076	1.0
Isopropylbenzene	ND		0.084	1.0
Bromobenzene	ND		0.079	1.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11519**

**Method: 8260B**  
**Preparation: 5030B**

Lab Sample ID: MB 580-11519/1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 10/02/2006 1237  
Date Prepared: 10/02/2006 1237

Analysis Batch: 580-11519  
Prep Batch: N/A  
Units: ug/L

Instrument ID: SEA036  
Lab File ID: hp12726.D  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
N-Propylbenzene	ND		0.069	1.0
1,2,3-Trichloropropane	ND		0.11	1.0
2-Chlorotoluene	ND		0.060	1.0
1,3,5-Trimethylbenzene	ND		0.077	1.0
4-Chlorotoluene	ND		0.098	1.0
tert-Butylbenzene	ND		0.048	1.0
1,2,4-Trimethylbenzene	ND		0.086	1.0
sec-Butylbenzene	ND		0.040	1.0
1,3-Dichlorobenzene	ND		0.040	1.0
4-Isopropyltoluene	ND		0.077	1.0
1,4-Dichlorobenzene	ND		0.052	1.0
n-Butylbenzene	ND		0.098	1.0
1,2-Dichlorobenzene	ND		0.070	1.0
1,2-Dibromo-3-Chloropropane	ND		0.43	2.0
1,2,4-Trichlorobenzene	ND		0.046	1.0
1,2,3-Trichlorobenzene	ND		0.089	1.0
Hexachlorobutadiene	ND		0.14	1.0
Naphthalene	ND		0.070	1.0
Surrogate	% Rec	Acceptance Limits		
Fluorobenzene (Surr)	91	80 - 120		
Toluene-d8 (Surr)	94	80 - 120		
Ethylbenzene-d10	94	80 - 120		
4-Bromofluorobenzene (Surr)	92	80 - 120		
Trifluorotoluene (Surr)	97	80 - 120		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11519**

**Method: 8260B  
Preparation: 5030B**

LCS Lab Sample ID: LCS 580-11519/2  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 10/02/2006 1137  
Date Prepared: 10/02/2006 1137

Analysis Batch: 580-11519  
Prep Batch: N/A  
Units: ug/L

Instrument ID: SEA036  
Lab File ID: HP12723.D  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 580-11519/3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 10/02/2006 1157  
Date Prepared: 10/02/2006 1157

Analysis Batch: 580-11519  
Prep Batch: N/A  
Units: ug/L

Instrument ID: SEA036  
Lab File ID: HP12724.D  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Dichlorodifluoromethane	54	49	30 - 155	8	20		
Chloromethane	68	65	40 - 125	5	20		
Vinyl chloride	75	82	50 - 145	9	20		
Bromomethane	74	79	30 - 145	7	20		
Chloroethane	81	84	60 - 135	4	20	J	J
Trichlorofluoromethane	94	88	60 - 145	7	20		
1,1-Dichloroethene	98	97	70 - 130	1	15		
Methylene Chloride	94	96	55 - 140	2	20		
trans-1,2-Dichloroethene	103	99	60 - 140	3	20		
1,1-Dichloroethane	87	88	70 - 135	2	20		
2,2-Dichloropropane	93	95	70 - 135	2	20		
cis-1,2-Dichloroethene	98	97	70 - 125	1	20		
Chlorobromomethane	88	87	65 - 130	1	20		
Chloroform	88	93	65 - 135	6	20		
1,1,1-Trichloroethane	99	95	65 - 130	4	20		
Carbon tetrachloride	102	106	65 - 140	4	20		
1,1-Dichloropropene	89	94	75 - 130	6	20		
Benzene	91	93	80 - 120	2	12		
1,2-Dichloroethane	86	86	70 - 130	0	20		
Trichloroethene	102	100	75 - 125	2	13		
1,2-Dichloropropane	96	94	75 - 125	2	20		
Dibromomethane	107	102	75 - 125	5	20		
Dichlorobromomethane	102	99	75 - 120	3	20		
cis-1,3-Dichloropropene	105	104	70 - 130	1	20		
Toluene	100	99	75 - 120	1	12		
trans-1,3-Dichloropropene	99	95	55 - 140	4	20		
1,1,2-Trichloroethane	96	95	75 - 125	1	20		
Tetrachloroethene	111	107	45 - 150	4	20		
1,3-Dichloropropane	96	96	75 - 125	1	20		
Chlorodibromomethane	104	100	60 - 135	3	20		
Ethylene Dibromide	101	103	80 - 120	1	20		
Chlorobenzene	100	98	80 - 120	2	13		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11519**

**Method: 8260B  
Preparation: 5030B**

LCS Lab Sample ID: LCS 580-11519/2  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 10/02/2006 1137  
Date Prepared: 10/02/2006 1137

Analysis Batch: 580-11519  
Prep Batch: N/A  
Units: ug/L

Instrument ID: SEA036  
Lab File ID: HP12723.D  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 580-11519/3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 10/02/2006 1157  
Date Prepared: 10/02/2006 1157

Analysis Batch: 580-11519  
Prep Batch: N/A  
Units: ug/L

Instrument ID: SEA036  
Lab File ID: HP12724.D  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ethylbenzene	101	101	75 - 125	0	20		
1,1,1,2-Tetrachloroethane	103	104	80 - 130	1	20		
1,1,2,2-Tetrachloroethane	99	98	65 - 130	1	20		
m-Xylene & p-Xylene	99	101	75 - 130	2	20		
o-Xylene	92	95	80 - 120	4	20		
Styrene	105	103	65 - 135	2	20		
Bromoform	112	108	70 - 130	3	20		
Isopropylbenzene	101	103	80 - 125	1	20		
Bromobenzene	104	104	75 - 125	0	20		
N-Propylbenzene	99	98	70 - 130	0	20		
1,2,3-Trichloropropane	90	86	75 - 125	4	20		
2-Chlorotoluene	98	101	75 - 125	4	20		
1,3,5-Trimethylbenzene	102	105	75 - 130	3	20		
4-Chlorotoluene	104	102	75 - 130	1	20		
tert-Butylbenzene	102	94	70 - 130	8	20		
1,2,4-Trimethylbenzene	100	100	75 - 130	0	20		
sec-Butylbenzene	101	103	70 - 125	2	20		
1,3-Dichlorobenzene	95	99	75 - 125	4	20		
4-Isopropyltoluene	98	101	75 - 130	3	20		
1,4-Dichlorobenzene	103	103	75 - 125	0	20		
n-Butylbenzene	97	103	70 - 135	6	20		
1,2-Dichlorobenzene	96	99	70 - 120	3	20		
1,2-Dibromo-3-Chloropropane	91	88	50 - 130	3	20		
1,2,4-Trichlorobenzene	103	100	65 - 135	3	20		
1,2,3-Trichlorobenzene	100	103	55 - 140	3	20		
Hexachlorobutadiene	101	111	50 - 140	10	20		
Naphthalene	102	103	55 - 140	1	20		
Surrogate	LCS % Rec		LCSD % Rec	Acceptance Limits			
Fluorobenzene (Surr)	92		90	80 - 120			
Toluene-d8 (Surr)	96		96	80 - 120			
Ethylbenzene-d10	97		97	80 - 120			

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene (Surr)	96	94	80 - 120
Trifluorotoluene (Surr)	100	104	80 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Method Blank - Batch: 580-11292

Method: 8270C

Preparation: 3510C

Lab Sample ID: MB 580-11292/1-A

Analysis Batch: 580-11421

Instrument ID: SEA040

Client Matrix: Water

Prep Batch: 580-11292

Lab File ID: ak006307.D

Dilution: 1.0

Units: ug/L

Initial Weight/Volume: 1000 mL

Date Analyzed: 09/28/2006 1714

Final Weight/Volume: 10 mL

Date Prepared: 09/28/2006 0759

Injection Volume:

Analyte	Result	Qual	MDL	RL
Phenol	ND		0.074	3.0
Bis(2-chloroethyl)ether	ND		0.18	2.0
2-Chlorophenol	ND		0.22	2.0
1,3-Dichlorobenzene	ND		0.11	2.0
1,4-Dichlorobenzene	ND		0.12	2.0
Benzyl alcohol	ND		0.13	2.0
1,2-Dichlorobenzene	ND		0.11	2.0
2-Methylphenol	ND		0.38	2.0
Bis(2-chloroisopropyl) ether	ND		0.088	2.0
3 & 4 Methylphenol	ND		0.17	4.0
N-Nitrosodi-n-propylamine	ND		0.20	2.0
Hexachloroethane	ND		0.13	3.0
Nitrobenzene	ND		0.075	2.0
Isophorone	ND		0.11	2.0
2-Nitrophenol	ND		0.21	2.0
2,4-Dimethylphenol	ND		0.18	10
Benzoic acid	ND		0.21	10
Bis(2-chloroethoxy)methane	ND		0.095	2.0
2,4-Dichlorophenol	ND		0.13	2.0
1,2,4-Trichlorobenzene	ND		0.10	2.0
Naphthalene	ND		0.014	2.0
4-Chloroaniline	ND		0.19	2.0
Hexachlorobutadiene	ND		0.16	3.0
4-Chloro-3-methylphenol	ND		0.14	2.0
2-Methylnaphthalene	ND		0.055	1.0
Hexachlorocyclopentadiene	ND		0.12	10
2,4,6-Trichlorophenol	ND		0.10	3.0
2,4,5-Trichlorophenol	ND		0.085	2.0
2-Chloronaphthalene	ND		0.030	0.30
2-Nitroaniline	ND		0.11	2.0
Dimethyl phthalate	ND		0.12	2.0
Acenaphthylene	ND		0.026	0.40
2,6-Dinitrotoluene	ND		0.14	2.0
3-Nitroaniline	ND		0.56	2.0
Acenaphthene	ND		0.012	0.50
2,4-Dinitrophenol	ND		0.58	25
4-Nitrophenol	ND		1.6	10
Dibenzofuran	ND		0.098	2.0
2,4-Dinitrotoluene	ND		0.12	2.0
Diethyl phthalate	ND		0.093	2.0
4-Chlorophenyl phenyl ether	ND		0.12	2.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11292**

**Method: 8270C  
Preparation: 3510C**

Lab Sample ID: MB 580-11292/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Date Analyzed: 09/28/2006 1714  
 Date Prepared: 09/28/2006 0759

Analysis Batch: 580-11421  
 Prep Batch: 580-11292  
 Units: ug/L

Instrument ID: SEA040  
 Lab File ID: ak006307.D  
 Initial Weight/Volume: 1000 mL  
 Final Weight/Volume: 10 mL  
 Injection Volume:

Analyte	Result	Qual	MDL	RL
Fluorene	ND		0.042	0.30
4-Nitroaniline	ND		0.18	3.0
4,6-Dinitro-2-methylphenol	ND		0.53	20
N-Nitrosodiphenylamine	ND		0.13	2.0
4-Bromophenyl phenyl ether	ND		0.10	2.0
Hexachlorobenzene	ND		0.082	2.0
Pentachlorophenol	ND		0.13	3.5
Phenanthrene	ND		0.024	0.40
Anthracene	ND		0.019	0.20
Di-n-butyl phthalate	0.58	J	0.088	2.0
Fluoranthene	ND		0.027	0.25
Pyrene	ND		0.020	0.30
Butyl benzyl phthalate	ND		0.24	3.0
3,3'-Dichlorobenzidine	ND		1.6	10
Benzo[a]anthracene	ND		0.033	0.30
Chrysene	ND		0.045	0.20
Bis(2-ethylhexyl) phthalate	ND		0.32	15
Di-n-octyl phthalate	ND		0.18	2.0
Benzofluoranthene	ND		0.055	0.40
Benzo[a]pyrene	ND		0.027	0.20
Indeno[1,2,3-cd]pyrene	ND		0.051	0.30
Dibenz(a,h)anthracene	ND		0.046	0.30
Benzo[g,h,i]perylene	ND		0.060	0.30
Carbazole	ND		0.090	2.0
1-Methylnaphthalene	ND		0.052	0.30

Surrogate	% Rec	Acceptance Limits
2-Fluorophenol	54	10 - 120
Phenol-d5	31	10 - 102
Nitrobenzene-d5	114	34 - 146
2-Fluorobiphenyl	112	35 - 143
2,4,6-Tribromophenol	106	29 - 151
Terphenyl-d14	123	35 - 166

Calculations are performed before rounding to avoid round-off errors in calculated results.



## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11292**

**Method: 8270C  
Preparation: 3510C**

LCS Lab Sample ID: LCS 580-11292/2-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1738  
Date Prepared: 09/28/2006 0759

Analysis Batch: 580-11421  
Prep Batch: 580-11292  
Units: ug/L

Instrument ID: SEA040  
Lab File ID: ak006308.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:

LCSD Lab Sample ID: LCSD 580-11292/3-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1803  
Date Prepared: 09/28/2006 0759

Analysis Batch: 580-11421  
Prep Batch: 580-11292  
Units: ug/L

Instrument ID: SEA040  
Lab File ID: ak006309.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Phenol	28	32	10 - 70	11	51	J	
Bis(2-chloroethyl)ether	102	105	53 - 128	3	50		
2-Chlorophenol	96	96	52 - 122	0	25		
1,3-Dichlorobenzene	103	104	58 - 129	0	50		
1,4-Dichlorobenzene	105	106	62 - 132	1	32		
Benzyl alcohol	63	65	20 - 100	3	50		
1,2-Dichlorobenzene	106	104	60 - 126	2	50		
2-Methylphenol	78	81	35 - 106	4	50		
Bis(2-chloroisopropyl) ether	102	102	50 - 135	0	50		
3 & 4 Methylphenol	68	72	21 - 102	6	50		
N-Nitrosodi-n-propylamine	104	103	47 - 142	1	48		
Hexachloroethane	103	103	60 - 125	0	50		
Nitrobenzene	105	105	66 - 131	1	50		
Isophorone	108	106	62 - 122	2	50		
2-Nitrophenol	88	91	55 - 131	3	50		
2,4-Dimethylphenol	100	102	47 - 127	2	50	J	
Benzoic acid	15	22	0 - 35	37	50	J	
Bis(2-chloroethoxy)methane	106	104	65 - 126	2	50		
2,4-Dichlorophenol	107	105	66 - 122	2	50		
1,2,4-Trichlorobenzene	106	105	59 - 130	1	28		
Naphthalene	104	104	66 - 127	0	32		
4-Chloroaniline	110	111	75 - 171	1	50		
Hexachlorobutadiene	108	104	54 - 135	4	50		
4-Chloro-3-methylphenol	102	103	56 - 121	1	33		
2-Methylnaphthalene	107	107	64 - 125	0	30		
Hexachlorocyclopentadiene	68	71	45 - 126	5	50	J	J
2,4,6-Trichlorophenol	110	114	62 - 127	3	50		
2,4,5-Trichlorophenol	111	115	64 - 124	3	50		
2-Chloronaphthalene	104	104	70 - 125	0	50		
2-Nitroaniline	111	112	65 - 130	1	50		
Dimethyl phthalate	105	106	47 - 147	1	50		
Acenaphthylene	108	109	71 - 126	1	45		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11292**

**Method: 8270C  
Preparation: 3510C**

LCS Lab Sample ID: LCS 580-11292/2-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1738  
Date Prepared: 09/28/2006 0759

Analysis Batch: 580-11421  
Prep Batch: 580-11292  
Units: ug/L

Instrument ID: SEA040  
Lab File ID: ak006308.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:

LCSD Lab Sample ID: LCSD 580-11292/3-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1803  
Date Prepared: 09/28/2006 0759

Analysis Batch: 580-11421  
Prep Batch: 580-11292  
Units: ug/L

Instrument ID: SEA040  
Lab File ID: ak006309.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
2,6-Dinitrotoluene	102	104	66 - 131	2	50		
3-Nitroaniline	139	145	90 - 176	4	50		
Acenaphthene	105	105	65 - 130	1	27		
2,4-Dinitrophenol	63	71	15 - 140	12	50	J	J
4-Nitrophenol	26	36	10 - 135	30	59	J	J
Dibenzofuran	105	106	71 - 121	1	50		
2,4-Dinitrotoluene	102	104	57 - 128	3	35		
Diethyl phthalate	106	108	54 - 135	2	50		
4-Chlorophenyl phenyl ether	106	106	66 - 127	0	50		
Fluorene	107	107	69 - 129	0	29		
4-Nitroaniline	124	135	58 - 143	8	50		
4,6-Dinitro-2-methylphenol	46	56	36 - 127	19	50	J	J
N-Nitrosodiphenylamine	108	109	90 - 150	1	33		
4-Bromophenyl phenyl ether	106	106	66 - 131	1	50		
Hexachlorobenzene	104	99	67 - 128	5	50		
Pentachlorophenol	101	105	43 - 118	3	67		
Phenanthrene	104	103	62 - 128	1	24		
Anthracene	111	109	73 - 128	2	28		
Di-n-butyl phthalate	112	108	72 - 132	3	50		
Fluoranthene	111	110	64 - 124	1	22		
Pyrene	112	112	58 - 140	1	38		
Butyl benzyl phthalate	123	117	70 - 141	5	50		
3,3'-Dichlorobenzidine	141	141	67 - 157	0	50		
Benzo[a]anthracene	106	106	70 - 126	0	29		
Chrysene	105	105	70 - 126	0	33		
Bis(2-ethylhexyl) phthalate	123	118	69 - 154	4	50	J	J
Di-n-octyl phthalate	120	116	49 - 149	3	50		
Benzofluoranthene	108	110	59 - 140	1	41		
Benzo[a]pyrene	104	106	72 - 128	2	27		
Indeno[1,2,3-cd]pyrene	107	111	58 - 139	3	34		
Dibenz(a,h)anthracene	106	109	61 - 146	3	42		
Benzo[g,h,i]perylene	106	108	59 - 144	2	32		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11292**

**Method: 8270C  
Preparation: 3510C**

LCS Lab Sample ID: LCS 580-11292/2-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1738  
Date Prepared: 09/28/2006 0759

Analysis Batch: 580-11421  
Prep Batch: 580-11292  
Units: ug/L

Instrument ID: SEA040  
Lab File ID: ak006308.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:

LCSD Lab Sample ID: LCSD 580-11292/3-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1803  
Date Prepared: 09/28/2006 0759

Analysis Batch: 580-11421  
Prep Batch: 580-11292  
Units: ug/L

Instrument ID: SEA040  
Lab File ID: ak006309.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Carbazole	128	127	90 - 155	1	50		
1-Methylnaphthalene	106	105	47 - 148	1	50		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
2-Fluorophenol	52		57		10 - 120		
Phenol-d5	29		32		10 - 102		
Nitrobenzene-d5	112		109		34 - 146		
2-Fluorobiphenyl	109		109		35 - 143		
2,4,6-Tribromophenol	112		110		29 - 151		
Terphenyl-d14	119		117		35 - 166		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Method Blank - Batch: 580-11299

Lab Sample ID: MB 580-11299/1-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 2050  
Date Prepared: 09/28/2006 0838

Analysis Batch: 580-11408  
Prep Batch: 580-11299  
Units: ug/L

### Method: 8270C Preparation: 3510C

Instrument ID: SEA023  
Lab File ID: HP02370.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	Result	Qual	MDL	RL
Benzo[a]anthracene	0.035	J	0.0090	0.10
Chrysene	ND		0.0090	0.10
Benzo[fluoranthene	0.077	J	0.031	0.20
Benzo[a]pyrene	ND		0.060	0.20
Indeno[1,2,3-cd]pyrene	0.027	J	0.015	0.10
Dibenz(a,h)anthracene	0.053	J	0.012	0.10
Benzo[g,h,i]perylene	0.041	J	0.018	0.10
Benzo[b]fluoranthene	0.043	J	0.023	0.10
Benzo[k]fluoranthene	0.038	J	0.011	0.10
Surrogate	% Rec		Acceptance Limits	
Nitrobenzene-d5	132		34 - 146	
2-Fluorobiphenyl	110		35 - 143	
Terphenyl-d14	100		35 - 166	

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11299**

**Method: 8270C  
Preparation: 3510C**

LCS Lab Sample ID: LCS 580-11299/2-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 2117  
Date Prepared: 09/28/2006 0838

Analysis Batch: 580-11408  
Prep Batch: 580-11299  
Units: ug/L

Instrument ID: SEA023  
Lab File ID: HP02371.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:

LCSD Lab Sample ID: LCSD 580-11299/3-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 2145  
Date Prepared: 09/28/2006 0838

Analysis Batch: 580-11408  
Prep Batch: 580-11299  
Units: ug/L

Instrument ID: SEA023  
Lab File ID: HP02372.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzo[a]anthracene	107	104	70 - 126	2	29		
Chrysene	100	101	70 - 126	0	33		
Benzo[fluoranthene	100	99	59 - 140	0	41		
Benzo[a]pyrene	100	99	72 - 128	1	27		
Indeno[1,2,3-cd]pyrene	93	91	58 - 139	2	34		
Dibenz(a,h)anthracene	90	88	61 - 146	2	42		
Benzo[g,h,i]perylene	88	86	59 - 144	1	32		
Benzo[b]fluoranthene	101	100	64 - 140	1	41		
Benzo[k]fluoranthene	98	99	62 - 142	0	41		
Surrogate	LCS % Rec		LCSD % Rec	Acceptance Limits			
Nitrobenzene-d5	134		130	34 - 146			
2-Fluorobiphenyl	106		106	35 - 143			
Terphenyl-d14	94		92	35 - 166			

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11301**

**Method: 8270C**

**Preparation: 3550B**

Lab Sample ID: MB 580-11301/1-A  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 09/28/2006 2243  
 Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
 Prep Batch: 580-11301  
 Units: ug/Kg

Instrument ID: SEA040  
 Lab File ID: ak006321.D  
 Initial Weight/Volume: 10 g  
 Final Weight/Volume: 10 mL  
 Injection Volume:

Analyte	Result	Qual	MDL	RL
Phenol	ND		27	100
Bis(2-chloroethyl)ether	ND		30	100
2-Chlorophenol	ND		23	100
1,3-Dichlorobenzene	ND		12	50
1,4-Dichlorobenzene	ND		7.6	50
Benzyl alcohol	ND		30	100
1,2-Dichlorobenzene	ND		17	50
2-Methylphenol	ND		28	100
Bis(2-chloroisopropyl) ether	ND		34	150
3 & 4 Methylphenol	ND		53	200
N-Nitrosodi-n-propylamine	ND		26	100
Hexachloroethane	ND		21	100
Nitrobenzene	ND		15	100
Isophorone	ND		26	100
2-Nitrophenol	ND		23	100
2,4-Dimethylphenol	ND		19	100
Benzoic acid	ND		830	2500
Bis(2-chloroethoxy)methane	ND		25	100
2,4-Dichlorophenol	ND		19	100
1,2,4-Trichlorobenzene	ND		9.9	50
Naphthalene	ND		5.7	20
4-Chloroaniline	ND		27	100
Hexachlorobutadiene	ND		13	50
4-Chloro-3-methylphenol	ND		22	100
2-Methylnaphthalene	ND		3.1	20
Hexachlorocyclopentadiene	ND		25	100
2,4,6-Trichlorophenol	ND		33	150
2,4,5-Trichlorophenol	ND		23	100
2-Chloronaphthalene	ND		1.9	20
2-Nitroaniline	ND		19	100
Dimethyl phthalate	ND		7.7	100
Acenaphthylene	ND		2.3	20
2,6-Dinitrotoluene	ND		19	100
3-Nitroaniline	ND		29	100
Acenaphthene	ND		5.7	20
2,4-Dinitrophenol	ND		210	1000
4-Nitrophenol	ND		260	1000
Dibenzofuran	ND		17	100
2,4-Dinitrotoluene	ND		14	100
Diethyl phthalate	ND		7.2	100
4-Chlorophenyl phenyl ether	ND		16	100

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11301**

**Method: 8270C**  
**Preparation: 3550B**

Lab Sample ID: MB 580-11301/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 2243  
Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
Prep Batch: 580-11301  
Units: ug/Kg

Instrument ID: SEA040  
Lab File ID: ak006321.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	Result	Qual	MDL	RL
Fluorene	ND		2.6	20
4-Nitroaniline	ND		19	100
4,6-Dinitro-2-methylphenol	ND		270	1000
N-Nitrosodiphenylamine	ND		15	50
4-Bromophenyl phenyl ether	ND		10	100
Hexachlorobenzene	ND		11	50
Pentachlorophenol	ND		31	100
Phenanthrene	ND		4.0	20
Anthracene	ND		4.3	20
Di-n-butyl phthalate	37	J	13	200
Fluoranthene	ND		3.1	20
Pyrene	ND		2.7	20
Butyl benzyl phthalate	ND		29	100
3,3'-Dichlorobenzidine	ND		9.1	200
Benzo[a]anthracene	ND		6.5	25
Chrysene	ND		7.5	25
Bis(2-ethylhexyl) phthalate	ND		240	1500
Di-n-octyl phthalate	ND		33	200
Benzofluoranthene	ND		10	40
Benzo[a]pyrene	16	J	8.5	30
Indeno[1,2,3-cd]pyrene	ND		12	40
Dibenz(a,h)anthracene	ND		12	40
Benzo[g,h,i]perylene	ND		7.3	25
Carbazole	ND		33	150
1-Methylnaphthalene	ND		8.7	30
Surrogate	% Rec	Acceptance Limits		
2-Fluorophenol	110	36 - 145		
Phenol-d5	109	38 - 149		
Nitrobenzene-d5	106	38 - 141		
2-Fluorobiphenyl	108	42 - 140		
2,4,6-Tribromophenol	100	28 - 143		
Terphenyl-d14	115	42 - 151		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11301**

**Method: 8270C  
Preparation: 3550B**

LCS Lab Sample ID: LCS 580-11301/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 2308  
Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
Prep Batch: 580-11301  
Units: ug/Kg

Instrument ID: SEA040  
Lab File ID: ak006322.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

LCSD Lab Sample ID: LCSD 580-11301/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 2333  
Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
Prep Batch: 580-11301  
Units: ug/Kg

Instrument ID: SEA040  
Lab File ID: ak006323.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Phenol	101	102	66 - 126	1	26		
Bis(2-chloroethyl)ether	103	106	57 - 122	3	60		
2-Chlorophenol	103	105	65 - 125	1	27		
1,3-Dichlorobenzene	103	105	64 - 124	2	60		
1,4-Dichlorobenzene	102	106	62 - 132	3	32		
Benzyl alcohol	100	99	42 - 147	1	60		
1,2-Dichlorobenzene	105	106	68 - 118	1	60		
2-Methylphenol	105	105	56 - 121	0	25		
Bis(2-chloroisopropyl) ether	97	99	44 - 140	2	60		
3 & 4 Methylphenol	104	106	61 - 126	1	27		
N-Nitrosodi-n-propylamine	100	96	52 - 127	3	28		
Hexachloroethane	107	106	56 - 131	1	60		
Nitrobenzene	102	103	59 - 134	1	60		
Isophorone	105	103	53 - 118	2	60		
2-Nitrophenol	92	91	58 - 128	1	60		
2,4-Dimethylphenol	106	105	58 - 133	1	60		
Benzoic acid	76	88	10 - 130	14	60		
Bis(2-chloroethoxy)methane	104	103	63 - 128	1	60		
2,4-Dichlorophenol	108	108	59 - 124	0	60		
1,2,4-Trichlorobenzene	105	105	63 - 128	0	28		
Naphthalene	103	103	64 - 129	0	26		
4-Chloroaniline	94	93	20 - 181	0	60		
Hexachlorobutadiene	104	106	59 - 134	2	60		
4-Chloro-3-methylphenol	107	106	58 - 128	1	27		
2-Methylnaphthalene	104	103	65 - 125	1	27		
Hexachlorocyclopentadiene	90	87	30 - 132	3	60		
2,4,6-Trichlorophenol	111	111	66 - 131	1	60		
2,4,5-Trichlorophenol	111	112	64 - 124	1	60		
2-Chloronaphthalene	103	103	69 - 129	0	25		
2-Nitroaniline	107	106	58 - 133	1	60		
Dimethyl phthalate	104	106	65 - 125	1	60		
Acenaphthylene	105	105	69 - 129	0	28		

Calculations are performed before rounding to avoid round-off errors in calculated results.



## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11301**

**Method: 8270C  
Preparation: 3550B**

LCS Lab Sample ID: LCS 580-11301/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 2308  
Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
Prep Batch: 580-11301  
Units: ug/Kg

Instrument ID: SEA040  
Lab File ID: ak006322.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

LCSD Lab Sample ID: LCSD 580-11301/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 2333  
Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
Prep Batch: 580-11301  
Units: ug/Kg

Instrument ID: SEA040  
Lab File ID: ak006323.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
2,6-Dinitrotoluene	100	99	65 - 125	1	60		
3-Nitroaniline	122	129	80 - 165	6	60		
Acenaphthene	104	105	65 - 130	1	27		
2,4-Dinitrophenol	73	75	53 - 168	3	60	J	J
4-Nitrophenol	96	94	47 - 172	2	33	J	J
Dibenzofuran	104	105	70 - 125	0	60		
2,4-Dinitrotoluene	104	103	57 - 122	1	31		
Diethyl phthalate	102	103	64 - 129	1	26		
4-Chlorophenyl phenyl ether	105	104	65 - 130	1	60		
Fluorene	104	103	68 - 128	1	31		
4-Nitroaniline	131	126	70 - 150	4	60		
4,6-Dinitro-2-methylphenol	60	60	38 - 143	0	60	J	J
N-Nitrosodiphenylamine	108	108	88 - 153	0	60		
4-Bromophenyl phenyl ether	104	107	64 - 134	2	60		
Hexachlorobenzene	104	104	61 - 136	1	60		
Pentachlorophenol	101	102	29 - 124	1	68		
Phenanthrene	104	104	65 - 125	1	28		
Anthracene	107	109	73 - 123	2	27		
Di-n-butyl phthalate	101	103	69 - 124	2	60		
Fluoranthene	109	110	61 - 121	1	36		
Pyrene	111	111	54 - 134	0	31		
Butyl benzyl phthalate	106	108	65 - 140	1	60		
3,3'-Dichlorobenzidine	125	125	73 - 163	0	60		
Benzo[a]anthracene	106	105	64 - 124	2	27		
Chrysene	104	106	71 - 126	2	26		
Bis(2-ethylhexyl) phthalate	107	108	64 - 144	1	60	J	J
Di-n-octyl phthalate	95	98	58 - 148	3	31		
Benzofluoranthene	108	111	57 - 137	3	31		
Benzo[a]pyrene	100	103	68 - 128	3	30		
Indeno[1,2,3-cd]pyrene	99	98	59 - 139	0	29		
Dibenz(a,h)anthracene	98	98	57 - 142	0	30		
Benzo[g,h,i]perylene	98	97	57 - 142	1	28		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11301**

**Method: 8270C  
Preparation: 3550B**

LCS Lab Sample ID: LCS 580-11301/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 2308  
Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
Prep Batch: 580-11301  
Units: ug/Kg

Instrument ID: SEA040  
Lab File ID: ak006322.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

LCSD Lab Sample ID: LCSD 580-11301/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 2333  
Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
Prep Batch: 580-11301  
Units: ug/Kg

Instrument ID: SEA040  
Lab File ID: ak006323.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Carbazole	111	110	88 - 158	1	60		
1-Methylnaphthalene	104	104	48 - 148	0	30		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
2-Fluorophenol	98		101		36 - 145		
Phenol-d5	100		100		38 - 149		
Nitrobenzene-d5	100		98		38 - 141		
2-Fluorobiphenyl	101		101		42 - 140		
2,4,6-Tribromophenol	103		98		28 - 143		
Terphenyl-d14	107		109		42 - 151		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-11301**

**Method: 8270C  
Preparation: 3550B**

MS Lab Sample ID: 580-3718-8  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 0223  
Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
Prep Batch: 580-11301

Instrument ID: SEA040  
Lab File ID: ak006330.D  
Initial Weight/Volume: 10.4909 g  
Final Weight/Volume: 10 mL  
Injection Volume:

MSD Lab Sample ID: 580-3718-8  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 0247  
Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
Prep Batch: 580-11301

Instrument ID: SEA040  
Lab File ID: ak006331.D  
Initial Weight/Volume: 10.5194 g  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Phenol	108	104	66 - 126	4	26		
Bis(2-chloroethyl)ether	106	103	57 - 122	3	60		
2-Chlorophenol	111	107	65 - 125	4	27		
1,3-Dichlorobenzene	108	103	64 - 124	6	60		
1,4-Dichlorobenzene	109	104	62 - 132	5	32		
Benzyl alcohol	113	107	42 - 147	6	60		
1,2-Dichlorobenzene	108	105	68 - 118	3	60		
2-Methylphenol	113	108	56 - 121	5	25		
Bis(2-chloroisopropyl) ether	107	101	44 - 140	6	60		
3 & 4 Methylphenol	116	112	61 - 126	3	27		
N-Nitrosodi-n-propylamine	109	110	52 - 127	1	28		
Hexachloroethane	105	103	56 - 131	3	60		
Nitrobenzene	104	102	59 - 134	2	60		
Isophorone	110	106	53 - 118	5	60		
2-Nitrophenol	94	91	58 - 128	4	60		
2,4-Dimethylphenol	111	106	58 - 133	5	60		
Benzoic acid	83	80	10 - 130	3	60		
Bis(2-chloroethoxy)methane	106	102	63 - 128	4	60		
2,4-Dichlorophenol	114	108	59 - 124	5	60		
1,2,4-Trichlorobenzene	105	102	63 - 128	4	28		
Naphthalene	106	101	64 - 129	5	26		
4-Chloroaniline	91	90	20 - 181	1	60		
Hexachlorobutadiene	106	102	59 - 134	5	60		
4-Chloro-3-methylphenol	115	111	58 - 128	3	27		
2-Methylnaphthalene	108	105	65 - 125	3	27		
Hexachlorocyclopentadiene	54	58	30 - 132	7	60		
2,4,6-Trichlorophenol	119	113	66 - 131	5	60		
2,4,5-Trichlorophenol	115	117	64 - 124	2	60		
2-Chloronaphthalene	103	102	69 - 129	2	25		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-11301**

**Method: 8270C  
Preparation: 3550B**

MS Lab Sample ID: 580-3718-8  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 0223  
Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
Prep Batch: 580-11301

Instrument ID: SEA040  
Lab File ID: ak006330.D  
Initial Weight/Volume: 10.4909 g  
Final Weight/Volume: 10 mL  
Injection Volume:

MSD Lab Sample ID: 580-3718-8  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 0247  
Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
Prep Batch: 580-11301

Instrument ID: SEA040  
Lab File ID: ak006331.D  
Initial Weight/Volume: 10.5194 g  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
2-Nitroaniline	112	113	58 - 133	1	60		
Dimethyl phthalate	106	104	65 - 125	2	60		
Acenaphthylene	108	107	69 - 129	2	28		
2,6-Dinitrotoluene	100	99	65 - 125	1	60		
3-Nitroaniline	140	134	80 - 165	5	60		
Acenaphthene	105	103	65 - 130	2	27		
2,4-Dinitrophenol	67	69	53 - 168	2	60	J	J
4-Nitrophenol	99	98	47 - 172	1	33	J	J
Dibenzofuran	105	104	70 - 125	1	60		
2,4-Dinitrotoluene	101	101	57 - 122	1	31		
Diethyl phthalate	107	105	64 - 129	2	26		
4-Chlorophenyl phenyl ether	106	105	65 - 130	2	60		
Fluorene	107	106	68 - 128	1	31		
4-Nitroaniline	138	139	70 - 150	0	60		
4,6-Dinitro-2-methylphenol	44	46	38 - 143	6	60	J	J
N-Nitrosodiphenylamine	110	107	88 - 153	4	60		
4-Bromophenyl phenyl ether	107	104	64 - 134	3	60		
Hexachlorobenzene	104	101	61 - 136	2	60		
Pentachlorophenol	119	111	29 - 124	8	68		
Phenanthrene	105	101	65 - 125	4	28		
Anthracene	111	108	73 - 123	3	27		
Di-n-butyl phthalate	105	100	69 - 124	5	60		
Fluoranthene	114	110	61 - 121	4	36		
Pyrene	114	109	54 - 134	5	31		
Butyl benzyl phthalate	124	120	65 - 140	3	60		
3,3'-Dichlorobenzidine	142	137	73 - 163	4	60		
Benzo[a]anthracene	110	107	64 - 124	3	27		
Chrysene	106	105	71 - 126	1	26		
Bis(2-ethylhexyl) phthalate	133	124	64 - 144	8	60	J	J

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-11301**

**Method: 8270C  
Preparation: 3550B**

MS Lab Sample ID: 580-3718-8  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 0223  
Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
Prep Batch: 580-11301

Instrument ID: SEA040  
Lab File ID: ak006330.D  
Initial Weight/Volume: 10.4909 g  
Final Weight/Volume: 10 mL  
Injection Volume:

MSD Lab Sample ID: 580-3718-8  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 0247  
Date Prepared: 09/28/2006 0847

Analysis Batch: 580-11394  
Prep Batch: 580-11301

Instrument ID: SEA040  
Lab File ID: ak006331.D  
Initial Weight/Volume: 10.5194 g  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Di-n-octyl phthalate	127	122	58 - 148	4	31		
Benzofluoranthene	109	109	57 - 137	0	31		
Benzo[a]pyrene	105	103	68 - 128	2	30		
Indeno[1,2,3-cd]pyrene	111	103	59 - 139	8	29		
Dibenz(a,h)anthracene	110	103	57 - 142	6	30		
Benzo[g,h,i]perylene	106	99	57 - 142	7	28		
Carbazole	123	118	88 - 158	4	60		
1-Methylnaphthalene	107	104	48 - 148	3	30		
Surrogate	MS % Rec		MSD % Rec		Acceptance Limits		
2-Fluorophenol	108		105		36 - 145		
Phenol-d5	108		103		38 - 149		
Nitrobenzene-d5	103		98		38 - 141		
2-Fluorobiphenyl	98		97		42 - 140		
2,4,6-Tribromophenol	110		106		28 - 143		
Terphenyl-d14	113		106		42 - 151		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

### Method Blank - Batch: 580-11302

Lab Sample ID: MB 580-11302/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 0325  
Date Prepared: 09/28/2006 0900

Analysis Batch: 580-11419  
Prep Batch: 580-11302  
Units: ug/Kg

### Method: 8270C Preparation: 3550B

Instrument ID: SEA023  
Lab File ID: HP02385.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	Result	Qual	MDL	RL
Benzo[a]anthracene	ND		1.7	5.0
Chrysene	ND		0.40	5.0
Benzo[fluoranthene	4.3	J	0.63	10
Benzo[a]pyrene	2.2	J	0.40	5.0
Indeno[1,2,3-cd]pyrene	0.71	J	0.25	5.0
Dibenz(a,h)anthracene	2.1	J	0.22	5.0
Benzo[g,h,i]perylene	2.3	J	0.24	5.0
Benzo[b]fluoranthene	2.4	J	0.25	5.0
Benzo[k]fluoranthene	2.2	J	0.28	5.0
Surrogate	% Rec		Acceptance Limits	
Nitrobenzene-d5	133		38 - 141	
2-Fluorobiphenyl	119		42 - 140	
Terphenyl-d14	103		42 - 151	

Calculations are performed before rounding to avoid round-off errors in calculated results.

# Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

## Method Blank - Batch: 580-11302

Lab Sample ID: MB 580-11302/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 0326  
Date Prepared: 09/28/2006 0900

Analysis Batch: 580-11419  
Prep Batch: 580-11302  
Units: ug/Kg

## Method: 8270C Preparation: 3550B

Instrument ID: SEA023  
Lab File ID: HP02385.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	Result	Qual	MDL	RL
Benzo[a]anthracene	ND		1.7	5.0
Chrysene	ND		0.40	5.0
Benzo[fluoranthene	4.3	J	0.63	10
Benzo[a]pyrene	2.3	J	0.40	5.0
Indeno[1,2,3-cd]pyrene	1.6	J	0.25	5.0
Dibenz(a,h)anthracene	2.9	J	0.22	5.0
Benzo[g,h,i]perylene	0.85	J	0.24	5.0
Benzo[b]fluoranthene	2.5	J	0.25	5.0
Benzo[k]fluoranthene	1.9	J	0.28	5.0
Surrogate	% Rec		Acceptance Limits	
Nitrobenzene-d5	133		38 - 141	
2-Fluorobiphenyl	116		42 - 140	
Terphenyl-d14	112		42 - 151	

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11302**

**Method: 8270C  
Preparation: 3550B**

LCS Lab Sample ID: LCS 580-11302/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 0352  
Date Prepared: 09/28/2006 0900

Analysis Batch: 580-11419  
Prep Batch: 580-11302  
Units: ug/Kg

Instrument ID: SEA023  
Lab File ID: HP02386.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

LCSD Lab Sample ID: LCSD 580-11302/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 0419  
Date Prepared: 09/28/2006 0900

Analysis Batch: 580-11419  
Prep Batch: 580-11302  
Units: ug/Kg

Instrument ID: SEA023  
Lab File ID: HP02387.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzo[a]anthracene	97	101	64 - 124	4	27		
Chrysene	99	99	71 - 126	0	26		
Benzofluoranthene	98	102	57 - 137	4	31		
Benzo[a]pyrene	92	94	68 - 128	3	30		
Indeno[1,2,3-cd]pyrene	77	73	59 - 139	6	29		
Dibenz(a,h)anthracene	81	80	57 - 142	1	30		
Benzo[g,h,i]perylene	81	74	57 - 142	8	28		
Benzo[b]fluoranthene	95	100	66 - 136	5	31		
Benzo[k]fluoranthene	101	103	63 - 143	3	31		
Surrogate	LCS % Rec		LCSD % Rec	Acceptance Limits			
Nitrobenzene-d5	120		121	38 - 141			
2-Fluorobiphenyl	102		100	42 - 140			
Terphenyl-d14	96		99	42 - 151			

Calculations are performed before rounding to avoid round-off errors in calculated results.



## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-11302**

**Method: 8270C  
Preparation: 3550B**

MS Lab Sample ID: 580-3718-8  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 0731  
Date Prepared: 09/28/2006 0900

Analysis Batch: 580-11419  
Prep Batch: 580-11302

Instrument ID: SEA023  
Lab File ID: HP02394.D  
Initial Weight/Volume: 10.4909 g  
Final Weight/Volume: 10 mL  
Injection Volume:

MSD Lab Sample ID: 580-3718-8  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 0758  
Date Prepared: 09/28/2006 0900

Analysis Batch: 580-11419  
Prep Batch: 580-11302

Instrument ID: SEA023  
Lab File ID: HP02395.D  
Initial Weight/Volume: 10.5194 g  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Benzo[a]anthracene	103	105	64 - 124	2	27		
Chrysene	100	102	71 - 126	1	26		
Benzofluoranthene	96	103	57 - 137	7	31	B	B
Benzo[a]pyrene	95	103	68 - 128	7	30	B	B
Indeno[1,2,3-cd]pyrene	102	89	59 - 139	14	29	B	B
Dibenz(a,h)anthracene	99	89	57 - 142	12	30	B	B
Benzo[g,h,i]perylene	102	71	57 - 142	36	28	B	B F
Benzo[b]fluoranthene	96	105	66 - 136	8	31	B	B
Benzo[k]fluoranthene	95	102	63 - 143	6	31	B	B
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
Nitrobenzene-d5	121		123	38 - 141			
2-Fluorobiphenyl	101		96	42 - 140			
Terphenyl-d14	99		80	42 - 151			

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11336**

**Method: NWTPH-Gx  
Preparation: 5035**

Lab Sample ID: MB 580-11336/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1524  
Date Prepared: 09/28/2006 1514

Analysis Batch: 580-11389  
Prep Batch: 580-11336  
Units: mg/Kg

Instrument ID: SEA003  
Lab File ID: CS167497.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 400 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	Result	Qual	MDL	RL
Gasoline	ND		0.26	4.0
Surrogate	% Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)	100		50 - 150	
Trifluorotoluene (Surr)	91		50 - 150	
Ethylbenzene-d10	105		50 - 150	
Fluorobenzene (Surr)	84		50 - 150	
Toluene-d8 (Surr)	105		50 - 150	

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11336**

**Method: NWTPH-Gx  
Preparation: 5035**

LCS Lab Sample ID: LCS 580-11336/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1547  
Date Prepared: 09/28/2006 1514

Analysis Batch: 580-11389  
Prep Batch: 580-11336  
Units: mg/Kg

Instrument ID: SEA003  
Lab File ID: CS167498.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 400 mL  
Injection Volume:  
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 580-11336/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1609  
Date Prepared: 09/28/2006 1514

Analysis Batch: 580-11389  
Prep Batch: 580-11336  
Units: mg/Kg

Instrument ID: SEA003  
Lab File ID: CS167499.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 400 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Gasoline	90	89	68 - 120	1	10		
Surrogate	LCS % Rec		LCSD % Rec	Acceptance Limits			
4-Bromofluorobenzene (Surr)	101		101		50 - 150		
Trifluorotoluene (Surr)	92		92		50 - 150		
Ethylbenzene-d10	105		105		50 - 150		
Fluorobenzene (Surr)	93		93		50 - 150		
Toluene-d8 (Surr)	100		100		50 - 150		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11401**

**Method: NWTPH-Gx  
Preparation: 5030B**

Lab Sample ID: MB 580-11401/1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1235  
Date Prepared: 09/28/2006 1235

Analysis Batch: 580-11401  
Prep Batch: N/A  
Units: mg/L

Instrument ID: SEA041  
Lab File ID: GX0003038.D  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	Result	Qual	MDL	RL
Gasoline	ND		0.0077	0.050

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene (Surr)	100	50 - 150
Trifluorotoluene (Surr)	95	50 - 150
Ethylbenzene-d10	102	50 - 150
Fluorobenzene (Surr)	95	50 - 150
Toluene-d8 (Surr)	103	50 - 150

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11401**

**Method: NWTPH-Gx  
Preparation: 5030B**

LCS Lab Sample ID: LCS 580-11401/2  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1343  
Date Prepared: 09/28/2006 1343

Analysis Batch: 580-11401  
Prep Batch: N/A  
Units: mg/L

Instrument ID: SEA041  
Lab File ID: GX0003041.D  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
Injection Volume:  
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 580-11401/3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1405  
Date Prepared: 09/28/2006 1405

Analysis Batch: 580-11401  
Prep Batch: N/A  
Units: mg/L

Instrument ID: SEA041  
Lab File ID: GX0003042.D  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Gasoline	93	91	79 - 110	2	8		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene (Surr)	100	104	50 - 150
Trifluorotoluene (Surr)	97	93	50 - 150
Ethylbenzene-d10	103	103	50 - 150
Fluorobenzene (Surr)	106	107	50 - 150
Toluene-d8 (Surr)	103	100	50 - 150

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11237**

**Method: 8082**  
**Preparation: 3510C**

Lab Sample ID: MB 580-11237/1-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1839  
Date Prepared: 09/27/2006 0802

Analysis Batch: 580-11379  
Prep Batch: 580-11237  
Units: ug/L

Instrument ID: SEA034  
Lab File ID: PCB3415.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	Result	Qual	MDL	RL
PCB-1016	ND		0.080	0.10
PCB-1221	ND		0.080	0.10
PCB-1232	ND		0.080	0.10
PCB-1242	ND		0.080	0.10
PCB-1248	ND		0.080	0.10
PCB-1254	ND		0.050	0.10
PCB-1260	ND		0.050	0.10

Surrogate	% Rec	Acceptance Limits
Tetrachloro-m-xylene	113	32 - 134
DCB Decachlorobiphenyl	79	55 - 128

**Method Blank - Batch: 580-11237**

**Method: 8082**  
**Preparation: 3510C**

Lab Sample ID: MB 580-11237/1-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1839  
Date Prepared: 09/27/2006 0802

Analysis Batch: 580-11379  
Prep Batch: 580-11237  
Units: ug/L

Instrument ID: SEA034  
Lab File ID: PCB3415.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: SECONDARY

Analyte	Result	Qual	MDL	RL
PCB-1016	ND		0.080	0.10
PCB-1221	ND		0.080	0.10
PCB-1232	ND		0.080	0.10
PCB-1242	ND		0.080	0.10
PCB-1248	ND		0.080	0.10
PCB-1254	ND		0.050	0.10
PCB-1260	ND		0.050	0.10

Surrogate	% Rec	Acceptance Limits
Tetrachloro-m-xylene	108	32 - 134
DCB Decachlorobiphenyl	86	55 - 128

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11237**

**Method: 8082  
Preparation: 3510C**

LCS Lab Sample ID: LCS 580-11237/2-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1903  
Date Prepared: 09/27/2006 0802

Analysis Batch: 580-11379  
Prep Batch: 580-11237  
Units: ug/L

Instrument ID: SEA034  
Lab File ID: PCB3416.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 580-11237/3-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1927  
Date Prepared: 09/27/2006 0802

Analysis Batch: 580-11379  
Prep Batch: 580-11237  
Units: ug/L

Instrument ID: SEA034  
Lab File ID: PCB3417.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
PCB-1016	115	121	44 - 127	5	27		
PCB-1260	108	116	53 - 130	7	22		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Tetrachloro-m-xylene	118		124		32 - 134		
DCB Decachlorobiphenyl	81		90		55 - 128		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11237**

**Method: 8082  
Preparation: 3510C**

LCS Lab Sample ID: LCS 580-11237/2-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1903  
Date Prepared: 09/27/2006 0802

Analysis Batch: 580-11379  
Prep Batch: 580-11237  
Units: ug/L

Instrument ID: SEA034  
Lab File ID: PCB3416.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: SECONDARY

LCSD Lab Sample ID: LCSD 580-11237/3-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1927  
Date Prepared: 09/27/2006 0802

Analysis Batch: 580-11379  
Prep Batch: 580-11237  
Units: ug/L

Instrument ID: SEA034  
Lab File ID: PCB3417.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: SECONDARY

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
PCB-1016	112	119	44 - 127	6	27		
PCB-1260	110	119	53 - 130	7	22		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Tetrachloro-m-xylene	109		116		32 - 134		
DCB Decachlorobiphenyl	88		97		55 - 128		

Calculations are performed before rounding to avoid round-off errors in calculated results.

# Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

## Method Blank - Batch: 580-11268

Lab Sample ID: MB 580-11268/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/03/2006 0539  
Date Prepared: 09/27/2006 1350

Analysis Batch: 580-11604  
Prep Batch: 580-11268  
Units: mg/Kg

## Method: 8082 Preparation: 3550B

Instrument ID: SEA034  
Lab File ID: PCB3552.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	Result	Qual	MDL	RL
PCB-1016	ND		0.0058	0.010
PCB-1221	ND		0.0058	0.010
PCB-1232	ND		0.0058	0.010
PCB-1242	ND		0.0058	0.010
PCB-1248	ND		0.0058	0.010
PCB-1254	ND		0.0015	0.010
PCB-1260	ND		0.0015	0.010

Surrogate	% Rec		Acceptance Limits
Tetrachloro-m-xylene	125	X	60 - 123
DCB Decachlorobiphenyl	128	X	65 - 126

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11268**

**Method: 8082  
Preparation: 3550B**

LCS Lab Sample ID: LCS 580-11268/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/03/2006 0603  
Date Prepared: 09/27/2006 1350

Analysis Batch: 580-11604  
Prep Batch: 580-11268  
Units: mg/Kg

Instrument ID: SEA034  
Lab File ID: PCB3553.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 580-11268/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/03/2006 0627  
Date Prepared: 09/27/2006 1350

Analysis Batch: 580-11604  
Prep Batch: 580-11268  
Units: mg/Kg

Instrument ID: SEA034  
Lab File ID: PCB3554.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
PCB-1016	145	136	57 - 128	7	8	*	*
PCB-1260	137	131	65 - 132	5	8	*	
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Tetrachloro-m-xylene	130	X	124	X	60 - 123		
DCB Decachlorobiphenyl	131	X	129	X	65 - 126		

Calculations are performed before rounding to avoid round-off errors in calculated results.



## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-11268**

**Method: 8082  
Preparation: 3550B**

MS Lab Sample ID: 580-3718-8  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/03/2006 1048  
Date Prepared: 09/27/2006 1350

Analysis Batch: 580-11604  
Prep Batch: 580-11268

Instrument ID: SEA034  
Lab File ID: PCB3565.D  
Initial Weight/Volume: 10.1025 g  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

MSD Lab Sample ID: 580-3718-8  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/03/2006 1111  
Date Prepared: 09/27/2006 1350

Analysis Batch: 580-11604  
Prep Batch: 580-11268

Instrument ID: SEA034  
Lab File ID: PCB3566.D  
Initial Weight/Volume: 10.0502 g  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
PCB-1016	140	135	57 - 128	3	8	F	F
PCB-1260	116	114	65 - 132	1	8		
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
Tetrachloro-m-xylene	120		115	60 - 123			
DCB Decachlorobiphenyl	114		112	65 - 126			

Calculations are performed before rounding to avoid round-off errors in calculated results.

# Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

## Method Blank - Batch: 580-11625

Lab Sample ID: MB 580-11625/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/05/2006 0014  
Date Prepared: 10/04/2006 1449

Analysis Batch: 580-11666  
Prep Batch: 580-11625  
Units: mg/Kg

## Method: 8082 Preparation: 3550B

Instrument ID: SEA034  
Lab File ID: PCB3654.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	Result	Qual	MDL	RL
PCB-1016	ND		0.0058	0.010
PCB-1221	ND		0.0058	0.010
PCB-1232	ND		0.0058	0.010
PCB-1242	ND		0.0058	0.010
PCB-1248	ND		0.0058	0.010
PCB-1254	ND		0.0015	0.010
PCB-1260	ND		0.0015	0.010

Surrogate	% Rec	Acceptance Limits
Tetrachloro-m-xylene	101	60 - 123
DCB Decachlorobiphenyl	103	65 - 126

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11625**

**Method: 8082  
Preparation: 3550B**

LCS Lab Sample ID: LCS 580-11625/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/05/2006 0038  
Date Prepared: 10/04/2006 1449

Analysis Batch: 580-11666  
Prep Batch: 580-11625  
Units: mg/Kg

Instrument ID: SEA034  
Lab File ID: PCB3655.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 580-11625/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/05/2006 0101  
Date Prepared: 10/04/2006 1449

Analysis Batch: 580-11666  
Prep Batch: 580-11625  
Units: mg/Kg

Instrument ID: SEA034  
Lab File ID: PCB3656.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
PCB-1016	82	83	57 - 128	1	8		
PCB-1260	86	84	65 - 132	3	8		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Tetrachloro-m-xylene	96		100		60 - 123		
DCB Decachlorobiphenyl	110		103		65 - 126		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-11625**

**Method: 8082  
Preparation: 3550B**

MS Lab Sample ID: 580-3718-4  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/05/2006 1231  
Date Prepared: 10/04/2006 1449

Analysis Batch: 580-11666  
Prep Batch: 580-11625

Instrument ID: SEA034  
Lab File ID: PCB3679.D  
Initial Weight/Volume: 10.4003 g  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

MSD Lab Sample ID: 580-3718-4  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/05/2006 1254  
Date Prepared: 10/04/2006 1449

Analysis Batch: 580-11666  
Prep Batch: 580-11625

Instrument ID: SEA034  
Lab File ID: PCB3680.D  
Initial Weight/Volume: 10.1162 g  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
PCB-1016	75	87	57 - 128	15	8		F
PCB-1260	69	77	65 - 132	30	8		F
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
Tetrachloro-m-xylene	77		97	60 - 123			
DCB Decachlorobiphenyl	74		98	65 - 126			

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11251**

**Method: NWTPH-Dx  
Preparation: 3510C**

Lab Sample ID: MB 580-11251/1-B  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1126  
Date Prepared: 09/27/2006 1049

Analysis Batch: 580-11354  
Prep Batch: 580-11251  
Units: mg/L

Instrument ID: SEA016  
Lab File ID: EP19668.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 5 mL  
Injection Volume:

Analyte	Result	Qual	MDL	RL
Motor Oil (>C24-C36)	ND		0.060	0.50
#2 Diesel (C10-C24)	ND		0.032	0.25
Surrogate	% Rec		Acceptance Limits	
o-Terphenyl	107		50 - 150	

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11251**

**Method: NWTPH-Dx  
Preparation: 3510C**

LCS Lab Sample ID: LCS 580-11251/2-B  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1148  
Date Prepared: 09/27/2006 1049

Analysis Batch: 580-11354  
Prep Batch: 580-11251  
Units: mg/L

Instrument ID: SEA016  
Lab File ID: EP19669.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 5 mL  
Injection Volume:

LCSD Lab Sample ID: LCSD 580-11251/3-B  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1214  
Date Prepared: 09/27/2006 1049

Analysis Batch: 580-11354  
Prep Batch: 580-11251  
Units: mg/L

Instrument ID: SEA016  
Lab File ID: EP19670.D  
Initial Weight/Volume: 1000 mL  
Final Weight/Volume: 5 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Motor Oil (>C24-C36)	139	129	70 - 130	7	30	*	
#2 Diesel (C10-C24)	114	107	70 - 130	7	30		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
o-Terphenyl	126		114		50 - 150		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11267**

**Method: NWTPH-Dx  
Preparation: 3550B**

Lab Sample ID: MB 580-11267/1-B  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 0955  
Date Prepared: 09/27/2006 1223

Analysis Batch: 580-11356  
Prep Batch: 580-11267  
Units: mg/Kg

Instrument ID: SEA015  
Lab File ID: PL13965.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	Result	Qual	MDL	RL
Motor Oil (>C24-C36)	ND		6.0	50
#2 Diesel (C10-C24)	ND		6.0	25
Surrogate	% Rec		Acceptance Limits	
o-Terphenyl	84		50 - 150	

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11267**

**Method: NWTPH-Dx  
Preparation: 3550B**

LCS Lab Sample ID: LCS 580-11267/2-B  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1015  
Date Prepared: 09/27/2006 1223

Analysis Batch: 580-11356  
Prep Batch: 580-11267  
Units: mg/Kg

Instrument ID: SEA015  
Lab File ID: PL13966.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

LCSD Lab Sample ID: LCSD 580-11267/3-B  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1040  
Date Prepared: 09/27/2006 1223

Analysis Batch: 580-11356  
Prep Batch: 580-11267  
Units: mg/Kg

Instrument ID: SEA015  
Lab File ID: PL13967.D  
Initial Weight/Volume: 10 g  
Final Weight/Volume: 10 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Motor Oil (>C24-C36)	87	80	70 - 125	8	17		
#2 Diesel (C10-C24)	78	76	64 - 127	2	16		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
o-Terphenyl	84		78		50 - 150		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11367**

Lab Sample ID: MB 580-11367/12-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Date Analyzed: 09/29/2006 1654  
 Date Prepared: 10/29/2006 0913

Analysis Batch: 580-11434  
 Prep Batch: 580-11367  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA027  
 Lab File ID: N/A  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Barium	0.00033	J	0.00016	0.0050
Chromium	ND		0.00063	0.010
Selenium	ND		0.0044	0.050
Silver	ND		0.00083	0.010

**Lab Control Spike/  
 Lab Control Spike Duplicate Recovery Report - Batch: 580-11367**

LCS Lab Sample ID: LCS 580-11367/13-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Date Analyzed: 09/29/2006 1719  
 Date Prepared: 10/29/2006 0913

Analysis Batch: 580-11434  
 Prep Batch: 580-11367  
 Units: mg/L

**Method: 6010B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA027  
 Lab File ID: N/A  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-11367/14-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Date Analyzed: 09/29/2006 1723  
 Date Prepared: 10/29/2006 0913

Analysis Batch: 580-11434  
 Prep Batch: 580-11367  
 Units: mg/L

Instrument ID: SEA027  
 Lab File ID: N/A  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Barium	100	102	80 - 120	2	20		
Chromium	101	103	80 - 120	2	20		
Selenium	100	101	80 - 120	1	20		
Silver	96	98	80 - 120	2	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-11367**

**Method: 6010B  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 580-3718-3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/29/2006 1705  
Date Prepared: 10/29/2006 0913

Analysis Batch: 580-11434  
Prep Batch: 580-11367

Instrument ID: SEA027  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 580-3718-3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/29/2006 1709  
Date Prepared: 10/29/2006 0913

Analysis Batch: 580-11434  
Prep Batch: 580-11367

Instrument ID: SEA027  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Barium	104	102	75 - 125	1	20		
Chromium	105	103	75 - 125	2	20		
Selenium	103	101	75 - 125	2	20		
Silver	100	99	75 - 125	1	20		

**Duplicate - Batch: 580-11367**

**Method: 6010B  
Preparation: 3005A  
Total Recoverable**

Lab Sample ID: 580-3718-3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/29/2006 1702  
Date Prepared: 10/29/2006 0913

Analysis Batch: 580-11434  
Prep Batch: 580-11367  
Units: mg/L

Instrument ID: SEA027  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Barium	0.0412	0.0419	2	20	
Chromium	0.000143	0.000267	NC	20	
Selenium	-0.0342	-0.0367	NC	20	
Silver	0.0000554	0.000117	NC	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.



## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11375**

**Method: 6010B**  
**Preparation: 3050B**

Lab Sample ID: MB 580-11375/19-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 1834  
Date Prepared: 09/29/2006 1006

Analysis Batch: 580-11614  
Prep Batch: 580-11375  
Units: mg/Kg

Instrument ID: SEA027  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 g  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Barium	ND		0.0056	0.25
Chromium	ND		0.011	0.50
Selenium	ND		0.21	2.5
Silver	ND		0.015	0.50

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11375**

**Method: 6010B**  
**Preparation: 3050B**

LCS Lab Sample ID: LCS 580-11375/20-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 1859  
Date Prepared: 09/29/2006 1006

Analysis Batch: 580-11614  
Prep Batch: 580-11375  
Units: mg/Kg

Instrument ID: SEA027  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 g  
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-11375/21-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 1902  
Date Prepared: 09/29/2006 1006

Analysis Batch: 580-11614  
Prep Batch: 580-11375  
Units: mg/Kg

Instrument ID: SEA027  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 g  
Final Weight/Volume: 50 mL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Barium	101	98	80 - 120	3	35		
Chromium	101	98	80 - 120	3	35		
Selenium	97	92	80 - 120	5	35		
Silver	95	92	80 - 120	3	35		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11367**

Lab Sample ID: MB 580-11367/12-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Date Analyzed: 09/29/2006 1203  
 Date Prepared: 10/29/2006 0913

Analysis Batch: 580-11443  
 Prep Batch: 580-11367  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA026  
 Lab File ID: N/A  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Lead	0.000052	J	0.0000031	0.00040
Arsenic	ND		0.000073	0.00040
Cadmium	ND		0.0000074	0.00040

**Lab Control Spike/  
 Lab Control Spike Duplicate Recovery Report - Batch: 580-11367**

LCS Lab Sample ID: LCS 580-11367/13-A  
 Client Matrix: Water  
 Dilution: 50  
 Date Analyzed: 09/29/2006 1231  
 Date Prepared: 10/29/2006 0913

Analysis Batch: 580-11443  
 Prep Batch: 580-11367  
 Units: mg/L

**Method: 6020  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: SEA026  
 Lab File ID: N/A  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-11367/14-A  
 Client Matrix: Water  
 Dilution: 50  
 Date Analyzed: 09/29/2006 1235  
 Date Prepared: 10/29/2006 0913

Analysis Batch: 580-11443  
 Prep Batch: 580-11367  
 Units: mg/L

Instrument ID: SEA026  
 Lab File ID: N/A  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Arsenic	96	96	80 - 120	0	20		
Lead	99	99	80 - 120	0	20		
Cadmium	100	93	80 - 120	7	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-11367**

**Method: 6020  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 580-3718-3  
Client Matrix: Water  
Dilution: 50  
Date Analyzed: 09/29/2006 1219  
Date Prepared: 10/29/2006 0913

Analysis Batch: 580-11443  
Prep Batch: 580-11367

Instrument ID: SEA026  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 580-3718-3  
Client Matrix: Water  
Dilution: 50  
Date Analyzed: 09/29/2006 1223  
Date Prepared: 10/29/2006 0913

Analysis Batch: 580-11443  
Prep Batch: 580-11367

Instrument ID: SEA026  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Arsenic	96	96	75 - 125	1	20		
Lead	101	98	75 - 125	3	20	B	B
Cadmium	96	92	75 - 125	4	20		

**Duplicate - Batch: 580-11367**

**Method: 6020  
Preparation: 3005A  
Total Recoverable**

Lab Sample ID: 580-3718-3  
Client Matrix: Water  
Dilution: 5.0  
Date Analyzed: 09/29/2006 1215  
Date Prepared: 10/29/2006 0913

Analysis Batch: 580-11443  
Prep Batch: 580-11367  
Units: mg/L

Instrument ID: SEA026  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Arsenic	0.000165	0.000260	NC	20	
Lead	0.0000800 J	0.0000650	21	20	J B
Cadmium	0.00000500	0.0000100	NC	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11375**

**Method: 6020**  
**Preparation: 3050B**

Lab Sample ID: MB 580-11375/19-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/29/2006 1434  
Date Prepared: 09/29/2006 1006

Analysis Batch: 580-11444  
Prep Batch: 580-11375  
Units: mg/Kg

Instrument ID: SEA026  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 g  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Lead	0.0025	J	0.00017	0.020
Arsenic	ND		0.0036	0.020
Cadmium	ND		0.00040	0.020

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11375**

**Method: 6020**  
**Preparation: 3050B**

LCS Lab Sample ID: LCS 580-11375/20-A  
Client Matrix: Solid  
Dilution: 50  
Date Analyzed: 09/29/2006 1506  
Date Prepared: 09/29/2006 1006

Analysis Batch: 580-11444  
Prep Batch: 580-11375  
Units: mg/Kg

Instrument ID: SEA026  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 g  
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-11375/21-A  
Client Matrix: Solid  
Dilution: 50  
Date Analyzed: 09/29/2006 1510  
Date Prepared: 09/29/2006 1006

Analysis Batch: 580-11444  
Prep Batch: 580-11375  
Units: mg/Kg

Instrument ID: SEA026  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 g  
Final Weight/Volume: 50 mL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Arsenic	94	94	80 - 120	0	35		
Lead	98	97	80 - 120	1	35		
Cadmium	98	90	80 - 120	8	35		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11309**

**Method: 7470A**  
**Preparation: 7470A**

Lab Sample ID: MB 580-11309/11-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1535  
Date Prepared: 09/28/2006 0948

Analysis Batch: 580-11347  
Prep Batch: 580-11309  
Units: mg/L

Instrument ID: SEA029  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Mercury	ND		0.000055	0.00020

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11309**

**Method: 7470A**  
**Preparation: 7470A**

LCS Lab Sample ID: LCS 580-11309/12-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1544  
Date Prepared: 09/28/2006 0948

Analysis Batch: 580-11347  
Prep Batch: 580-11309  
Units: mg/L

Instrument ID: SEA029  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-11309/13-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1549  
Date Prepared: 09/28/2006 0948

Analysis Batch: 580-11347  
Prep Batch: 580-11309  
Units: mg/L

Instrument ID: SEA029  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Mercury	99	99	75 - 125	0	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-11309**

**Method: 7470A  
Preparation: 7470A**

MS Lab Sample ID: 580-3718-3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1441  
Date Prepared: 09/28/2006 0948

Analysis Batch: 580-11347  
Prep Batch: 580-11309

Instrument ID: SEA029  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 580-3718-3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1447  
Date Prepared: 09/28/2006 0948

Analysis Batch: 580-11347  
Prep Batch: 580-11309

Instrument ID: SEA029  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Mercury	92	95	75 - 125	3	20		

**Duplicate - Batch: 580-11309**

**Method: 7470A  
Preparation: 7470A**

Lab Sample ID: 580-3718-3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1436  
Date Prepared: 09/28/2006 0948

Analysis Batch: 580-11347  
Prep Batch: 580-11309  
Units: mg/L

Instrument ID: SEA029  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.000135	J	-0.000154	NC	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Method Blank - Batch: 580-11295**

**Method: 7471A**  
**Preparation: 7471A**

Lab Sample ID: MB 580-11295/20-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1202  
Date Prepared: 09/28/2006 0826

Analysis Batch: 580-11346  
Prep Batch: 580-11295  
Units: mg/Kg

Instrument ID: SEA029  
Lab File ID: N/A  
Initial Weight/Volume: 0.5 g  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Mercury	ND		0.0090	0.020

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-11295**

**Method: 7471A**  
**Preparation: 7471A**

LCS Lab Sample ID: LCS 580-11295/21-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1104  
Date Prepared: 09/28/2006 0826

Analysis Batch: 580-11346  
Prep Batch: 580-11295  
Units: mg/Kg

Instrument ID: SEA029  
Lab File ID: N/A  
Initial Weight/Volume: 0.5 g  
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-11295/22-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/28/2006 1109  
Date Prepared: 09/28/2006 0826

Analysis Batch: 580-11346  
Prep Batch: 580-11295  
Units: mg/Kg

Instrument ID: SEA029  
Lab File ID: N/A  
Initial Weight/Volume: 0.5 g  
Final Weight/Volume: 50 mL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Mercury	109	105	75 - 125	3	25		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## DATA REPORTING QUALIFIERS

Client: GeoEngineers Inc

Job Number: 580-3718-1

Lab Section	Qualifier	Description
GC/MS VOA		
	*	LCS or LCSD exceeds the control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
GC/MS Semi VOA		
	B	Compound was found in the blank and sample.
	F	MS or MSD exceeds the control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	X	Surrogate exceeds the control limits
GC VOA		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
GC Semi VOA		
	*	LCS or LCSD exceeds the control limits
	F	MS or MSD exceeds the control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	X	Surrogate exceeds the control limits
	D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
Metals		
	B	Compound was found in the blank and sample.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.



# Chain of Custody Record

STL Seattle  
5755 8th Street E.  
Tacoma, WA 98424  
Tel. 253-922-2310  
Fax 253-922-5047  
www.stl-inc.com

**SEVERN  
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**STL®**

Client <b>GEI</b>		Project Manager <b>KEVIN BROOM</b>		Date <b>9-25-06</b>	Chain of Custody Number <b>22108</b>
Address		Telephone Number (Area Code)/Fax Number <b>253-383-4940</b>		Lab Number <b>3718</b>	Page <b>1</b> of <b>1</b>
City <b>TACOMA</b>	State	Zip Code	Site Contact <b>Alex Flink</b>	Lab Contact	Analysis (Attach list if more space is needed)
Project Name and Location (State) <b>RAVIS GROUP WA</b>			Carrier/Waybill Number		
Contract/Purchase Order/Quote No.					

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Containers & Preservatives										Special Instructions/ Conditions of Receipt						
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	METHANOL	NWTPH-DX	NWTPH-GX	VOC's		MTCM METALS	SVOC'S	CPAH'S	PCB'S		
1) DP04-060925-010	9-25-06	945				X																	① ALL NWTPH-DX WITH SILICA GEL CLEANUP
2) DP04-060925-040		950				X																	
3) DP04-060925-W		1000	X																				
4) <del>DP03</del> DP03-060925-010		1050				X																	
5) DP02-060925-010		1200				X																	
6) DP01-060925-010		1245				X																	
7) DP01-060925-W		115	X																				
8) DP09-060925-010		240				X																	
9) DP09-060925-W		245	X																				
10) DP05-060925-015		345				X																	

Cooler:  Yes  No Cooler Temp: \_\_\_\_\_

Possible Hazard Identification:  Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Sample Disposal:  Return To Client  Disposal By Lab  Archive For **1** Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days):  24 Hours  48 Hours  5 Days  7 Days  15 Days  Other \_\_\_\_\_

QC Requirements (Specify)

1. Relinquished By <b>Kevin Broom</b>	Date <b>9/26/06</b>	Time <b>0840</b>	1. Received By <b>R. Uman</b>	Date <b>9-26-06</b>	Time <b>9:35</b>
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments



## LOGIN SAMPLE RECEIPT CHECK LIST

Client: GeoEngineers Inc

Job Number: 580-3718-1

**Login Number: 3718**

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	



## ANALYTICAL REPORT

Job Number: 580-3718-2

Job Description : Pant s Group0415-052 -01

For:  
GeoEngineers Inc  
1101 Fawcett, Suite 200  
Tacoma, WA 98402

Attention : Kevin M Broom

---

Heather Curbow  
Project Mgmt . Assistant  
hcurbow@stl-inc.com  
10/23/2006  
Revision: 1

Project Manager: Heather Curbow

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**Severn Trent Laboratories, Inc.**

STL Seattle 5755 8th Street East, Tacoma, WA 98424  
Tel (253) 922-2310 Fax (253) 922-5047 www.stl-inc.com



## EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-3718-2

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
580-3718-2 Hexavalent chromium	DP04-060925-040	0.12	JB	0.26	mg/Kg	6010B

## SAMPLE SUMMARY

Client: GeoEngineers Inc

Job Number: 580-3718-2

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
580-3718-2	DP04-060925-040	Solid	09/25/2006 0950	09/26/2006 1139

## Analytical Data

Client: GeoEngineers Inc

Job Number: 580-3718-2

**Client Sample ID: DP04-060925-040**

Lab Sample ID: 580-3718-2

Date Sampled: 09/25/2006 0950

Client Matrix: Solid

% Moisture: 27.3

Date Received: 09/26/2006 1139

---

### 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B

Analysis Batch: 580-12170

Instrument ID: SEA027

Preparation: 7195

Prep Batch: 580-12131

Lab File ID: N/A

Dilution: 1.0

Initial Weight/Volume: 5.1970 g

Date Analyzed: 10/20/2006 1453

Final Weight/Volume: 50 mL

Date Prepared: 10/19/2006 1441

---

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Hexavalent chromium		0.12	J B	0.0028	0.26

---

## Quality Control Results

Client: GeoEngineers Inc

Job Number: 580-3718-2

**Method Blank - Batch: 580-12131**

**Method: 6010B  
Preparation: 7195**

Lab Sample ID: MB 580-12131/9-A  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 10/20/2006 1435  
 Date Prepared: 10/19/2006 1441

Analysis Batch: 580-12170  
 Prep Batch: 580-12131  
 Units: mg/Kg

Instrument ID: SEA027  
 Lab File ID: N/A  
 Initial Weight/Volume: 5.0 g  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Hexavalent chromium	0.0055	J	0.0021	0.20

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 580-12131**

**Method: 6010B  
Preparation: 7195**

LCS Lab Sample ID: LCS 580-12131/10-A  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 10/20/2006 1437  
 Date Prepared: 10/19/2006 1441

Analysis Batch: 580-12170  
 Prep Batch: 580-12131  
 Units: mg/Kg

Instrument ID: SEA027  
 Lab File ID: N/A  
 Initial Weight/Volume: 5.0 g  
 Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-12131/11-A  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 10/20/2006 1440  
 Date Prepared: 10/19/2006 1441

Analysis Batch: 580-12170  
 Prep Batch: 580-12131  
 Units: mg/Kg

Instrument ID: SEA027  
 Lab File ID: N/A  
 Initial Weight/Volume: 5.0 g  
 Final Weight/Volume: 50 mL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Hexavalent chromium	89	86	80 - 120	2	35		

Calculations are performed before rounding to avoid round-off errors in calculated results.



**DATA REPORTING QUALIFIERS**

Client: GeoEngineers Inc

Job Number: 580-3718-2

<b>Lab Section</b>	<b>Qualifier</b>	<b>Description</b>
Metals	B	Compound was found in the blank and sample.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

# Chain of Custody Record

STL Seattle  
 5755 8th Street E.  
 Tacoma, WA 98424  
 Tel. 253-922-2310  
 Fax 253-922-5047  
 www.stl-inc.com



Client <b>GEI</b>		Project Manager <b>KEVIN BROOM</b>		Date <b>9-25-06</b>	Chain of Custody Number <b>22108</b>
Address		Telephone Number (Area Code)/Fax Number <b>253-383-4940</b>		Lab Number <b>3718</b>	Page <b>1</b> of <b>1</b>
City <b>TACOMA</b>	State	Zip Code	Site Contact <b>Alex Fink</b>	Lab Contact	Analysis (Attach list if more space is needed)
Project Name and Location (State) <b>RAVIS GROUP WA</b>			Carrier/Waybill Number		
Contract/Purchase Order/Quote No.					

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Containers & Preservatives										Special Instructions/ Conditions of Receipt						
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	METHANOL	NWTPH-DX	NWTPH-GX	VOC's		MTCM METALS	SVOC's	CPAH's	PCB's		
1) DP04-060925-010	9-25-06	945				X																① ALL NWTPH-DX WITH SILICA GEL CLEANUP	
2) DP04-060925-040		950				X																	
3) DP04-060925-W		1000	X				3		1	7													
4) <del>DP03-060925-010</del>		1050				X																	
5) DP02-060925-010		1200				X																	
6) DP01-060925-010		1245				X																	
7) DP01-060925-W		115	X				3		1	7													
8) DP09-060925-010		240				X																	
9) DP09-060925-W		245	X				3		1	7													
10) DP05-060925-015		345				X																	

Cooler:  Yes  No Cooler Temp: \_\_\_\_\_

Possible Hazard Identification:  Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Sample Disposal:  Return To Client  Disposal By Lab  Archive For **1** Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days):  24 Hours  48 Hours  5 Days  7 Days  15 Days  Other \_\_\_\_\_

QC Requirements (Specify)

1. Relinquished By <b>Kevin Broom</b>	Date <b>9/26/06</b>	Time <b>0840</b>	1. Received By <b>R. Brown</b>	Date <b>9-26-06</b>	Time <b>9:35</b>
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments



## LOGIN SAMPLE RECEIPT CHECK LIST

Client: GeoEngineers Inc

Job Number: 580-3718-2

**Login Number: 3718**

<b>Question</b>	<b>T/F/NA</b>	<b>Comment</b>
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

**Lab Report(s) Associated with  
Sample Location SVP-2SO**

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**Client:** PIONEER TECHNOLOGIES CORPORATION      **Batch #:** 130513021  
**Address:** 5205 CORPORATE CENTER COURT      **Project Name:** EAST BAY - SOIL TO 1A  
LACEY, WA 98503      PATHWAY  
**Attn:** TROY BUSSEY

## Analytical Results Report

<b>Sample Number</b>	130513021-002	<b>Sampling Date</b>	5/7/2013	<b>Date/Time Received</b>	5/9/2013	11:00 AM
<b>Client Sample ID</b>	SO-SVP-2SO-050713-4-6	<b>Sampling Time</b>	1:45 PM			
<b>Matrix</b>	Soil	<b>Sample Location</b>				
<b>Comments</b>						

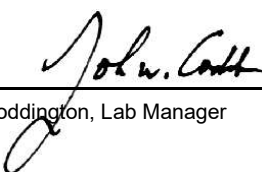
  

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Gasoline	1100	mg/Kg	5	5/20/2013	SAT	NWTPHG	
%moisture	17	Percent		5/22/2013	SAT	%moisture	

## Surrogate Data

<b>Sample Number</b>	130513021-002			
<b>Surrogate Standard</b>		<b>Method</b>	<b>Percent Recovery</b>	<b>Control Limits</b>
4-Bromofluorobenzene		NWTPHG	104.0	50-150

Authorized Signature

  
\_\_\_\_\_  
John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level  
ND Not Detected  
PQL Practical Quantitation Limit

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The results reported relate only to the samples indicated.  
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

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**Client:** PIONEER TECHNOLOGIES CORPORATION      **Batch #:** 130513021  
**Address:** 5205 CORPORATE CENTER COURT      **Project Name:** EAST BAY - SOIL TO 1A  
LACEY, WA 98503      PATHWAY  
**Attn:** TROY BUSSEY

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Gasoline	1.06	mg/kg	1	106.0	70-130	5/20/2013	5/20/2013

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
130513021-001	Gasoline	ND	67.2	mg/kg	73.5	91.4	60-140	5/20/2013	5/20/2013

### Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Gasoline	71.1	mg/kg	73.5	96.7	5.6	0-25	5/20/2013	5/20/2013

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Gasoline	ND	mg/Kg	5	5/20/2013	5/20/2013

AR      Acceptable Range  
ND      Not Detected  
PQL     Practical Quantitation Limit  
RPD     Relative Percentage Difference

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095

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**Client:** PIONEER TECHNOLOGIES CORPORATION      **Batch #:** 130513021  
**Address:** 5205 CORPORATE CENTER COURT      **Project Name:** EAST BAY - SOIL TO 1A  
LACEY, WA 98503      PATHWAY  
**Attn:** TROY BUSSEY

## Analytical Results Report

<b>Sample Number</b>	130513021-001	<b>Sampling Date</b>	5/7/2013	<b>Date/Time Received</b>	5/9/2013	11:00 AM	
<b>Client Sample ID</b>	SO-SVP-1SO-050713-3-5	<b>Sampling Time</b>	1:30 PM				
<b>Matrix</b>	Soil	<b>Sample Location</b>					
<b>Comments</b>							
Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
1,2,4-Trimethylbenzene	0.00951	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
1,2-Dibromoethane	ND	mg/kg	0.001	5/20/2013	SAT	EPA 8260B	
1,2-Dichloroethane	ND	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
1,3,5-Trimethylbenzene	ND	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
Benzene	ND	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
Ethylbenzene	ND	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
m+p-Xylene	0.00641	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
methyl-t-butyl ether (MTBE)	ND	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
Naphthalene	0.417	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
o-Xylene	ND	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
Toluene	ND	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
n-Hexane	ND	mg/kg	0.005	5/22/2013	SAT	EPA 8260B	
%moisture	20.9	Percent		5/22/2013	SAT	%moisture	

## Surrogate Data

<b>Sample Number</b>	130513021-001			
Surrogate Standard	Method	Percent Recovery	Control Limits	
1,2-Dichlorobenzene-d4	EPA 8260B	106.4	70-130	
4-Bromofluorobenzene	EPA 8260B	100.0	70-130	
Toluene-d8	EPA 8260B	100.4	70-130	



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**Client:** PIONEER TECHNOLOGIES CORPORATION      **Batch #:** 130513021  
**Address:** 5205 CORPORATE CENTER COURT      **Project Name:** EAST BAY - SOIL TO 1A  
LACEY, WA 98503      PATHWAY  
**Attn:** TROY BUSSEY

## Analytical Results Report

**Sample Number** 130513021-002      **Sampling Date** 5/7/2013      **Date/Time Received** 5/9/2013 11:00 AM  
**Client Sample ID** SO-SVP-2SO-050713-4-6      **Sampling Time** 1:45 PM  
**Matrix** Soil      **Sample Location**  
**Comments**

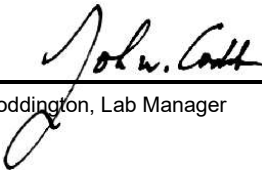
Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
1,2,4-Trimethylbenzene	0.938	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
1,2-Dibromoethane	ND	mg/kg	0.001	5/20/2013	SAT	EPA 8260B	
1,2-Dichloroethane	ND	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
1,3,5-Trimethylbenzene	0.286	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
Benzene	ND	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
Ethylbenzene	0.115	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
m+p-Xylene	0.216	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
methyl-t-butyl ether (MTBE)	ND	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
Naphthalene	150	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
o-Xylene	0.154	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
Toluene	ND	mg/kg	0.005	5/20/2013	SAT	EPA 8260B	
n-Hexane	ND	mg/kg	0.005	5/22/2013	SAT	EPA 8260B	
%moisture	17	Percent		5/22/2013	SAT	%moisture	

## Surrogate Data

**Sample Number** 130513021-002

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260B	112.4	70-130
4-Bromofluorobenzene	EPA 8260B	101.6	70-130
Toluene-d8	EPA 8260B	100.8	70-130

Authorized Signature

  
\_\_\_\_\_  
John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level  
ND Not Detected  
PQL Practical Quantitation Limit

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**Client:** PIONEER TECHNOLOGIES CORPORATION      **Batch #:** 130513021  
**Address:** 5205 CORPORATE CENTER COURT      **Project Name:** EAST BAY - SOIL TO 1A  
LACEY, WA 98503      PATHWAY  
**Attn:** TROY BUSSEY

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Toluene	0.0106	mg/kg	0.01	106.0	77-123	5/20/2013	5/20/2013
o-Xylene	0.0105	mg/kg	0.01	105.0	77-121	5/20/2013	5/20/2013
Ethylbenzene	0.0107	mg/kg	0.01	107.0	76-124	5/20/2013	5/20/2013
Benzene	0.0104	mg/kg	0.01	104.0	83-127	5/20/2013	5/20/2013

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
130516026-002A	Toluene	ND	0.506	mg/kg	0.5	101.2	62-138	5/20/2013	5/20/2013
130516026-002A	o-Xylene	ND	0.512	mg/kg	0.5	102.4	64-136	5/20/2013	5/20/2013
130516026-002A	Ethylbenzene	ND	0.513	mg/kg	0.5	102.6	66-131	5/20/2013	5/20/2013
130516026-002A	Benzene	ND	0.501	mg/kg	0.5	100.2	65-139	5/20/2013	5/20/2013

### Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Toluene	0.478	mg/kg	0.5	95.6	5.7	0-25	5/20/2013	5/20/2013
o-Xylene	0.488	mg/kg	0.5	97.6	4.8	0-25	5/20/2013	5/20/2013
Ethylbenzene	0.485	mg/kg	0.5	97.0	5.6	0-25	5/20/2013	5/20/2013
Benzene	0.475	mg/kg	0.5	95.0	5.3	0-25	5/20/2013	5/20/2013

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
1,2,4-Trimethylbenzene	ND	mg/kg	0.005	5/20/2013	5/20/2013
1,2-Dibromoethane	ND	mg/kg	0.001	5/20/2013	5/20/2013
1,2-Dichloroethane	ND	mg/kg	0.005	5/20/2013	5/20/2013
1,3,5-Trimethylbenzene	ND	mg/kg	0.005	5/20/2013	5/20/2013
Benzene	ND	mg/kg	0.005	5/20/2013	5/20/2013
Ethylbenzene	ND	mg/kg	0.005	5/20/2013	5/20/2013
m+p-Xylene	ND	mg/kg	0.005	5/20/2013	5/20/2013
methyl-t-butyl ether (MTBE)	ND	mg/kg	0.005	5/20/2013	5/20/2013
Naphthalene	ND	mg/kg	0.005	5/20/2013	5/20/2013
o-Xylene	ND	mg/kg	0.005	5/20/2013	5/20/2013

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095

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**Client:** PIONEER TECHNOLOGIES CORPORATION      **Batch #:** 130513021  
**Address:** 5205 CORPORATE CENTER COURT      **Project Name:** EAST BAY - SOIL TO 1A  
LACEY, WA 98503      PATHWAY  
**Attn:** TROY BUSSEY

## Analytical Results Report Quality Control Data

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### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Toluene	ND	mg/kg	0.005	5/20/2013	5/20/2013

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AR      Acceptable Range  
ND      Not Detected  
PQL      Practical Quantitation Limit  
RPD      Relative Percentage Difference

### Comments:

---

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095

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## Login Report

**Customer Name:** PIONEER TECHNOLOGIES CORPORATION  
5205 CORPORATE CENTER COURT  
LACEY WA 98503

**Order ID:** 130513021  
**Order Date:** 5/13/2013

**Contact Name:** TROY BUSSEY

**Project Name:** EAST BAY - SOIL TO 1A  
PATHWAY

**Comment:**

---

**Sample #:** 130513021-001 **Customer Sample #:** SO-SVP-1SO-050713-3-5

**Recv'd:**  **Collector:** **Date Collected:** 5/7/2013  
**Quantity:** 3 **Matrix:** Soil **Date Received:** 5/9/2013 11:00:00 AM

**Comment:**

Test	Lab	Method	Due Date	Priority
%Moisture	M	%moisture	5/21/2013	<u>Normal (6-10 Days)</u>
TPHG-NW	M	NWTPHG	5/21/2013	<u>Normal (6-10 Days)</u>
VOLATILES 8260	M	EPA 8260B	5/21/2013	<u>Normal (6-10 Days)</u>
VOLATILES MISC GC/MS	M	EPA 8260B	5/21/2013	<u>Normal (6-10 Days)</u>

---

**Sample #:** 130513021-002 **Customer Sample #:** SO-SVP-2SO-050713-4-6

**Recv'd:**  **Collector:** **Date Collected:** 5/7/2013  
**Quantity:** 1 **Matrix:** Soil **Date Received:** 5/9/2013 11:00:00 AM

**Comment:**

Test	Lab	Method	Due Date	Priority
%Moisture	M	%moisture	5/21/2013	<u>Normal (6-10 Days)</u>
TPHG-NW	M	NWTPHG	5/21/2013	<u>Normal (6-10 Days)</u>
VOLATILES 8260	M	EPA 8260B	5/21/2013	<u>Normal (6-10 Days)</u>
VOLATILES MISC GC/MS	M	EPA 8260B	5/21/2013	<u>Normal (6-10 Days)</u>

**Customer Name:** PIONEER TECHNOLOGIES CORPORATION  
5205 CORPORATE CENTER COURT  
LACEY WA 98503

**Order ID:** 130513021  
**Order Date:** 5/13/2013

**Contact Name:** TROY BUSSEY

**Project Name:** EAST BAY - SOIL TO 1A  
PATHWAY

**Comment:**

### SAMPLE CONDITION RECORD

---

Samples received in a cooler?	Yes
Samples received intact?	Yes
What is the temperature inside the cooler?	4.4
Samples received with a COC?	Yes
Samples received within holding time?	Yes
Are all sample bottles properly preserved?	Yes
Are VOC samples free of headspace?	N/A
Is there a trip blank to accompany VOC samples?	N/A
Labels and chain agree?	Yes



### Chain of Custody Record

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504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

130513 021 **PITC** Last Due 5/21/2013

1st SAMP 5/7/2013 1st RCVD 5/9/2013

**EAST BAY - SOIL TO 1A PATHWAY**

Company Name: <b>PIONEER TECH CORP</b>				Project Manager: <b>TROY BUSSEY</b>				<b>Turn Around Time &amp; Reporting</b>				
Address: <b>5205 CORP CTR CRT SE, SUITE A</b>				Project Name & #: <b>EAST BAY - SOIL TO 1A PATHWAY</b>				Please refer to our normal turn around times at: <a href="http://www.anateklabs.com/services/guidelines/reporting.asp">http://www.anateklabs.com/services/guidelines/reporting.asp</a>				
City: <b>ACEY</b> State: <b>WA</b> Zip: <b>99503</b>				Email Address: <b>busseyt@uspioneer.com</b>				<input checked="" type="checkbox"/> Normal <input type="checkbox"/> Next Day* <input type="checkbox"/> 2nd Day* <input type="checkbox"/> Other*				
Phone: <b>253 360 570 1700</b>				Purchase Order #:				<input type="checkbox"/> All rush order requests must be prior approved <input type="checkbox"/> Phone <input type="checkbox"/> Mail <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email				
Fax:				Sampler Name & phone: <b>GRETTCHEN MALLARI 360 570 1700</b>								
Provide Sample Description				List Analyses Requested				Note Special Instructions/Comments				
				Preservative: <input checked="" type="checkbox"/> # of Containers: <input checked="" type="checkbox"/> Sample Volume: <b>8260</b> <b>NUPH-G</b>								
Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume							
1	50-SVP-150-050713	3-5 5/7/13 1330	SOIL	3		X	X					
2	50-SVP-250-050713	4-6 5/7/13 145	SOIL	3		X	X					
<b>MINIBS</b>												
Inspection Checklist												
Received Intact?						<input checked="" type="checkbox"/>	N					
Labels & Chains Agree?						<input checked="" type="checkbox"/>	N					
Containers Sealed?						<input checked="" type="checkbox"/>	N					
VOC Head Space?						<input checked="" type="checkbox"/>	N					
Fed ex Ice packs Seal 120												
Temperature (°C)						4.4						
Preservative:												
Date & Time:						5/9/13 11:00						
Inspected By:						BT						
Relinquished by		Printed Name		Signature		Company		Date		Time		
Relinquished by		GRETCHEN MALLARI		<i>G. Mallari</i>		PIONEER		5/7/13		3:30		
Received by		B Thomson		<i>B Thomson</i>		Anatek		5/9/13		11:00		
Relinquished by												
Received by												
Relinquished by												
Received by												

**Lab Report(s) Associated with  
Sample Location MW24S**

Gasoline (NWTPH-Gx)					X	X
Diesel (NWTPH-Dx)						
Diesel & Oil (NWTPH-DO)					X	X
Fuel Scan (NWTPH-HCIII)						
VOC's (EPA 8021b)						
Organochlorine Pesticides						
PCB's (EPA 8082)						
Volatiles (EPA 8260)						
PAH's (EPA 8100 or 8270)	X				X	X
Semi-Volatiles (EPA 8270)						
Ignitability (EPA 1010)						
Oil and Grease (EPA 1664)						
pH (EPA 9040/9045)						
Specific Conductance (EP						
Paint Filter Test (EPA 909						
Heavy Metals* (EPA 7000					X	X



MTBE/BTEX (EPA 8021b)	X	X				
Gasoline (NWTPH-Gx)	X	X				
Diesel (NWTPH-Dx)						
Diesel & Oil (NWTPH-Dx)	X	X				
Fuel Scan (NWTPH-HCID)						
VOC's (EPA 8021b)						
Organochlorine Pesticides (						
PCB's (EPA 8082)						
Volatiles (EPA 8260)						
PAH's (EPA 8100 or 8270/	X	X				
Semi-Volatiles (EPA 8270)						
Ignitability (EPA 1010)						
Oil and Grease (EPA 1664 I						
pH (EPA 9040/9045)						
Specific Conductance (EPA						
Paint Filter Test (EPA 9095						
Heavy Metals* (EPA 7000	X	X				



# DRAGON ANALYTICAL LABORATORY

2818 Madrona Beach Rd NW, Olympia WA 98502  
(360) 866-0543



Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water  
Mobile Environmental Laboratory

Pioneer Technologies Corporation  
Project: East Bay PH2 RI

**DAL Number: 090610-08**

## ANALYTICAL RESULTS FOR THE ANALYSIS OF SEMI-VOLATILE COMPOUNDS IN SOIL BY EPA METHOD 8270

Sample Identification			Blank	MW21S-061209-0.5-1.5	MW23S-061209-5-6	MW23S-061209-9-10.5	MW24S-061209-6.5-8	MW24S-061209-6.5-8 Dup.	MW24S-061209-9-10	MW25S-061209-6.5-7.5
Percent Solids (%)			n/a	88.5	71.9	39.9	23.2	23.2	49.0	52.3
Date Extracted	CAS	MRL	6/15/2009	6/15/2009	6/15/2009	6/15/2009	6/15/2009	6/15/2009	6/15/2009	6/15/2009
Date Analyzed	Number	(mg/kg)	6/18/2009	6/18/2009	6/18/2009	6/18/2009	6/18/2009	6/18/2009	6/18/2009	6/18/2009
Benzo(a)anthracene	56-55-3	0.01	nd	0.03	0.03	0.33	0.50	0.50	0.08	0.33
Benzo(a)pyrene	50-32-8	0.01	nd	0.13	0.13	0.46	0.70	0.71	0.20	0.42
Benzo(b)fluoranthene	205-99-2	0.01	nd	nd	nd	0.34	0.42	0.44	0.02	0.35
Benzo(k)fluoranthene	207-08-9	0.01	nd	nd	nd	0.19	0.21	0.21	0.03	0.11
Chrysene	218-01-9	0.01	nd	nd	nd	0.43	0.58	0.58	0.06	0.48
Dibenzo(a,h)anthracene	53-70-3	0.01	nd	nd	0.12	0.19	0.21	0.21	0.14	0.15
Ideno(1,2,3-cd)pyrene	193-39-5	0.01	nd	0.26	0.28	0.55	0.60	0.60	0.36	0.45
1-Methylnaphthalene	90-12-0	0.01	nd	0.03	nd	0.14	0.02	0.02	0.02	0.01
2-Methylnaphthalene	91-57-6	0.01	nd	0.06	nd	0.14	0.04	0.04	0.03	0.03
Naphthalene	91-20-3	0.01	nd	0.05	nd	nd	0.05	0.05	0.15	0.19
<b>Surrogate Recovery (%)</b>										
2-Fluorophenol			96.8	120	76.1	126	73.9	73.4	55.2	74.8
Phenol-d6			107	128	81.4	133	79.1	78.1	60	80.6
Nitrobenzene-d5			85.5	119	62.4	123	60.8	68.4	63.8	59.9
2-Fluorobiphenol			103	119	62.3	120	61.7	66.0	60.9	58.0
2,4,6-Tribromophenol			111	124	99.3	130	91.5	92.1	75.7	99.1
Terphenyl-d14			118	120	65.6	124	63.5	63.5	63.1	58.6

### Data Flags

WA-DOE-Laboratory Certification No.: C2013

"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.

"n/a" indicates not applicable

Sample results based on dry weight.

Comments and Explanations: None

Analyst: T. McCall

Data reviewed by: R Lewis

Pioneer Technologies Corporation  
 Project: East Bay PH2 RI

DAL Number: 090610-08

**ANALYTICAL RESULTS FOR THE ANALYSIS OF SEMI-VOLATILE COMPOUNDS IN SOIL BY EPA METHOD 8270**

Sample Identification			MW25S- 061209-10.5-12	MW25S-061209- 12.4-14	LCS	090618-MS	090618-MSD	MW24S-061209- 6.5-8 Dup.
Percent Solids (%)			64.4	84.4	n/a	n/a	n/a	23.2
Date Extracted	CAS	MRL	6/15/2009	6/15/2009	6/15/2009	6/15/2009	6/15/2009	6/15/2009
Date Analyzed	Number	(mg/kg)	6/18/2009	6/18/2009	6/18/2009	6/18/2009	6/18/2009	6/18/2009
Benzo(a)anthracene	56-55-3	0.01	<b>0.07</b>	<b>0.02</b>	105%	107%	106%	<b>0.50</b>
Benzo(a)pyrene	50-32-8	0.01	nd	<b>0.12</b>	n/a	n/a	n/a	<b>0.71</b>
Benzo(b)fluoranthene	205-99-2	0.01	nd	nd	n/a	n/a	n/a	<b>0.44</b>
Benzo(k)fluoranthene	207-08-9	0.01	<b>0.02</b>	nd	n/a	n/a	n/a	<b>0.21</b>
Chrysene	218-01-9	0.01	<b>0.10</b>	nd	104%	113%	112%	<b>0.58</b>
Dibenzo(a,h)anthracene	53-70-3	0.01	nd	<b>0.10</b>	n/a	n/a	n/a	<b>0.21</b>
Ideno(1,2,3-cd)pyrene	193-39-5	0.01	<b>0.34</b>	nd	75.8%	77.4%	72.6%	<b>0.60</b>
1-Methylnaphthalene	90-12-0	0.01	nd	nd	n/a	n/a	n/a	<b>0.02</b>
2-Methylnaphthalene	91-57-6	0.01	<b>0.02</b>	nd	n/a	n/a	n/a	<b>0.04</b>
Naphthalene	91-20-3	0.01	<b>0.02</b>	nd	n/a	n/a	n/a	<b>0.05</b>
<b>Surrogate Recovery (%)</b>								
2-Fluorophenol			76.9	66.1	119	126	126	73.4
Phenol-d6			82.0	70.7	126	133	133	78.1
Nitrobenzene-d5			63.1	67.1	107	104	103	68.4
2-Fluorobiphenol			61.5	65.0	82.7	81.6	81.9	66.0
2,4,6-Tribromophenol			95.9	84.6	128	125	124	92.1
Terphenyl-d14			63.0	69.7	108	107	106	63.5

**Data Flags**

WA-DOE-Laboratory Certification No.: C2013

"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.

"n/a" indicates not applicable

Sample results based on dry weight.

Comments and Explanations: None

Analyst: T. McCall

Data reviewed by: R Lewis



# DRAGON ANALYTICAL LABORATORY

2818 Madrona Beach Rd NW, Olympia WA 98502  
(360) 866-0543



Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water  
Mobile Environmental Laboratory

Pioneer Technologies Corporation  
Project: East Bay PH2 RI

**DAL Number: 090610-08**

## ANALYTICAL RESULTS FOR THE ANALYSIS OF FUEL IN SOIL

Sample Identification	Date Analyzed	Percent Solids (%)	Diesel NWTPH-Dx (mg/kg)	Heavy Oil NWTPH-Dx (mg/kg)	Surrogate Recovery 2-FBP (%)	Data Flags
Method Blank	6/15/2009	n/a	nd	nd	100	
MW23S-061209-5-6	6/15/2009	71.9	<b>1160</b>	nd	120	(1)
MW23S-061209-9-10.5	6/15/2009	39.9	nd	nd	112	
MW24S-061209-6.5-8	6/15/2009	23.2	nd	<b>494</b>	113	
MW24S-061209-9-10	6/15/2009	49.0	nd	<b>418</b>	110	
MW25S-061209-6.5-7.5	6/15/2009	52.3	nd	<b>2020</b>	99.3	
MW25S-061209-10.5-12	6/15/2009	64.4	nd	<b>1070</b>	101	
MW25S-061209-12.4-14	6/15/2009	84.4	nd	nd	98.3	
LCS	6/15/2009	n/a	105%	n/a	n/a	
090615-MS	6/15/2009	n/a	121%	n/a	n/a	
090615-MSD	6/15/2009	n/a	110%	n/a	n/a	
Method Reporting Limits			25	100		

WA-DOE-Laboratory Certification No.: C2013

"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.

"n/a" indicates not applicable

Sample results based on dry weight.

Comments and Explanations: (1) indicates atypical diesel pattern.

Analyst: T. McCall

Data reviewed by: R. Lewis



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Mobile Environmental Laboratory

Pioneer Technologies Corporation  
Project: East Bay PH2 RI

**DAL Number: 090610-08**

## ANALYTICAL RESULTS FOR THE ANALYSIS OF GASOLINE RANGE ORGANICS IN SOIL

Sample Identification	Date Analyzed	Percent Solids (%)	Benzene EPA 8021B (mg/kg)	Toluene EPA 8021B (mg/kg)	Ethylbenzene EPA 8021B (mg/kg)	m&p-Xylene EPA 8021B (mg/kg)	o-Xylene EPA 8021B (mg/kg)	Gasoline NWTPH-Gx (mg/kg)	Surrogate Recovery BFB (%)	Data Flags
Method Blank	6/16/2009	n/a	nd	nd	nd	nd	nd	nd	97.7	
Method Blank	6/17/2009	n/a	nd	nd	nd	nd	nd	nd	86.0	
MW21S-061209-2.5-4	6/16/2009	81.5	nd	nd	nd	nd	nd	nd	76.8	
MW23S-061209-5-6	6/16/2009	71.9	nd	nd	nd	nd	nd	nd	81.6	
MW23S-061209-9-10.5	6/16/2009	39.9	nd	nd	nd	nd	nd	nd	68.6	
MW24S-061209-6.5-8	6/16/2009	23.2	nd	nd	nd	nd	nd	nd	87.2	
MW24S-061209-9-10	6/16/2009	49.0	nd	nd	nd	nd	nd	nd	87.8	
MW25S-061209-6.5-7.5	6/17/2009	52.3	nd	nd	nd	nd	nd	nd	66.5	
MW25S-061209-10.5-12	6/17/2009	64.4	nd	nd	nd	nd	nd	nd	102	
MW25S-061209-12.4-14	6/17/2009	84.4	nd	nd	nd	nd	nd	nd	83.1	
090616-LCS	6/16/2009	n/a	108%	122%	120%	98.9%	105%	94.9%	n/a	
090617-MS	6/17/2009	n/a	104%	101%	95.2%	110%	97.3%	108%	n/a	
<b>Method Reporting Limits</b>			0.05	0.10	0.10	0.10	0.10	5.0		

WA-DOE-Laboratory Certification No.: C2013

"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.

"n/a" indicates not applicable

Sample results based on dry weight.

Comments and Explanations: None

Analyst: T. McCall

Data reviewed by: R Lewis



# DRAGON ANALYTICAL LABORATORY

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Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water  
Mobile Environmental Laboratory

Pioneer Technologies Corporation  
Project: East Bay PH2 RI

**DAL Number: 090610-08**

## ANALYTICAL RESULTS FOR THE ANALYSIS OF HEAVY METALS IN SOIL BY EPA METHOD 6020 A

Sample Identification	Date Analyzed	Percent Solids	Arsenic (As)	Cadmium (Cd)	Lead (Pb)
Chemical Abstract Number (CAS)			7440-38-2	7440-43-9	7439-92-1
Units		(%)	(mg/kg)	(mg/kg)	(mg/kg)
Method Blank	6/18/2009	n/a	nd	nd	nd
MW23S-061209-5-6	6/26/2009	71.9	<b>nd</b>	<b>0.65</b>	<b>0.46</b>
MW23S-061209-9-10.5	6/18/2009	39.9	<b>8.55</b>	<b>0.45</b>	<b>71.2</b>
MW24S-061209-6.5-8	6/18/2009	23.2	<b>1.76</b>	<b>0.76</b>	<b>53.5</b>
MW24S-061209-9-10	6/18/2009	49.0	<b>4.79</b>	<b>0.54</b>	<b>34.3</b>
MW25S-061209-6.5-7.5	6/18/2009	52.3	<b>4.10</b>	<b>0.75</b>	<b>108</b>
MW25S-061209-10.5-12	6/18/2009	64.4	<b>4.85</b>	<b>0.52</b>	<b>17.4</b>
MW25S-061209-12.4-14	6/18/2009	84.4	<b>3.07</b>	<b>0.32</b>	<b>2.54</b>
LCS	6/18/2009	n/a	104%	101%	104%
090618-MS	6/18/2009	n/a	MI	99.2%	MI
090618-MSD	6/18/2009	n/a	MI	97.9%	MI
Method Reporting Limits			0.25	0.25	0.25

WA-DOE-Laboratory Certification No.: C2013

"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.

"n/a" indicates not applicable

"MI" indicates Matrix Interference

Sample results based on dry weight.

Comments and Explanations: None

Analyst: T. McCall

Data reviewed by: R Lewis

**Report Prepared for:**

Troy Bussey  
Pioneer Technologies Corporation  
2612 Yelm Highway S.E.  
Suite B  
Olympia WA 98501-4826

**REPORT OF  
LABORATORY  
ANALYSIS FOR  
PCDD/PCDF**

**Report Prepared Date:**

July 1, 2009

**Report Information:**

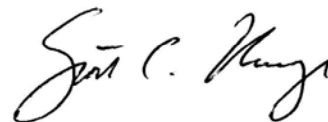
**Pace Project #: 1097191**  
**Sample Receipt Date: 06/13/2009**  
**Client Project #: East Bay PH2 RI**  
**Client Sub PO #: N/A**  
**State Cert #: C218**

**Invoicing & Reporting Options:**

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

**This report has been reviewed and prepared by:**



Scott Unze, Project Manager  
(612) 607-6383  
(612) 607-6444 (fax)  
scott.unze@pacelabs.com



**Report of Laboratory Analysis**

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The results relate only to the samples included in this report.



## **DISCUSSION**

This report presents the results from the analyses performed on seven samples submitted by a representative of Pioneer Technologies Corporation. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. Reporting limits were based on signal-to-noise calculations.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 20-111%. With the exceptions of eleven low values, which were flagged "P" on the results tables, the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

In some cases, interfering substances impacted the determinations of PCDD or PCDF congeners. The affected values were flagged "I" where incorrect isotope ratios were obtained, or "E" where polychlorinated diphenyl ethers were present.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain trace levels of selected congeners. These were below the calibration range of the method. The levels reported for the affected congeners in the field samples were higher than the corresponding blank levels by one or more orders of magnitude. These results indicate that the sample processing steps did not contribute significantly to the levels reported for the field samples.

A laboratory spike sample was also prepared with the sample batch using clean sand that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 89-115%. These results indicate a high degree of accuracy for these determinations. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

## **REPORT OF LABORATORY ANALYSIS**

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# **Appendix A**

## Sample Management

1097191

**Chain of Custody Record**



1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246  
 504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

Anatek  
 Log-in #

<b>Company Name:</b> PTC Address: 2612 Yelm Hwy SE WA 98501 City: Olympia State: WA Zip: 98501 Phone: 360-570-1760 Fax:		<b>Project Manager:</b> Troy Bussey Project Name & #: East Bay PH2 RI Email Address: busseyt@uspioneer.com Purchase Order #: Credit card Sampler Name & phone: same		<b>Turn Around Time &amp; Reporting</b> Please refer to our normal turn around times at http://www.anateklabs.com/services/guidelines/reporting.asp <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Next Day* <input type="checkbox"/> 2nd Day* <input type="checkbox"/> Other* *All rush order requests must be prior approved.		<b>Note Special Instructions/Comments</b> 1. please hold all samples for possible analyses 2. see RL expectations sent previously	
<b>Provide Sample Description</b>		<b>List Analyses Requested</b>		<b>Inspection Checklist</b>		Received intact? <input checked="" type="checkbox"/> N Labels & Chains Agree? <input checked="" type="checkbox"/> N Containers Sealed? <input checked="" type="checkbox"/> N VOC Head Space? <input checked="" type="checkbox"/> Y Temperature (°C): 5.0 Preservative:	
Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	Preservative: N/A	
	<del>MW2215-061209-1-5</del>		Soil	1	4oz		
	MW2215-061209-2-5-4	08/10		1			06/1
	MW2215-061209-4-5-6	08/20		1			007
	MW2215-061209-1-5-3	09/50		1			008
	MW2215-061209-5-6	10/0		1			009
	MW2215-061209-9-10-5	10/05		1			010
	MW2215-061209-1-2-5	11/10		1			011
	MW2215-061209-3-4-5	11/50		1			012
	MW2215-061209-6-8-8	12/00		1			
	MW2215-061209-9-10	12/10		1			
	MW2215-061209-1-2-5	13/00		1			
	MW2215-061209-3-5-5	13/10		1			
Relinquished by	Troy Bussey	Signature	Printed Name	Company	Date	Time	
Received by	Alex Kulze			PTC	6/12/09	1630	
Relinquished by				Race	6/15/09	0955	
Received by							
Relinquished by							
Received by							



**Chain of Custody Record**

1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246  
 504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

1097191

Anatek Log-In #

Company Name: **PTC**  
 Address: **2612 Yeim Hwy SE**  
 City: **Olympia** State: **WA** Zip: **98501**  
 Phone: **360-570-1700**  
 Fax:

Project Manager: **Tray Bussey**  
 Project Name & #: **East Bay PH2 RT**  
 Email Address: **bussey@auspioneer.com**  
 Purchase Order #: **Credit card**  
 Sampler Name & phone: **same**

**Turn Around Time & Reporting**  
 Please refer to our normal turn around times at <http://www.anateklabs.com/services/guidelines/reporting.asp>  
 Normal  
 Next Day\*  
 2nd Day\*  
 Other\*  
 \*All rush order requests must be prior approved.  
 Phone \_\_\_\_\_  
 Mail (final)  
 Fax \_\_\_\_\_  
 Email (print)

Provide Sample Description			List Analyses Requested		
Lab ID	Sample Identification	Sampling Date/Time	Matrix	Preservative:	Sample Volume
	MW255-061209-6.7-7.5	6/12/09 1320	Soil	N/A	402
	MW255-061209-10.5-12	6/12/09 1330		Dioxin/Furan 8290	402
	MW255-061209-12.5-14	6/12/09 1340			402
	MW255-061209-0.5.2	6/12/09 1425		X	402
	MW255-061209-2.4	6/12/09 1430		X	402

Note Special Instructions/Comments  
 1) please hold all samples for possible analyses  
 2) see RL expectations sent previously

Relinquished by	Printed Name	Signature	Company	Date	Time
	Tray Bussey	<i>Tray Bussey</i>	PTC	6/12/09	1630
Received by	Alex Kulzer	<i>Alex Kulzer</i>	PTC	6/13/09	0900
Relinquished by					
Received by					
Relinquished by					
Received by					

**Inspection Checklist**  
 Received Intact?  N  
 Labels & Chains Agree?  N  
 Containers Sealed?  N  
 VOC Head Space?  N  
 Temperature (°C): 5.0  
 Preservative \_\_\_\_\_  
 Date & Time \_\_\_\_\_  
 Inspected By \_\_\_\_\_

**Sample Condition Upon Receipt**

Pace Analytical

Client Name: Anatek Labs Inc

Project # 1097191

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

Tracking #: 8667-2411-9389

Optional  
Proj. Due Date:  
Proj. Name:

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other Temp Blank: Yes  No

Thermometer Used 003240#2, 179425

Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 5.0

Biological Tissue is Frozen: Yes  No

Date and Initials of person examining contents: ME 01/13/09

Temp should be above freezing to 8°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>SI</u>		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

**Client Notification/ Resolution:**

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_

Date: 01/15/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

## **Appendix B**

### Sample Analysis Summary



### Method 8290 Sample Analysis Results

Client - Pioneer Technologies Corporation

Client's Sample ID	MW23S-061209-5-6		
Lab Sample ID	1097191005		
Filename	F90624B_12		
Injected By	BAL		
Total Amount Extracted	15.1 g	Matrix	Soil
% Moisture	26.7	Dilution	NA
Dry Weight Extracted	11.1 g	Collected	06/12/2009
ICAL ID	F90501	Received	06/13/2009
CCal Filename(s)	F90624A_16 & F90624B_16	Extracted	06/19/2009
Method Blank ID	BLANK-20384	Analyzed	06/25/2009 03:10

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.48	2,3,7,8-TCDF-13C	2.00	75
Total TCDF	ND	----	0.48	2,3,7,8-TCDD-13C	2.00	74
				1,2,3,7,8-PeCDF-13C	2.00	68
2,3,7,8-TCDD	ND	----	0.64	2,3,4,7,8-PeCDF-13C	2.00	68
Total TCDD	ND	----	0.64	1,2,3,7,8-PeCDD-13C	2.00	75
				1,2,3,4,7,8-HxCDF-13C	2.00	86
1,2,3,7,8-PeCDF	----	1.9	0.69 E	1,2,3,6,7,8-HxCDF-13C	2.00	76
2,3,4,7,8-PeCDF	ND	----	0.66	2,3,4,6,7,8-HxCDF-13C	2.00	78
Total PeCDF	2.1	----	0.68 J	1,2,3,7,8,9-HxCDF-13C	2.00	74
				1,2,3,4,7,8-HxCDD-13C	2.00	82
1,2,3,7,8-PeCDD	ND	----	0.42	1,2,3,6,7,8-HxCDD-13C	2.00	75
Total PeCDD	1.0	----	0.42 J	1,2,3,4,6,7,8-HpCDF-13C	2.00	45
				1,2,3,4,7,8,9-HpCDF-13C	2.00	29 P
1,2,3,4,7,8-HxCDF	ND	----	0.71	1,2,3,4,6,7,8-HpCDD-13C	2.00	35 P
1,2,3,6,7,8-HxCDF	ND	----	0.71	OCDD-13C	4.00	20 P
2,3,4,6,7,8-HxCDF	ND	----	0.62			
1,2,3,7,8,9-HxCDF	ND	----	0.72	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	7.1	----	0.69	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	0.64	2,3,7,8-TCDD-37Cl4	0.20	80
1,2,3,6,7,8-HxCDD	ND	----	0.92			
1,2,3,7,8,9-HxCDD	ND	----	0.61			
Total HxCDD	3.2	----	0.73 J			
1,2,3,4,6,7,8-HpCDF	3.5	----	0.68 J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.80	Equivalence: 1.1 ng/Kg		
Total HpCDF	9.9	----	0.74	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	13.0	----	1.60			
Total HpCDD	25.0	----	1.60			
OCDF	10.0	----	4.80			
OCDD	95.0	----	4.30			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
EMPC = Estimated Maximum Possible Concentration  
RL = Reporting Limit.

ND = Not Detected  
NA = Not Applicable  
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.  
J = Value below calibration range  
P = Recovery outside target range  
E = PCDE Interference

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### Method 8290 Sample Analysis Results

Client - Pioneer Technologies Corporation

Client's Sample ID	MW24S-061209-1-2.5		
Lab Sample ID	1097191007		
Filename	F90624B_13		
Injected By	BAL		
Total Amount Extracted	10.5 g	Matrix	Soil
% Moisture	7.8	Dilution	NA
Dry Weight Extracted	9.69 g	Collected	06/12/2009
ICAL ID	F90501	Received	06/13/2009
CCal Filename(s)	F90624A_16 & F90624B_16	Extracted	06/19/2009
Method Blank ID	BLANK-20384	Analyzed	06/25/2009 03:58

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.48	2,3,7,8-TCDF-13C	2.00	66
Total TCDF	ND	----	0.48	2,3,7,8-TCDD-13C	2.00	67
				1,2,3,7,8-PeCDF-13C	2.00	66
2,3,7,8-TCDD	ND	----	0.33	2,3,4,7,8-PeCDF-13C	2.00	68
Total TCDD	ND	----	0.33	1,2,3,7,8-PeCDD-13C	2.00	72
				1,2,3,4,7,8-HxCDF-13C	2.00	70
1,2,3,7,8-PeCDF	ND	----	0.42	1,2,3,6,7,8-HxCDF-13C	2.00	60
2,3,4,7,8-PeCDF	ND	----	0.36	2,3,4,6,7,8-HxCDF-13C	2.00	65
Total PeCDF	1.40	----	0.39 J	1,2,3,7,8,9-HxCDF-13C	2.00	66
				1,2,3,4,7,8-HxCDD-13C	2.00	64
1,2,3,7,8-PeCDD	ND	----	0.36	1,2,3,6,7,8-HxCDD-13C	2.00	64
Total PeCDD	ND	----	0.36	1,2,3,4,6,7,8-HpCDF-13C	2.00	48
				1,2,3,4,7,8,9-HpCDF-13C	2.00	43
1,2,3,4,7,8-HxCDF	ND	----	0.46	1,2,3,4,6,7,8-HpCDD-13C	2.00	42
1,2,3,6,7,8-HxCDF	ND	----	0.47	OCDD-13C	4.00	26 P
2,3,4,6,7,8-HxCDF	ND	----	0.43			
1,2,3,7,8,9-HxCDF	ND	----	0.55	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	3.00	----	0.48 J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	0.50	2,3,7,8-TCDD-37Cl4	0.20	76
1,2,3,6,7,8-HxCDD	1.10	----	0.67 J			
1,2,3,7,8,9-HxCDD	0.68	----	0.49 J			
Total HxCDD	4.80	----	0.55 J			
1,2,3,4,6,7,8-HpCDF	5.00	----	0.68 J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.69	Equivalence: 1.2 ng/Kg		
Total HpCDF	5.00	----	0.68 J	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	30.00	----	0.94			
Total HpCDD	76.00	----	0.94			
OCDF	11.00	----	2.80			
OCDD	280.00	----	2.30			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
EMPC = Estimated Maximum Possible Concentration  
RL = Reporting Limit.

ND = Not Detected  
NA = Not Applicable  
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.  
J = Value below calibration range  
P = Recovery outside target range

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### Method 8290 Sample Analysis Results

Client - Pioneer Technologies Corporation

Client's Sample ID	MW24S-061209-3-4.5		
Lab Sample ID	1097191008		
Filename	F90624B_14		
Injected By	BAL		
Total Amount Extracted	10.9 g	Matrix	Soil
% Moisture	7.6	Dilution	NA
Dry Weight Extracted	10.1 g	Collected	06/12/2009
ICAL ID	F90501	Received	06/13/2009
CCal Filename(s)	F90624A_16 & F90624B_16	Extracted	06/19/2009
Method Blank ID	BLANK-20384	Analyzed	06/25/2009 04:46

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	2.00	----	0.27	2,3,7,8-TCDF-13C	2.00	79
Total TCDF	19.00	----	0.27	2,3,7,8-TCDD-13C	2.00	62
				1,2,3,7,8-PeCDF-13C	2.00	77
2,3,7,8-TCDD	----	0.47	0.13 I	2,3,4,7,8-PeCDF-13C	2.00	77
Total TCDD	24.00	----	0.13	1,2,3,7,8-PeCDD-13C	2.00	85
				1,2,3,4,7,8-HxCDF-13C	2.00	78
1,2,3,7,8-PeCDF	----	0.70	0.31 I	1,2,3,6,7,8-HxCDF-13C	2.00	66
2,3,4,7,8-PeCDF	2.50	----	0.24 J	2,3,4,6,7,8-HxCDF-13C	2.00	71
Total PeCDF	20.00	----	0.27	1,2,3,7,8,9-HxCDF-13C	2.00	68
				1,2,3,4,7,8-HxCDD-13C	2.00	72
1,2,3,7,8-PeCDD	2.30	----	0.28 J	1,2,3,6,7,8-HxCDD-13C	2.00	68
Total PeCDD	30.00	----	0.28	1,2,3,4,6,7,8-HpCDF-13C	2.00	48
				1,2,3,4,7,8,9-HpCDF-13C	2.00	36 P
1,2,3,4,7,8-HxCDF	----	1.40	0.30 I	1,2,3,4,6,7,8-HpCDD-13C	2.00	42
1,2,3,6,7,8-HxCDF	2.00	----	0.37 J	OCDD-13C	4.00	23 P
2,3,4,6,7,8-HxCDF	2.10	----	0.34 J			
1,2,3,7,8,9-HxCDF	0.48	----	0.43 J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	17.00	----	0.36	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.70	----	0.80 J	2,3,7,8-TCDD-37Cl4	0.20	75
1,2,3,6,7,8-HxCDD	4.80	----	0.40 J			
1,2,3,7,8,9-HxCDD	3.40	----	0.43 J			
Total HxCDD	58.00	----	0.54			
1,2,3,4,6,7,8-HpCDF	25.00	----	0.66	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	1.70	----	1.10 J	Equivalence: 6.1 ng/Kg		
Total HpCDF	78.00	----	0.86	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	83.00	----	0.84			
Total HpCDD	150.00	----	0.84			
OCDF	110.00	----	1.50			
OCDD	610.00	----	1.70			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
EMPC = Estimated Maximum Possible Concentration  
RL = Reporting Limit.

ND = Not Detected  
NA = Not Applicable  
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.  
J = Value below calibration range  
P = Recovery outside target range  
I = Interference present

## REPORT OF LABORATORY ANALYSIS

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### Method 8290 Sample Analysis Results

Client - Pioneer Technologies Corporation

Client's Sample ID	MW24S-061209-6.5-8		
Lab Sample ID	1097191009		
Filename	F90630B_10		
Injected By	SMT		
Total Amount Extracted	20.8 g	Matrix	Soil
% Moisture	77.0	Dilution	NA
Dry Weight Extracted	4.78 g	Collected	06/12/2009
ICAL ID	F90501	Received	06/13/2009
CCal Filename(s)	F90630A_14 & F90630B_16	Extracted	06/19/2009
Method Blank ID	BLANK-20384	Analyzed	06/30/2009 22:14

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	210	----	1.2	2,3,7,8-TCDF-13C	2.00	85
Total TCDF	2800	----	1.2	2,3,7,8-TCDD-13C	2.00	78
				1,2,3,7,8-PeCDF-13C	2.00	64
2,3,7,8-TCDD	76	----	1.4	2,3,4,7,8-PeCDF-13C	2.00	59
Total TCDD	5700	----	1.4	1,2,3,7,8-PeCDD-13C	2.00	58
				1,2,3,4,7,8-HxCDF-13C	2.00	111
1,2,3,7,8-PeCDF	120	----	1.4	1,2,3,6,7,8-HxCDF-13C	2.00	104
2,3,4,7,8-PeCDF	360	----	1.3	2,3,4,6,7,8-HxCDF-13C	2.00	94
Total PeCDF	2200	----	1.3	1,2,3,7,8,9-HxCDF-13C	2.00	81
				1,2,3,4,7,8-HxCDD-13C	2.00	74
1,2,3,7,8-PeCDD	390	----	2.2	1,2,3,6,7,8-HxCDD-13C	2.00	105
Total PeCDD	6500	----	2.2	1,2,3,4,6,7,8-HpCDF-13C	2.00	40
				1,2,3,4,7,8,9-HpCDF-13C	2.00	33 P
1,2,3,4,7,8-HxCDF	430	----	4.1	1,2,3,4,6,7,8-HpCDD-13C	2.00	33 P
1,2,3,6,7,8-HxCDF	----	2000	3.4 E	OCDD-13C	4.00	25 P
2,3,4,6,7,8-HxCDF	250	----	4.0			
1,2,3,7,8,9-HxCDF	120	----	4.1	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	1100	----	3.9	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	260	----	3.0	2,3,7,8-TCDD-37Cl4	0.20	81
1,2,3,6,7,8-HxCDD	550	----	2.4			
1,2,3,7,8,9-HxCDD	400	----	5.7			
Total HxCDD	8700	----	3.7			
1,2,3,4,6,7,8-HpCDF	2000	----	16.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	190	----	20.0	Equivalence: 980 ng/Kg		
Total HpCDF	7800	----	18.0	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	13000	----	24.0			
Total HpCDD	23000	----	24.0			
OCDF	7400	----	10.0			
OCDD	85000	----	15.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
EMPC = Estimated Maximum Possible Concentration  
RL = Reporting Limit.

ND = Not Detected  
NA = Not Applicable  
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.  
P = Recovery outside target range  
E = PCDE Interference

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### Method 8290 Sample Analysis Results

Client - Pioneer Technologies Corporation

Client's Sample ID	MW24S-061209-9-10		
Lab Sample ID	1097191010		
Filename	F90630B_09		
Injected By	SMT		
Total Amount Extracted	19.9 g	Matrix	Soil
% Moisture	76.0	Dilution	NA
Dry Weight Extracted	4.77 g	Collected	06/12/2009
ICAL ID	F90501	Received	06/13/2009
CCal Filename(s)	F90630A_14 & F90630B_16	Extracted	06/19/2009
Method Blank ID	BLANK-20384	Analyzed	06/30/2009 21:21

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	32.0	----	1.2	2,3,7,8-TCDF-13C	2.00	83
Total TCDF	590.0	----	1.2	2,3,7,8-TCDD-13C	2.00	75
				1,2,3,7,8-PeCDF-13C	2.00	61
2,3,7,8-TCDD	10.0	----	1.2	2,3,4,7,8-PeCDF-13C	2.00	60
Total TCDD	700.0	----	1.2	1,2,3,7,8-PeCDD-13C	2.00	63
				1,2,3,4,7,8-HxCDF-13C	2.00	82
1,2,3,7,8-PeCDF	25.0	----	1.5	1,2,3,6,7,8-HxCDF-13C	2.00	89
2,3,4,7,8-PeCDF	31.0	----	1.2	2,3,4,6,7,8-HxCDF-13C	2.00	82
Total PeCDF	240.0	----	1.3	1,2,3,7,8,9-HxCDF-13C	2.00	75
				1,2,3,4,7,8-HxCDD-13C	2.00	65
1,2,3,7,8-PeCDD	39.0	----	1.3	1,2,3,6,7,8-HxCDD-13C	2.00	92
Total PeCDD	730.0	----	1.3	1,2,3,4,6,7,8-HpCDF-13C	2.00	48
				1,2,3,4,7,8,9-HpCDF-13C	2.00	38 P
1,2,3,4,7,8-HxCDF	17.0	----	1.7	1,2,3,4,6,7,8-HpCDD-13C	2.00	40
1,2,3,6,7,8-HxCDF	15.0	----	1.5	OCDD-13C	4.00	24 P
2,3,4,6,7,8-HxCDF	16.0	----	1.8			
1,2,3,7,8,9-HxCDF	6.2	----	2.4 J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	180.0	----	1.8	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	20.0	----	2.9	2,3,7,8-TCDD-37Cl4	0.20	77
1,2,3,6,7,8-HxCDD	31.0	----	3.0			
1,2,3,7,8,9-HxCDD	28.0	----	2.7			
Total HxCDD	680.0	----	2.8			
1,2,3,4,6,7,8-HpCDF	70.0	----	3.8	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	8.6	----	6.3 J	Equivalence: 80 ng/Kg		
Total HpCDF	190.0	----	5.1	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	240.0	----	7.4			
Total HpCDD	450.0	----	7.4			
OCDF	170.0	----	12.0			
OCDD	780.0	----	11.0			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
EMPC = Estimated Maximum Possible Concentration  
RL = Reporting Limit.

ND = Not Detected  
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NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.  
J = Value below calibration range  
P = Recovery outside target range

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### Method 8290 Sample Analysis Results

Client - Pioneer Technologies Corporation

Client's Sample ID	MW22S-061209-0.5-2		
Lab Sample ID	1097191016		
Filename	F90630A_06		
Injected By	AE		
Total Amount Extracted	12.5 g	Matrix	Soil
% Moisture	13.7	Dilution	NA
Dry Weight Extracted	10.8 g	Collected	06/12/2009
ICAL ID	F90501	Received	06/13/2009
CCal Filename(s)	F90629A_16 & F90630A_14	Extracted	06/19/2009
Method Blank ID	BLANK-20384	Analyzed	06/30/2009 04:53

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	---	0.49	0.31 I	2,3,7,8-TCDF-13C	2.00	73
Total TCDF	2.30	---	0.31	2,3,7,8-TCDD-13C	2.00	67
				1,2,3,7,8-PeCDF-13C	2.00	68
2,3,7,8-TCDD	ND	---	0.23	2,3,4,7,8-PeCDF-13C	2.00	70
Total TCDD	3.20	---	0.23	1,2,3,7,8-PeCDD-13C	2.00	76
				1,2,3,4,7,8-HxCDF-13C	2.00	77
1,2,3,7,8-PeCDF	ND	---	0.40	1,2,3,6,7,8-HxCDF-13C	2.00	65
2,3,4,7,8-PeCDF	---	0.41	0.38 I	2,3,4,6,7,8-HxCDF-13C	2.00	70
Total PeCDF	5.00	---	0.39	1,2,3,7,8,9-HxCDF-13C	2.00	71
				1,2,3,4,7,8-HxCDD-13C	2.00	76
1,2,3,7,8-PeCDD	0.55	---	0.35 J	1,2,3,6,7,8-HxCDD-13C	2.00	69
Total PeCDD	1.40	---	0.35 J	1,2,3,4,6,7,8-HpCDF-13C	2.00	58
				1,2,3,4,7,8,9-HpCDF-13C	2.00	53
1,2,3,4,7,8-HxCDF	1.20	---	0.36 J	1,2,3,4,6,7,8-HpCDD-13C	2.00	55
1,2,3,6,7,8-HxCDF	0.91	---	0.34 J	OCDD-13C	4.00	41
2,3,4,6,7,8-HxCDF	0.96	---	0.34 J			
1,2,3,7,8,9-HxCDF	ND	---	0.44	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	13.00	---	0.37	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	---	0.58	0.47 I	2,3,7,8-TCDD-37Cl4	0.20	75
1,2,3,6,7,8-HxCDD	3.00	---	0.55 J			
1,2,3,7,8,9-HxCDD	1.80	---	0.55 J			
Total HxCDD	20.00	---	0.52			
1,2,3,4,6,7,8-HpCDF	17.00	---	0.36	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	0.85	---	0.61 J	Equivalence: 2.6 ng/Kg		
Total HpCDF	18.00	---	0.49	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	64.00	---	0.60			
Total HpCDD	120.00	---	0.60			
OCDF	55.00	---	1.50			
OCDD	540.00	---	1.20			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
EMPC = Estimated Maximum Possible Concentration  
RL = Reporting Limit.

ND = Not Detected  
NA = Not Applicable  
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.  
J = Value below calibration range  
I = Interference present

## REPORT OF LABORATORY ANALYSIS

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### Method 8290 Sample Analysis Results

Client - Pioneer Technologies Corporation

Client's Sample ID	MW22S-061209-2-4		
Lab Sample ID	1097191017		
Filename	F90630A_07		
Injected By	AE		
Total Amount Extracted	12.5 g	Matrix	Soil
% Moisture	12.0	Dilution	NA
Dry Weight Extracted	11.0 g	Collected	06/12/2009
ICAL ID	F90501	Received	06/13/2009
CCal Filename(s)	F90629A_16 & F90630A_14	Extracted	06/19/2009
Method Blank ID	BLANK-20384	Analyzed	06/30/2009 05:43

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.30	----	0.16 J	2,3,7,8-TCDF-13C	2.00	66
Total TCDF	0.30	----	0.16 J	2,3,7,8-TCDD-13C	2.00	68
				1,2,3,7,8-PeCDF-13C	2.00	70
2,3,7,8-TCDD	ND	----	0.15	2,3,4,7,8-PeCDF-13C	2.00	72
Total TCDD	ND	----	0.15	1,2,3,7,8-PeCDD-13C	2.00	80
				1,2,3,4,7,8-HxCDF-13C	2.00	74
1,2,3,7,8-PeCDF	ND	----	0.15	1,2,3,6,7,8-HxCDF-13C	2.00	62
2,3,4,7,8-PeCDF	ND	----	0.14	2,3,4,6,7,8-HxCDF-13C	2.00	67
Total PeCDF	0.21	----	0.15 J	1,2,3,7,8,9-HxCDF-13C	2.00	70
				1,2,3,4,7,8-HxCDD-13C	2.00	74
1,2,3,7,8-PeCDD	ND	----	0.16	1,2,3,6,7,8-HxCDD-13C	2.00	67
Total PeCDD	ND	----	0.16	1,2,3,4,6,7,8-HpCDF-13C	2.00	65
				1,2,3,4,7,8,9-HpCDF-13C	2.00	62
1,2,3,4,7,8-HxCDF	ND	----	0.17	1,2,3,4,6,7,8-HpCDD-13C	2.00	63
1,2,3,6,7,8-HxCDF	ND	----	0.22	OCDD-13C	4.00	48
2,3,4,6,7,8-HxCDF	ND	----	0.15			
1,2,3,7,8,9-HxCDF	ND	----	0.19	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.37	----	0.18 J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	0.19	2,3,7,8-TCDD-37Cl4	0.20	81
1,2,3,6,7,8-HxCDD	ND	----	0.18			
1,2,3,7,8,9-HxCDD	ND	----	0.25			
Total HxCDD	ND	----	0.21			
1,2,3,4,6,7,8-HpCDF	0.37	----	0.26 J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.31	Equivalence: 0.30 ng/Kg		
Total HpCDF	1.00	----	0.28 J	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	1.40	----	0.36 J			
Total HpCDD	1.40	----	0.36 J			
OCDF	1.10	----	0.69 J			
OCDD	9.60	----	0.65			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
EMPC = Estimated Maximum Possible Concentration  
RL = Reporting Limit.

ND = Not Detected  
NA = Not Applicable  
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.  
J = Value below calibration range

## REPORT OF LABORATORY ANALYSIS

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### Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-20384	Matrix	Solid
Filename	F90624A_04	Dilution	NA
Total Amount Extracted	10.2 g	Extracted	06/19/2009
ICAL ID	F90501	Analyzed	06/24/2009 07:58
CCal Filename(s)	F90623B_15 & F90624A_16	Injected By	BAL

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.130	2,3,7,8-TCDF-13C	2.00	72
Total TCDF	ND	----	0.130	2,3,7,8-TCDD-13C	2.00	70
				1,2,3,7,8-PeCDF-13C	2.00	76
2,3,7,8-TCDD	ND	----	0.170	2,3,4,7,8-PeCDF-13C	2.00	81
Total TCDD	ND	----	0.170	1,2,3,7,8-PeCDD-13C	2.00	87
				1,2,3,4,7,8-HxCDF-13C	2.00	74
1,2,3,7,8-PeCDF	ND	----	0.093	1,2,3,6,7,8-HxCDF-13C	2.00	65
2,3,4,7,8-PeCDF	ND	----	0.067	2,3,4,6,7,8-HxCDF-13C	2.00	69
Total PeCDF	ND	----	0.080	1,2,3,7,8,9-HxCDF-13C	2.00	73
				1,2,3,4,7,8-HxCDD-13C	2.00	75
1,2,3,7,8-PeCDD	ND	----	0.120	1,2,3,6,7,8-HxCDD-13C	2.00	69
Total PeCDD	ND	----	0.120	1,2,3,4,6,7,8-HpCDF-13C	2.00	67
				1,2,3,4,7,8,9-HpCDF-13C	2.00	69
1,2,3,4,7,8-HxCDF	ND	----	0.079	1,2,3,4,6,7,8-HpCDD-13C	2.00	69
1,2,3,6,7,8-HxCDF	ND	----	0.082	OCDD-13C	4.00	60
2,3,4,6,7,8-HxCDF	ND	----	0.081			
1,2,3,7,8,9-HxCDF	ND	----	0.097	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	0.085	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	0.140	2,3,7,8-TCDD-37Cl4	0.20	78
1,2,3,6,7,8-HxCDD	ND	----	0.130			
1,2,3,7,8,9-HxCDD	ND	----	0.130			
Total HxCDD	ND	----	0.130			
1,2,3,4,6,7,8-HpCDF	ND	----	0.070	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.130	Equivalence: 0.20 ng/Kg		
Total HpCDF	ND	----	0.100	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	0.13	----	0.098 J			
Total HpCDD	0.13	----	0.098 J			
OCDF	----	0.16	0.110 I			
OCDD	0.89	----	0.230 J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
EMPC = Estimated Maximum Possible Concentration  
RL = Reporting Limit

Results reported on a dry weight basis and are valid to no more than 2 significant figures.  
J = Value below calibration range  
I = Interference present

## REPORT OF LABORATORY ANALYSIS

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**Method 8290 Laboratory Control Spike Results**

Lab Sample ID	LCS-20385	Matrix	Solid
Filename	F90624A_01	Dilution	NA
Total Amount Extracted	10.2 g	Extracted	06/19/2009
ICAL ID	F90501	Analyzed	06/24/2009 05:34
CCal Filename(s)	F90623B_15 & F90624A_16	Injected By	BAL
Method Blank ID	BLANK-20384		

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.21	104	2,3,7,8-TCDF-13C	2.00	68
Total TCDF				2,3,7,8-TCDD-13C	2.00	62
				1,2,3,7,8-PeCDF-13C	2.00	73
2,3,7,8-TCDD	0.20	0.22	110	2,3,4,7,8-PeCDF-13C	2.00	77
Total TCDD				1,2,3,7,8-PeCDD-13C	2.00	77
				1,2,3,4,7,8-HxCDF-13C	2.00	71
1,2,3,7,8-PeCDF	1.00	1.04	104	1,2,3,6,7,8-HxCDF-13C	2.00	61
2,3,4,7,8-PeCDF	1.00	1.01	101	2,3,4,6,7,8-HxCDF-13C	2.00	67
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.00	71
				1,2,3,4,7,8-HxCDD-13C	2.00	72
1,2,3,7,8-PeCDD	1.00	0.89	89	1,2,3,6,7,8-HxCDD-13C	2.00	65
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.00	65
				1,2,3,4,7,8,9-HpCDF-13C	2.00	68
1,2,3,4,7,8-HxCDF	1.00	0.98	98	1,2,3,4,6,7,8-HpCDD-13C	2.00	64
1,2,3,6,7,8-HxCDF	1.00	1.04	104	OCDD-13C	4.00	59
2,3,4,6,7,8-HxCDF	1.00	1.02	102			
1,2,3,7,8,9-HxCDF	1.00	1.02	102	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.02	102	2,3,7,8-TCDD-37Cl4	0.20	68
1,2,3,6,7,8-HxCDD	1.00	1.04	104			
1,2,3,7,8,9-HxCDD	1.00	1.05	105			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.00	1.06	106			
1,2,3,4,7,8,9-HpCDF	1.00	1.01	101			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.00	1.04	104			
Total HpCDD						
OCDF	2.00	2.29	115			
OCDD	2.00	2.20	110			

Qs = Quantity Spiked  
Qm = Quantity Measured  
Rec. = Recovery (Expressed as Percent)  
P = Recovery outside of target range  
X = Background subtracted value

Y = RF averaging used in calculations  
Nn = Value obtained from additional analysis  
NA = Not Applicable  
\* = See Discussion

**REPORT OF LABORATORY ANALYSIS**

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# **Attachment B**

**Post-Excavation Stockpile Sample Results**

**Table 1: Laboratory Analysis Overview for Disposal Stockpiles (October 2017 Sampling Event)**

Excavation Name	Sample Name	Laboratory Analyses Performed				
		Lead (TCLP Method 1311)	Total Metals (EPA Method 6020A)	TPH-G (Method NWTPH-Gx)	TPH-D and TPH-HO (Method NWTPH-Dx)	Dioxins/Furans (EPA Method 8290 D/F)
DP04	SO-DP04SP-02-100417	X	X	X	X	
DP06/SVP-2SO <sup>1</sup>	SO-DP06SP-02-100417		X	X	X	
MW24S	SO-MW24SSP-01-100417, SO-MW24SSP-01-100417-COMP <sup>2</sup>		X	X	X	X

**Notes:**

TPH-D: Total petroleum hydrocarbons as diesel

TPH-G: Total petroleum hydrocarbons as gasoline

TPH-HO: Total petroleum hydrocarbons as heavy oil or motor oil

1. Stockpile samples from excavation DP06/SVP-2SO have been referred to as DP06 for brevity in sample names sent to lab.

2. Samples SO-MW24SSP-01-100417 and SO-MW24SSP-01-100417-COMP are identical - just labeled differently when sent to two different laboratories.



**Table 2: Lab Results for Excavation DP04 - Disposal Stockpile**

Constituent	Result	Result Units	TCLP Limit (mg/L)	20x TCLP Limit (mg/kg)	Result Less Than 20x TCLP Limit? (Yes/No)
Arsenic	5.43	mg/kg	5	100	Yes
Barium	95.6	mg/kg	100	2000	Yes
Cadmium	1.34	mg/kg	1	20	Yes
Chromium	12.5	mg/kg	5	100	Yes
Lead	273	mg/kg	5	100	No
Mercury	<1	mg/kg	0.2	4	Yes
Selenium	<1	mg/kg	1	20	Yes
Silver	<1	mg/kg	5	100	Yes
Lead (TCLP, EPA Methods 6020A and 1311)	<1	mg/L	5	NA	NA
TPH-G	<5	mg/kg	NA	NA	NA
TPH-D	140 x	mg/kg	NA	NA	NA
TPH-HO	<250	mg/kg	NA	NA	NA

**Notes:**

x (laboratory qualifier): The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

**Table 3: Lab Results for Excavation DP06/SVP-2SO - Disposal Stockpile**

Constituent	Result	Result Units	TCLP Limit (mg/L)	20x TCLP Limit (mg/kg)	Result Less Than 20x TCLP Limit? (Yes/No)
Arsenic	2.43	mg/kg	5	100	Yes
Barium	51.2	mg/kg	100	2000	Yes
Cadmium	<1	mg/kg	1	20	Yes
Chromium	13.3	mg/kg	5	100	Yes
Lead	6.85	mg/kg	5	100	Yes
Mercury	<1	mg/kg	0.2	4	Yes
Selenium	<1	mg/kg	1	20	Yes
Silver	<1	mg/kg	5	100	Yes
TPH-G	<5	mg/kg	NA	NA	NA
TPH-D	<50	mg/kg	NA	NA	NA
TPH-HO	<250	mg/kg	NA	NA	NA

**Table 4: Lab Results for Excavation MW24S - Disposal Stockpile**

Constituent	Result	Result Units	TCLP Limit (mg/L)	20x TCLP Limit (mg/kg)	Result Less Than 20x TCLP Limit? (Yes/No)
Arsenic	9.95	mg/kg	5	100	Yes
Barium	87.8	mg/kg	100	2000	Yes
Cadmium	<2	mg/kg	1	20	Yes
Chromium	17.1	mg/kg	5	100	Yes
Lead	44.4	mg/kg	5	100	Yes
Mercury	<2	mg/kg	0.2	4	Yes
Selenium	<2	mg/kg	1	20	Yes
Silver	<2	mg/kg	5	100	Yes
TPH-G	<5	mg/kg	NA	NA	NA
TPH-D	350 x	mg/kg	NA	NA	NA
TPH-HO	2700	mg/kg	NA	NA	NA
Dioxins/Furans (2005 WHO TEQ Value)	124	pg/g	NA	NA	NA

**Notes:**

x (laboratory qualifier): The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Samples SO-MW24SSP-01-100417 and SO-MW24SSP-01-100417-COMP are identical - just labeled differently when sent to two different laboratories (applies when looking at analytical data from two separate lab reports).

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Arina Podnozova, B.S.  
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October 16, 2017

Levi Fernandes, Project Manager  
Pioneer  
5205 Corporate Ctr. Ct. SE, Ste. A  
Olympia, WA 98503

Dear Mr Fernandes:

Included are the results from the testing of material submitted on October 6, 2017 from the Port of Olympia East Bay, F&BI 710090 project. There are 24 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures

c: mcphersonh@uspioneer.com  
NAA1016R.DOC

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 6, 2017 by Friedman & Bruya, Inc. from the Pioneer Port of Olympia East Bay, F&BI 710090 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Pioneer</u>
710090 -01	SO-DP04SP-02-100417
710090 -02	SO-DP04SP-1A-100417
710090 -03	SO-DP04SP-1B-100417
710090 -04	SO-DP04SP-1C-100417
710090 -05	SO-DP04SP-1C-100417-(01)
710090 -06	SO-DP06SP-02-100417
710090 -07	SO-DP06SP-1A-100417
710090 -08	SO-DP06SP-1B-100417
710090 -09	SO-DP06SP-1C-100417
710090 -10	SO-MW24SSP-01-100417

Silver in the 6020A matrix spike duplicate failed the acceptance criteria. The laboratory control sample passed the acceptance criteria, therefore the results were due to matrix effect.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17  
Date Received: 10/06/17  
Project: Port of Olympia East Bay, F&BI 710090  
Date Extracted: 10/06/17  
Date Analyzed: 10/06/17

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD NWTPH-Gx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
SO-DP04SP-02-100417 710090-01	<5	73
SO-DP06SP-02-100417 710090-06	<5	103
SO-DP06SP-1A-100417 710090-07	<5	99
SO-DP06SP-1B-100417 710090-08	<5	100
SO-DP06SP-1C-100417 710090-09	<5	105
SO-MW24SSP-01-100417 710090-10	<5	86
Method Blank 07-2219 MB	<5	86

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17  
Date Received: 10/06/17  
Project: Port of Olympia East Bay, F&BI 710090  
Date Extracted: 10/06/17  
Date Analyzed: 10/06/17

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 56-165)
SO-DP04SP-02-100417 710090-01	140 x	<250	99
SO-DP06SP-02-100417 710090-06	<50	<250	101
SO-MW24SSP-01-100417 710090-10	350 x	2,700	101
Method Blank 07-2263 MB	<50	<250	102

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SP-02-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-01
Date Analyzed:	10/09/17	Data File:	710090-01.088
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.43
Barium	95.6
Cadmium	1.34
Chromium	12.5
Lead	252 ve
Mercury	<1
Selenium	<1
Silver	<1



FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SP-02-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-01 x5
Date Analyzed:	10/10/17	Data File:	710090-01 x5.039
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Lead	273
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SP-1A-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-02
Date Analyzed:	10/09/17	Data File:	710090-02.089
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.52
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SP-1B-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-03
Date Analyzed:	10/10/17	Data File:	710090-03.056
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.42
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SP-1C-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-04
Date Analyzed:	10/10/17	Data File:	710090-04.060
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.94
---------	------

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP04SP-1C-100417-(01)	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-05
Date Analyzed:	10/10/17	Data File:	710090-05.061
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.50
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-DP06SP-02-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-06
Date Analyzed:	10/10/17	Data File:	710090-06.062
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.43
Barium	51.2
Cadmium	<1
Chromium	13.3
Lead	6.85
Mercury	<1
Selenium	<1
Silver	<1

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	SO-MW24SSP-01-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-10
Date Analyzed:	10/10/17	Data File:	710090-10.063
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	9.95
Barium	87.8
Cadmium	<2
Chromium	17.1
Lead	44.4
Mercury	<2
Selenium	<2
Silver	<2

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Pioneer
Date Received:	NA	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	I7-550 mb
Date Analyzed:	10/09/17	Data File:	I7-550 mb.072
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Barium	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1
Selenium	<1
Silver	<1



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SO-DP06SP-1A-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-07 1/5
Date Analyzed:	10/10/17	Data File:	101011.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	96	31	163
Benzo(a)anthracene-d12	104	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.018
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SO-DP06SP-1B-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-08 1/5
Date Analyzed:	10/10/17	Data File:	101009.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	100	31	163
Benzo(a)anthracene-d12	112	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SO-DP06SP-1C-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	710090-09 1/5
Date Analyzed:	10/10/17	Data File:	101010.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	97	31	163
Benzo(a)anthracene-d12	104	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.027
2-Methylnaphthalene	0.014
1-Methylnaphthalene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Pioneer
Date Received:	Not Applicable	Project:	Port of Olympia East Bay
Date Extracted:	10/09/17	Lab ID:	07-2257 mb 1/5
Date Analyzed:	10/09/17	Data File:	100909.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	87	31	163
Benzo(a)anthracene-d12	101	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis for TCLP Metals By EPA Method 6020A and 1311

Client ID:	SO-DP04SP-02-100417	Client:	Pioneer
Date Received:	10/06/17	Project:	Port of Olympia East Bay
Date Extracted:	10/12/17	Lab ID:	710090-01
Date Analyzed:	10/13/17	Data File:	710090-01.038
Matrix:	Soil/Solid	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP

Analyte:	Concentration mg/L (ppm)	TCLP Limit
Lead	<1	5.0

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Analysis for TCLP Metals By EPA Method 6020A and 1311

Client ID:	Method Blank	Client:	Pioneer
Date Received:	NA	Project:	Port of Olympia East Bay
Date Extracted:	10/12/17	Lab ID:	I7-564 mb
Date Analyzed:	10/13/17	Data File:	I7-564 mb.033
Matrix:	Soil/Solid	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP

Analyte:	Concentration mg/L (ppm)	TCLP Limit
Lead	<1	5.0

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17

Date Received: 10/06/17

Project: Port of Olympia East Bay, F&BI 710090

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TPH AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Laboratory Code: 710071-02 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	90	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17

Date Received: 10/06/17

Project: Port of Olympia East Bay, F&BI 710090

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 710098-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	850	89	93	63-146	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	96	79-144



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17

Date Received: 10/06/17

Project: Port of Olympia East Bay, F&BI 710090

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL METALS USING EPA METHOD 6020A**

Laboratory Code: 710076-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	1.92	94	91	75-125	3
Barium	mg/kg (ppm)	50	17.9	98	92	75-125	6
Cadmium	mg/kg (ppm)	10	<1	92	88	75-125	4
Chromium	mg/kg (ppm)	50	8.43	84	83	75-125	1
Lead	mg/kg (ppm)	50	2.80	88	83	75-125	6
Mercury	mg/kg (ppm)	5	<1	92	87	75-125	6
Selenium	mg/kg (ppm)	5	<1	82	79	75-125	4
Silver	mg/kg (ppm)	10	<1	77	74 vo	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	99	80-120
Barium	mg/kg (ppm)	50	103	80-120
Cadmium	mg/kg (ppm)	10	99	80-120
Chromium	mg/kg (ppm)	50	101	80-120
Lead	mg/kg (ppm)	50	100	80-120
Mercury	mg/kg (ppm)	5	102	80-120
Selenium	mg/kg (ppm)	5	94	80-120
Silver	mg/kg (ppm)	10	87	80-120

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17

Date Received: 10/06/17

Project: Port of Olympia East Bay, F&BI 710090

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL  
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: 710070-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	115	44-129
2-Methylnaphthalene	mg/kg (ppm)	0.17	<0.01	117	45-135
1-Methylnaphthalene	mg/kg (ppm)	0.17	<0.01	115	40-141

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	91	90	58-121	1
2-Methylnaphthalene	mg/kg (ppm)	0.17	94	89	58-123	5
1-Methylnaphthalene	mg/kg (ppm)	0.17	93	88	60-124	6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/16/17

Date Received: 10/06/17

Project: Port of Olympia East Bay, F&BI 710090

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF SOIL/SOLID SAMPLES  
FOR TCLP METALS USING  
EPA METHODS 6020A AND 1311**

Laboratory Code: 710094-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	mg/L (ppm)	1.0	<1	97	97	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/L (ppm)	1.0	99	80-120

**Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Chain of Custody Record

7100920

NE 10-06-17

CHOC Number: 01\_1\_1\_EG4\_18420\_05102017

BT3 / VS1

Send Results To:  
mchersonh@uspioneer.com, fernandesl@uspioneer.com

Site Contact:  
PIONEER  
Levi Fernandes  
Phone: 360-570-1700

Project: Port of Olympia, East Bay  
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Send Invoice To:  
PIONEER  
Levi Fernandes  
Phone: 3605701700

Laboratory Information:  
Friedman & Bruya, Inc.  
Eric Young  
Phone: 2062062066

Email: eyoung@friedmanandbruya.com

CHOC Variation: 0308.05  
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Sample Information

Special Lab Instructions Included ==>

Preservatives

<== Special Lab Instructions

Sample ID (Auto Generated)	Date (MM/DD/YYYY)	Time (0000 to 2400)	Sampler's Initials	Special Lab Instructions Included ==>			Analytes						Comments for Sample			
				Leachate	Filtered	MS/MSD	1311 - TCLP RORA & PL	6020A - Arsenic	6020A - RCRA Lead and Cadmium	8270D - 10/6 8270D Methylene	NWTPH-D - NWTPH-D	NWTPH-Gx - NWTPH-Gx				
SO-DP04SP-02-100417	10/04/2017	14:32	HM				X	X	X							
SO-DP04SP-1A-100417	10/04/2017	11:45	HM					X								
SO-DP04SP-1B-100417	10/04/2017	11:52	HM					X								
SO-DP04SP-1C-100417	10/04/2017	12:05	HM					X								
SO-DP04SP-02-100417 (01)	10/04/2017	12:05	HM					X								
SO-DP06SP-1A-100417	10/04/2017	14:00	HM						X							
SO-DP06SP-1A-100417	10/04/2017	12:21	HM						X							
SO-DP06SP-1B-100417	10/04/2017	12:31	HM						X							
SO-DP06SP-1C-100417	10/04/2017	12:40	HM						X							
SO-MW24SSP-01-100417	10/04/2017	15:10	HM						X							

Cooler (Yes/No):  
Cooler Temp:

Turnaround Time:  
5-day

Hazard Identification:

Sample Disposal:  
per lab protocol

None

None

None

None

QA/QC Requirements:  
Standard

Sampling Event Comments:

1. Relinquished By: (Sign and Print)  
Levi Fernandes

Date/Time: 10/16/17 6:05

1. Received By: (Sign and Print)  
S. O'Neil

Date/Time: 10/16/17 06:05

2. Relinquished By: (Sign and Print)

Date/Time:

3. Relinquished By: (Sign and Print)

Date/Time:

3. Received By: (Sign and Print)

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Lab Use Only:

Samples received at 2 °C

Stat Form: 01 - 07/24/2015



October 13, 2017

**FAL Project: 10975**

Mr. Levi Fernandes  
Pioneer Technologies Corporation  
52505 Corporate Center Court SE, Suite A  
Olympia, WA 98503

Dear Mr. Fernandes,

The following results are associated with Frontier Analytical Laboratory project **10975**. This corresponds to your **Port of Olympia – East Bay** project. One soil sample was received on 10/6/2017 in good condition. This sample was extracted and analyzed by EPA Method 8290 for tetra through octa chlorinated dibenzo dioxins and furans. The Toxic Equivalency (TEQ) for this sample has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs). The TEQ value is located in the upper right hand portion of each sample data sheet. A **RUSH** turnaround time of five business days was provided for project **10975**.

The following level I/II report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The attached results and electronic data deliverables (EDDs) are specifically for the sample referenced in this report only. These results meet all NELAP requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP Certificate number is **4041**. Frontier Analytical Laboratory's State of Washington Department of Ecology Certificate number is **C844**. This report and the associated EDD have been emailed to you. A hardcopy of this report will also be mailed to you as per your chain of custody request.

If you have any questions regarding project **10975**, please contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

A handwritten signature in black ink that reads "Bradley B. Silverbush".

Bradley B. Silverbush  
Director of Operations

## Frontier Analytical Laboratory

### Sample Tracking Log

FAL Project ID: 10975

Received on: 10/06/2017

Project Due: 10/13/2017 Storage: R3

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
10975-001-SA	1	Port of Olympia- East Bay	SO-MW24SSP-01-100417-COMP	EPA 8290 D/F	Soil	10/04/2017	03:10 pm	11/03/2017

FAL Sample ID	Notes
10975-001-SA	'Using Sample ID from COC for our tracking purposes. KC 10/6/17'

EPA Method 8290  
PCDD/F



FAL ID: 10975-001-MB  
Client ID: Method Blank  
Matrix: Soil  
Batch No: X4265

Date Extracted: 10-09-2017  
Date Received: NA  
Amount: 5.00 g


ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/g


Acquired: 10-10-2017  
2005 WHO TEQ: 0.0  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.193		-	0.0273				
1,2,3,7,8-PeCDD	ND	0.459		-	0.0570				
1,2,3,4,7,8-HxCDD	ND	0.636		-	0.0793				
1,2,3,6,7,8-HxCDD	ND	0.654		-	0.0940	Total TCDD	ND	0.193	
1,2,3,7,8,9-HxCDD	ND	0.595		-	0.0823	Total PeCDD	ND	0.459	
1,2,3,4,6,7,8-HpCDD	ND	0.691		-	0.0842	Total HxCDD	ND	0.654	
OCDD	ND	0.948		-	0.172	Total HpCDD	ND	0.691	
2,3,7,8-TCDF	ND	0.169		-	0.0269				
1,2,3,7,8-PeCDF	ND	0.420		-	0.0449				
2,3,4,7,8-PeCDF	ND	0.445		-	0.0468				
1,2,3,4,7,8-HxCDF	ND	0.316		-	0.0437				
1,2,3,6,7,8-HxCDF	ND	0.333		-	0.0417				
2,3,4,6,7,8-HxCDF	ND	0.335		-	0.0574				
1,2,3,7,8,9-HxCDF	ND	0.456		-	0.0657	Total TCDF	ND	0.169	
1,2,3,4,6,7,8-HpCDF	ND	0.332		-	0.0747	Total PeCDF	ND	0.445	
1,2,3,4,7,8,9-HpCDF	ND	0.443		-	0.0883	Total HxCDF	ND	0.456	
OCDF	ND	0.831		-	0.170	Total HpCDF	ND	0.443	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	89.2	40.0 - 135	
13C-1,2,3,7,8-PeCDD	95.9	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	96.0	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	91.1	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	102	40.0 - 135	
13C-OCDD	89.9	40.0 - 135	
13C-2,3,7,8-TCDF	85.0	40.0 - 135	
13C-1,2,3,7,8-PeCDF	84.1	40.0 - 135	
13C-2,3,4,7,8-PeCDF	88.0	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	103	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	95.6	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	101	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	107	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	110	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	123	40.0 - 135	
13C-OCDF	109	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	106	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 10/12/2017

Reviewed By:   
Date: 10/12/2017

000003 of 000008



EPA Method 8290  
PCDD/F



FAL ID: 10975-001-OPR  
Client ID: OPR  
Matrix: Soil  
Batch No: X4265

Date Extracted: 10-09-2017  
Date Received: NA  
Amount: 5.00 g


Ical: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: ng/ml

Acquired: 10-10-2017  
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	11.6	7.00 - 13.0	
1,2,3,7,8-PeCDD	59.0	35.0 - 65.0	
1,2,3,4,7,8-HxCDD	58.1	35.0 - 65.0	
1,2,3,6,7,8-HxCDD	56.4	35.0 - 65.0	
1,2,3,7,8,9-HxCDD	54.2	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDD	58.3	35.0 - 65.0	
OCDD	116	70.0 - 130	
2,3,7,8-TCDF	11.8	7.00 - 13.0	
1,2,3,7,8-PeCDF	59.6	35.0 - 65.0	
2,3,4,7,8-PeCDF	58.9	35.0 - 65.0	
1,2,3,4,7,8-HxCDF	56.9	35.0 - 65.0	
1,2,3,6,7,8-HxCDF	56.6	35.0 - 65.0	
2,3,4,6,7,8-HxCDF	57.6	35.0 - 65.0	
1,2,3,7,8,9-HxCDF	55.3	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	57.5	35.0 - 65.0	
1,2,3,4,7,8,9-HpCDF	57.6	35.0 - 65.0	
OCDF	114	70.0 - 130	
Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	71.9	40.0 - 135	
13C-1,2,3,7,8-PeCDD	70.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	74.7	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	75.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	69.6	40.0 - 135	
13C-OCDD	63.0	40.0 - 135	
13C-2,3,7,8-TCDF	70.6	40.0 - 135	
13C-1,2,3,7,8-PeCDF	70.1	40.0 - 135	
13C-2,3,4,7,8-PeCDF	69.9	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	87.0	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	84.1	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	80.9	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	80.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	74.9	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	85.5	40.0 - 135	
13C-OCDF	75.7	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	85.6	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 10/12/2017

Reviewed By:   
Date: 10/12/2017

EPA Method 8290  
PCDD/F



FAL ID: 10975-001-SA  
Client ID: SO-MW24SSP-01-100417-COMP  
Matrix: Soil  
Batch No: X4265

Date Extracted: 10-09-2017  
Date Received: 10-06-2017  
Amount: 5.03 g  
% Solids: 73.73


ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/g


Acquired: 10-10-2017  
2005 WHO TEQ: 124  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	11.3	-		11.3	0.0273				
1,2,3,7,8-PeCDD	39.4	-		39.4	0.0570				
1,2,3,4,7,8-HxCDD	40.7	-		4.07	0.0793				
1,2,3,6,7,8-HxCDD	89.6	-		8.96	0.0940	Total TCDD	701	-	
1,2,3,7,8,9-HxCDD	54.5	-		5.45	0.0823	Total PeCDD	826	-	
1,2,3,4,6,7,8-HpCDD	1490	-		14.9	0.0842	Total HxCDD	1120	-	
OCDD	11100	-		3.33	0.172	Total HpCDD	2560	-	
2,3,7,8-TCDF	27.0	-	F	2.70	0.0269				
1,2,3,7,8-PeCDF	27.1	-		0.813	0.0449				
2,3,4,7,8-PeCDF	52.5	-		15.8	0.0468				
1,2,3,4,7,8-HxCDF	48.7	-		4.87	0.0437				
1,2,3,6,7,8-HxCDF	32.0	-		3.20	0.0417				
2,3,4,6,7,8-HxCDF	39.0	-		3.90	0.0574				
1,2,3,7,8,9-HxCDF	11.3	-		1.13	0.0657	Total TCDF	479	-	D,M
1,2,3,4,6,7,8-HpCDF	313	-		3.13	0.0747	Total PeCDF	460	-	D,M
1,2,3,4,7,8,9-HpCDF	25.4	-		0.254	0.0883	Total HxCDF	553	-	D,M
OCDF	1110	-		0.333	0.170	Total HpCDF	1160	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	103	40.0 - 135	
13C-1,2,3,7,8-PeCDD	112	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	101	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	97.5	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	113	40.0 - 135	
13C-OCDD	114	40.0 - 135	
13C-2,3,7,8-TCDF	105	40.0 - 135	
13C-1,2,3,7,8-PeCDF	106	40.0 - 135	
13C-2,3,4,7,8-PeCDF	102	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	104	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	97.6	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	104	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	115	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	111	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	132	40.0 - 135	
13C-OCDF	125	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	126	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
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- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 10/12/2017

Reviewed By:   
Date: 10/12/2017



## Frontier Analytical Laboratory

### Sample Login Form

FAL Project ID: 10975


Client:	Pioneer Technologies Corporation
Client Project ID:	Port of Olympia- East Bay
Date Received:	10/06/2017
Time Received:	09:55 am
Received By:	KZ
Logged In By:	KC
# of Samples Received:	1
Duplicates:	1
Storage Location:	R3

Method of Delivery:	Fed-Ex
Tracking Number:	770428273798
Shipping Container Received Intact	Yes
Custody seals(s) present?	Yes
Custody seals(s) intact?	Yes
Sample Arrival Temperature (C)	0
Cooling Method	Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	No
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	Yes
pH Range of Aqueous Sample	N/A
Anomalies or additional comments:	

Chain of Custody Record

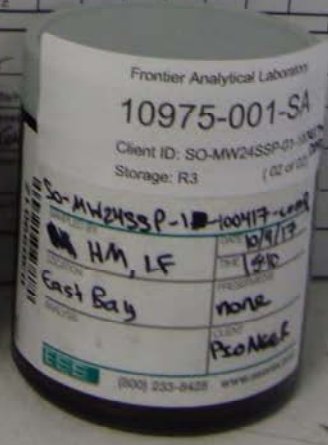
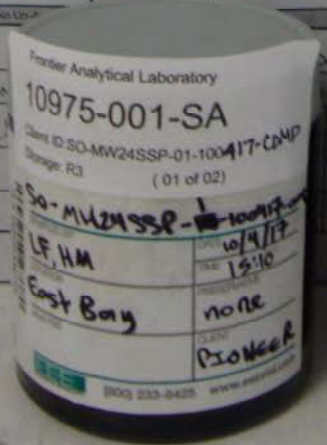
10975 / 00C

CHOC Number: 01\_1\_1\_E64\_4095\_05102017

<b>Send Results To:</b> mcphersonh@uspioneer.com, fernandesl@uspioneer.com	<b>Site Contact:</b> PIONEER Levi Fernandes Phone: 360-570-1700 Email: fernandesl@uspioneer.com	<b>PIONEER Technologies Corporation</b> 5295 Corporate Ct. Court SE, Suite A Lakely, WA 98503 Phone: 360.576.1700 Fax: 360.576.1777 www.uspioneer.com  CHOC Version: 0.99.05 Copyright © 2003 - 2015 PIONEER Technologies Corp. All Rights Reserved
<b>Send Invoice To:</b> PIONEER Levi Fernandes Phone: 3605701700 Email: fernandesl@uspioneer.com	<b>Laboratory Information:</b> Frontier Analytical Laboratory Bradley Silverbush Phone: 916-943-0900 Email: brads@frontieranalytical.com	

Sample Information		Special Lab Instructions Included				Analytes		Special Lab Instructions
Sample ID (Auto Generated)	Date (MM/DD/YYYY)	Time (0000 to 2400)	Sampler's Initials	Lab/State Filtered MS/MS/ED R230 - R250	X		Comments for Sample	
SO-MW24SSP-01-100417 - COMP	10/04/2017	15:10	HM		X			2 jars (just in case)
Use Sample ID from COC as per phone conversation w/ Levi, KC 10/6/17 Use Part of Olympia - East Bay as Project ID.								

Order (Type): Coster Temp.	Turnaround Time: 5-day	Hazard Identification:	Sample Disposal: per lab protocol	Lab Use Only:
These data are protected by Attorney/Client Privilege. No Use... BACB Requirements: standard Sending Cover Comments: Lab Request: Level II Report and EDD (PION)				
1. Relinquished By: (Sign and Print) <i>Bradley Silverbush</i>				Date/Time: 10-17-17 9:55
2. Relinquished By: (Sign and Print)				Date/Time:
3. Relinquished By: (Sign and Print)				Date/Time:







Wasco County Landfill  
 2550 Steele Road  
 The Dalles, OR 97058  
 PH: 541.296.4082  
 FX: 541.296.6449



WASTE CONNECTIONS INC.  
*Connects with the Future*

APPROVAL NUMBER: 2042-17-221
AMENDMENT NUMBER:
EXPIRATION DATE: 10/25/18
APPROVED BY: N. Chambers

**SPECIAL WASTE PERMIT**  
 (This Page for OFFICE USE ONLY)

GENERATOR: Port of Olympia, East Bay Parcel Cleanup, Between Olympia Ave. NE & State Ave NE, Olympia, WA 98501  
 CUSTOMER: Dietrich Trucking LLC, 7211-A NE 43rd Ave., Vancouver, WA 98661

**H. ENVIRONMENTAL COMPLIANCE SUPERVISOR DECISION**

1. <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable Reason Petroleum Contaminated Soil & Debris; Dioxins/Furans, Metals, TCLP Lead, TPH	
2. Name: Nichole Chambers, Environmental Specialist	3. Date: 10/25/17
4. Signature: N. Chambers	5. Phone: 360-566-6920

**I. INSTRUCTIONS/HANDLING PROCEDURES**

*This Section is to be completed by BOTH the Environmental Compliance Supervisor and the Facility Manager.*

1. Disposal Method(s): <input checked="" type="checkbox"/> Landfill <input type="checkbox"/> Solidification <input type="checkbox"/> Approved ADC <input type="checkbox"/> Other:
2. Review and approval of waste is based upon a submitted documentation from generator/customer, the Landfill Waste Acceptance Criteria, and any applicable State or Federal waste disposal regulations. Approval is granted subject to the enforcement of the following conditions. Failure to comply may result in rejection of the wastes. <ul style="list-style-type: none"> <li>A. Customer/Generator shall receive a copy of this sheet upon approval and shall conform to all instructions/limitations noted herein.</li> <li>B. Loads may be randomly inspected upon receipt at the landfill to ensure wastes conform to description on Application.</li> <li>C. This material must be properly contained, bagged, or covered prior to and during shipment and disposal.</li> </ul>

3. The conditions marked below apply to this waste stream.

**APPROVAL CONDITION(S):**

- CONDITIONAL APPROVAL:** This is a conditional approval/extension. Upon receipt of additional analyses, this approval may be extended.  
 SPECIFIC CONDITION:
- BLANKET APPROVAL:** The manifest accompanying each load of waste shall denote the specific waste generation address/location(s) for that load.

**WASTE CONDITION(S):**

- ABSORBENT MATERIALS:** Absorbent material (pads, booms, diapers, socks, soils, etc.) must not be supersaturated so as to release free liquids on handling. Wastes that would not pass a paint filter test must be solidified prior to placement in the landfill.
- ASBESTOS CONTAINING MATERIAL (ACM):**  Friable  Non-Friable

**FREE LIQUIDS/SLUDGE:**

**OTHER:**

**LANDFILL SPECIAL HANDLING PROCEDURES:**

- CARE UNLOADING:** Maintain integrity of container/packaging.
- DUST:** Materials may become airborne. Use appropriate control measures to prevent the material from becoming airborne.
- IRRITANT DUST:** Materials may be dusty and are likely to cause irritation to skin and/or eyes. Use appropriate dust control measures and PPE as needed to prevent airborne dust and/or employee exposure. See MSDS for additional information.
- ODOR:** Bury immediately upon arrival.
- SLUDGE:** Potential traction issue on work face.
- SPECIAL BURIAL REQUIREMENTS:** Immediately cover waste  MSW  Dirt prior to compaction.
- SURVEY REQUIREMENT:** Materials must be surveyed in or indicated on a grid.
- OTHER:**
- CALL LANDFILL:** Prior to disposal, contact landfill to arrange for delivery (Liquids, Totes, and Asbestos).

### Wasco County Landfill Soil Disposal - Weight Ticket Summary

Date Delivered to Landfill	Ticket Number	Soil Weight (tons)
10/27/2017	00234299	28.37
10/30/2017	00234494	30.29
10/30/2017	00234541	30.34
		89 (Total)





# Invoice

**Bill to:**

**IO Environmental**  
 14734 NE 95th Street  
 Redmond, WA 98052  
 11111111111111111111

**Remit To:**

**Dietrich Trucking LLC**  
 7211-A NE 43rd Ave  
 Vancouver, WA 98661  
[ardietrich@dietrichtrucking.com](mailto:ardietrich@dietrichtrucking.com)  
 (360) 892-3881

Cust #	Customer Ref	Invoice #	Invoice Date	Due Date	Disc Date	Terms
52363		164466	10/30/17	11/29/17		Net 30 Days

Mth/Trans	Line	Description	Contract	Truck-Trailer	Rate	TN	Amount
10/17 2,339	1	Cont Dirt 234494	17-6787-	8525-8919	36.00	30.290	1,090.44

**Notes:**

Total Sales Tax	1,090.44
Less Retainage	
<b>Total Due</b>	<b>1,090.44</b>

**ENTERED**  
 NOV 22 2017  
 BY: 040-099-01

**RECEIVED**  
 NOV 22 2017

5507 11/22/17 11/29/17

Wasco County Landfill  
WASCO COUNTY LANDFILL  
2550 Steele Road  
The Dalles, OR 97058

000814  
DIETRICH TRUCKING  
  
7211-ANE 43RD AVE  
VANCOUVER WA 98661

Site 01  
Ticket 00234494  
Date In 10/30/17  
Time In 08:51:39  
Date Out 10/30/17  
Time Out 09:09:29

*Loaded 10/27/17*

Marian K  
Origin WASH ST

Ref. OLYMPIA  
Grid

DESCRIPTION

Manual Gross Wt.	101920LB	Vehicle TRAIL	
Scale 7 Tare Wt.	41340LB	Roll-Off	
Net Wt.	60580LB	TON	30.29

PETR CONT SOIL - OUT per TON

PO # 2042-17-221  
NOTE  
DRIVER DIETRICH 8525

BY SIGNING THIS, I CERTIFY THAT THIS DISPOSAL MATERIAL  
ORIGINATED IN THE COUNTY/STATE AS STATED ABOVE. I ALSO  
CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THIS LOAD  
CONTAINS NO HAZARDOUS WASTE.

Signature \_\_\_\_\_



# Invoice

**Bill to:**

**IO Environmental**  
 14734 NE 95th Street  
 Redmond, WA 98052  
 6666666666666666

**Remit To:**

**Dietrich Trucking LLC**  
 7211-A NE 43rd Ave  
 Vancouver, WA 98661  
[ardietrich@dietrichtrucking.com](mailto:ardietrich@dietrichtrucking.com)  
 (360) 892-3881

Cust #	Customer Ref	Invoice #	Invoice Date	Due Date	Disc Date	Terms
52363		171863	10/27/17	11/26/17		Net 30 Days

Mth/Trans	Line	Description	Contract	Truck-Trailer	Rate	TN	Amount
10/17 2,340	1	Cont Dirt 234299	17-6787-	8538-8918	36.00	28.370	1,021.32

**Notes:**

Total Sales Tax	1,021.32
Less Retainage	
<b>Total Due</b>	<b>1,021.32</b>

**ENTERED**  
 NOV 22 2017  
 BY: 040-099-01

5507

KL 11/29/17

**RECEIVED**  
 NOV 22 2017

QB 11/22/17

Wasco County Landfill  
WASCO COUNTY LANDFILL  
2550 Steele Road  
The Dalles, OR 97058

000179  
DIETRICH TRUCKING, LLC  
  
7211-ANE 43RD AVE  
VANCOUVER WA 98661

Site 01  
Ticket 00234299  
Date In 10/27/17  
Time In 12:13:17  
Date Out 10/27/17  
Time Out 12:41:48

Weighmaster:Linda  
Origin WASH ST

Ref. OLYMPIA  
Grid

DESCRIPTION

Scale 3 Gross Wt.	100300LB	Vehicle TRAIL	
Scale 7 Tare Wt.	43560LB	Roll-Off	
Net Wt.	56740LB	TON	28.37

PETR CONT SOIL - OUT per TON

PO # 2042-17-221  
NOTE  
DRIVER DIETRICH 8538

BY SIGNING THIS, I CERTIFY THAT THIS DISPOSAL MATERIAL  
ORIGINATED IN THE COUNTY/STATE AS STATED ABOVE. I ALSO  
CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THIS LOAD  
CONTAINS NO HAZARDOUS WASTE.

Signature \_\_\_\_\_





Wasco County Landfill  
WASCO COUNTY LANDFILL  
2550 Steele Road  
The Dalles, OR 97058

000814  
DIETRICH TRUCKING  
  
7211-ANE 43RD AVE  
VANCOUVER WA 98661

Site 01  
Ticket 00234541  
Date In 10/30/17  
Time In 12:01:09  
Date Out 10/30/17  
Time Out 12:23:59

Marian K  
Origin WASH ST

Ref. 8538  
Grid

DESCRIPTION

Scale 3 Gross Wt.	104460LB	Vehicle TRAIL	
Scale 7 Tare Wt.	43780LB	Roll-Off	
Net Wt.	60680LB	TON	30.34

PETR CONT SOIL - OUT per TON

PO # 2042-17-221  
NOTE  
DRIVER DIETRICH 8538

BY SIGNING THIS, I CERTIFY THAT THIS DISPOSAL MATERIAL  
ORIGINATED IN THE COUNTY/STATE AS STATED ABOVE. I ALSO  
CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THIS LOAD  
CONTAINS NO HAZARDOUS WASTE.

Signature \_\_\_\_\_





# **Appendix K**

## **Water Sample Results / Sanitary Sewer Discharge Records**

### **Contents:**

- **LOTT Discharge Authorization Letter**
- **City of Olympia Sewer Discharge Record**
- **Pre-Discharge Water Quality Sampling Results**

August 15, 2017

Lacey  
Olympia  
Tumwater  
Thurston County

Rachael Jameson  
Port of Olympia  
606 Columbia St. NW Suite 300  
Olympia, WA 98501

Dear Ms. Jameson:

**SUBJECT: East Bay Parcels Clean Up Project Discharge Authorization Letter**

The LOTT Clean Water Alliance (LOTT) has received correspondence from the Port of Olympia (Permittee) requesting authorization to discharge groundwater and stormwater to the sanitary sewer resulting from soil remediation and precipitation at the East Bay Parcels Cleanup located between Jefferson St. and Olympia Ave, and State St. and Chestnut St. LOTT is granting the request, contingent upon the following conditions:

1. Discharge shall be to the sanitary sewer clean out located at 47°2'50.1" N 122°53'48.8"W, as determined by the City of Olympia. This discharge point is designated as Outfall 001.
2. All discharges to the sanitary sewer shall first pass through a treatment system designed to remove soil sediments and other settleable materials. A Baker Tank or similar equipment shall be provided to meet the above noted criteria.
3. No sediments contained in the excavation or the treatment system shall be allowed to enter the sanitary sewer. This includes during both discharging and treatment system-cleaning activities.
4. The discharge flow rate shall be controlled to facilitate pollutant removal in the treatment system, and to prevent surcharging or overwhelming the sanitary sewer. At no time shall the discharge exceed 25,000 gallons per day, averaged over a calendar month.
5. A flow meter shall be installed to measure the totalized flow. Wastewater utility rates shall be paid to the City in accordance with OMC 13.08.190 B (4) and OMC 4.24.010 B. Permittee shall establish an account with City Utility Billing staff (360) 753-8340 prior to connection to the sanitary sewer system.
6. Unless otherwise directed, discharge to the sanitary sewer is permitted 24 hours per day, 7 days per week for the duration of the project.
7. The Permittee shall provide the City and LOTT a minimum of 48 hours notice prior to initiating discharge to the sanitary sewer.
8. Prior to discharge, samples shall be collected and analyzed for the following parameters, and location(s) as indicated in Table 1. The results of the analysis shall be submitted to LOTT prior to discharge.

9. Samples shall be collected and analyzed for the following parameters, location(s) and frequencies as indicated in Table 1.

Sample Parameter	Sample Point	Sample Type	Sample Frequency	Discharge Limit
Arsenic	Outfall 001	Grab	Weekly*	0.2 mg/L
TCDD Equivalents	Outfall 001	Grab	Weekly*	No detectable amount
TPH Gasoline	Outfall 001	Grab	Weekly*	100 mg/L cumulative* <sup>1</sup>
Naphthalenes	Outfall 001	Grab	Weekly*	100 mg/L cumulative* <sup>1</sup>

\* Samples only need to be collected during weeks that discharge occurs. A week is defined as a calendar week.

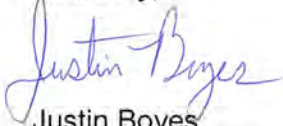
\*<sup>1</sup> The sum of TPH Gasoline and Naphthalenes shall not exceed the allowable discharge limit of 100 mg/L for Petroleum Products.

10. A monthly report shall be submitted to LOTT by the 15<sup>th</sup> of the following month that includes the laboratory analyses and total gallons discharged that month. If no discharge occurs, a report stating that no discharge occurred is required.
11. If the Permittee monitors any pollutant more frequently than required by this letter the results of such monitoring shall be submitted to LOTT within 30 days of sample collection.
12. Upon request, all laboratory results pertinent to the water quality discharged to the sanitary sewer system shall be provided to the City and/or LOTT within 24 hours.
13. All discharges to the sanitary sewer system shall be in accordance with OMC 12.20.
14. No sediments contained in the excavation or the treatment system shall be allowed to enter the sanitary sewer. This includes during both discharging and treatment system cleaning activities.
15. This discharge authorization is limited to discharges of treated groundwater and stormwater resulting from soil remediation and precipitation at the East Bay Parcels Cleanup Site. Separate authorization will be required for any subsequent discharges from this or any adjacent sites.
16. This discharge authorization shall expire on February 15, 2017, or upon completion of the project, or removal of onsite treatment equipment.
17. The issuance of this letter does not obviate the need for permits or authorizations that may be required from other LOTT Departments, as well as from federal, state and other local agencies with jurisdiction over this activity. It is the applicant's responsibility to coordinate with all such departments and other agencies in order to determine the need for, and obtain as may be required, permits or authorizations.

18. LOTT or the City of Olympia may amend or revoke this Discharge Authorization Letter for good cause including but not limited to violations of any pretreatment standard or requirement, or any terms of this Letter.

If you have any questions or require more information regarding this Discharge Authorization Letter, you may contact me at (360) 528-5728.

Sincerely,

A handwritten signature in blue ink that reads "Justin Boyes". The signature is written in a cursive style with a large initial "J".

Justin Boyes  
Environmental Program Manager

cc: Diane Utter, City of Olympia





CITY OF OLYMPIA  
ACCOUNTS RECEIVABLE  
PO BOX 7966  
OLYMPIA, WA 98507

DATE: 11/02/17

TO: IO ENVIRONMENTAL  
2840 ADAMS AVE STE 301  
SAN DIEGO, CA 92116

CHARGE	DATE	DESCRIPTION	REF-NUMBER	DUE DATE	TOTAL AMOUNT
	10/31/17	BEGINNING BALANCE			.00
SWRGN	11/02/17	LOCAL SEWER CONSUMPTION 1,279 CF DISCHARGED AT \$3.07 CCF			39.27
SWRGN	11/02/17	LOTT SEWER CONSUMPTION 1,279 CF DISCHARGED AT \$4.21 CCF			53.85

**ENTERED**  
NOV 09 2017  
BY: 040-099-01

*W*  
*11/10/17*

*11/07 2017*

*5710* PLEASE PAY FROM THIS STATEMENT  
*5767* NO INVOICES ARE SENT

CURRENT	Over 30	Over 60	Over 90
93.12			

DUE DATE: 12/04/17

*W*  
*11/10/17*

PAYMENT DUE: 93.12  
TOTAL DUE: \$93.12

PLEASE DETACH AND SEND THIS COPY WITH REMITTANCE

DATE: 11/02/17 DUE DATE: 12/04/17 NAME: IO ENVIRONMENTAL  
CUSTOMER NO: 10774/16690 TYPE: US - UTILITY SEWER SERVICES

REMIT AND MAKE CHECK PAYABLE TO:  
CITY OF OLYMPIA  
ACCOUNTS RECEIVABLE  
PO BOX 7966  
OLYMPIA WA 98507-7966

TOTAL DUE: \$93.12



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

October 20, 2017

Tony Bahnick  
IO Environmental & Infrastructure, Inc.  
14734 NE 95th Street  
Redmond, WA 98052

Re: Analytical Data for Project 040-099-1  
Laboratory Reference No. 1709-331

Dear Tony:

Enclosed are the analytical results and associated quality control data for samples submitted on September 27, 2017.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal stroke extending to the right.

David Baumeister  
Project Manager

Enclosures



OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody,  
and is intended only for the use of the individual or company to whom it is addressed.



Date of Report: October 20, 2017  
Samples Submitted: September 27, 2017  
Laboratory Reference: 1709-331  
Project: 040-099-1

### Case Narrative

Samples were collected on September 27, 2017 and received by the laboratory on September 27, 2017. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.





Date of Report: October 20, 2017  
 Samples Submitted: September 27, 2017  
 Laboratory Reference: 1709-331  
 Project: 040-099-1

**NWTPH-Gx**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>Client ID:</b>	<b>DW-092717-01</b>					
Laboratory ID:	09-331-01					
Gasoline	<b>ND</b>	400	NWTPH-Gx	9-27-17	9-27-17	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	82	61-118				



Date of Report: October 20, 2017  
 Samples Submitted: September 27, 2017  
 Laboratory Reference: 1709-331  
 Project: 040-099-1

**NWTPH-Gx  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0927W2					
Gasoline	<b>ND</b>	100	NWTPH-Gx	9-27-17	9-27-17	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
Fluorobenzene	92	61-118				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	09-320-05							
	ORIG	DUP						
Gasoline	<b>ND</b>	<b>ND</b>	NA	NA	NA	NA	NA	30
<i>Surrogate:</i>								
Fluorobenzene				90	93	61-118		



Date of Report: October 20, 2017  
 Samples Submitted: September 27, 2017  
 Laboratory Reference: 1709-331  
 Project: 040-099-1

### NWTPH-Dx

Matrix: Water  
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DW-092717-01</b>					
Laboratory ID:	09-331-01					
Diesel Range Organics	<b>2.6</b>	1.3	NWTPH-Dx	9-28-17	9-29-17	N
Lube Oil	<b>9.0</b>	2.1	NWTPH-Dx	9-28-17	9-29-17	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	98	50-150				



Date of Report: October 20, 2017  
 Samples Submitted: September 27, 2017  
 Laboratory Reference: 1709-331  
 Project: 040-099-1

**NWTPH-Dx  
 QUALITY CONTROL**

Matrix: Water  
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0928W2					
Diesel Range Organics	ND	0.13	NWTPH-Dx	9-28-17	9-28-17	
Lube Oil Range Organics	ND	0.20	NWTPH-Dx	9-28-17	9-28-17	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	93	50-150				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	09-320-01							
	ORIG	DUP						
Diesel Range	ND	ND	NA	NA	NA	NA	NA	NA
Lube Oil Range	ND	ND	NA	NA	NA	NA	NA	NA
<i>Surrogate:</i>								
<i>o-Terphenyl</i>				76	88	50-150		



Date of Report: October 20, 2017  
 Samples Submitted: September 27, 2017  
 Laboratory Reference: 1709-331  
 Project: 040-099-1

**PAHs EPA 8270D/SIM**

Matrix: Water  
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DW-092717-01</b>					
Laboratory ID:	09-331-01					
Naphthalene	ND	0.11	EPA 8270D/SIM	9-27-17	9-28-17	
2-Methylnaphthalene	ND	0.11	EPA 8270D/SIM	9-27-17	9-28-17	
1-Methylnaphthalene	ND	0.11	EPA 8270D/SIM	9-27-17	9-28-17	
Acenaphthylene	ND	0.11	EPA 8270D/SIM	9-27-17	9-28-17	
Acenaphthene	ND	0.11	EPA 8270D/SIM	9-27-17	9-28-17	
Fluorene	ND	0.11	EPA 8270D/SIM	9-27-17	9-28-17	
Phenanthrene	ND	0.11	EPA 8270D/SIM	9-27-17	9-28-17	
Anthracene	ND	0.11	EPA 8270D/SIM	9-27-17	9-28-17	
Fluoranthene	ND	0.11	EPA 8270D/SIM	9-27-17	9-28-17	
Pyrene	ND	0.11	EPA 8270D/SIM	9-27-17	9-28-17	
Benzo[a]anthracene	0.045	0.011	EPA 8270D/SIM	9-27-17	9-28-17	
Chrysene	0.032	0.011	EPA 8270D/SIM	9-27-17	9-28-17	
Benzo[b]fluoranthene	0.047	0.011	EPA 8270D/SIM	9-27-17	9-28-17	
Benzo(j,k)fluoranthene	ND	0.011	EPA 8270D/SIM	9-27-17	9-28-17	
Benzo[a]pyrene	0.046	0.011	EPA 8270D/SIM	9-27-17	9-28-17	
Indeno(1,2,3-c,d)pyrene	0.034	0.011	EPA 8270D/SIM	9-27-17	9-28-17	
Dibenz[a,h]anthracene	ND	0.011	EPA 8270D/SIM	9-27-17	9-28-17	
Benzo[g,h,i]perylene	0.028	0.011	EPA 8270D/SIM	9-27-17	9-28-17	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	38	30 - 124				
<i>Pyrene-d10</i>	49	40 - 143				
<i>Terphenyl-d14</i>	44	27 - 127				



Date of Report: October 20, 2017  
 Samples Submitted: September 27, 2017  
 Laboratory Reference: 1709-331  
 Project: 040-099-1

**PAHs EPA 8270D/SIM  
 METHOD BLANK QUALITY CONTROL**

Matrix: Water  
 Units: ug/L

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
Laboratory ID:	MB0927W1					
Naphthalene	ND	0.10	EPA 8270D/SIM	9-27-17	9-27-17	
2-Methylnaphthalene	ND	0.10	EPA 8270D/SIM	9-27-17	9-27-17	
1-Methylnaphthalene	ND	0.10	EPA 8270D/SIM	9-27-17	9-27-17	
Acenaphthylene	ND	0.10	EPA 8270D/SIM	9-27-17	9-27-17	
Acenaphthene	ND	0.10	EPA 8270D/SIM	9-27-17	9-27-17	
Fluorene	ND	0.10	EPA 8270D/SIM	9-27-17	9-27-17	
Phenanthrene	ND	0.10	EPA 8270D/SIM	9-27-17	9-27-17	
Anthracene	ND	0.10	EPA 8270D/SIM	9-27-17	9-27-17	
Fluoranthene	ND	0.10	EPA 8270D/SIM	9-27-17	9-27-17	
Pyrene	ND	0.10	EPA 8270D/SIM	9-27-17	9-27-17	
Benzo[a]anthracene	ND	0.010	EPA 8270D/SIM	9-27-17	9-27-17	
Chrysene	ND	0.010	EPA 8270D/SIM	9-27-17	9-27-17	
Benzo[b]fluoranthene	ND	0.010	EPA 8270D/SIM	9-27-17	9-27-17	
Benzo(j,k)fluoranthene	ND	0.010	EPA 8270D/SIM	9-27-17	9-27-17	
Benzo[a]pyrene	ND	0.010	EPA 8270D/SIM	9-27-17	9-27-17	
Indeno(1,2,3-c,d)pyrene	ND	0.010	EPA 8270D/SIM	9-27-17	9-27-17	
Dibenz[a,h]anthracene	ND	0.010	EPA 8270D/SIM	9-27-17	9-27-17	
Benzo[g,h,i]perylene	ND	0.010	EPA 8270D/SIM	9-27-17	9-27-17	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	<i>66</i>	<i>30 - 124</i>				
<i>Pyrene-d10</i>	<i>75</i>	<i>40 - 143</i>				
<i>Terphenyl-d14</i>	<i>104</i>	<i>27 - 127</i>				



Date of Report: October 20, 2017  
 Samples Submitted: September 27, 2017  
 Laboratory Reference: 1709-331  
 Project: 040-099-1

**PAHs EPA 8270D/SIM  
 SB/SBD QUALITY CONTROL**

Matrix: Water  
 Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery	RPD	RPD	Flags
					Recovery	Limits	Limit			
<b>SPIKE BLANKS</b>										
Laboratory ID:	SB0927W1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	<b>0.254</b>	<b>0.259</b>	0.500	0.500	51	52	29 - 101	2	47	
Acenaphthylene	<b>0.274</b>	<b>0.287</b>	0.500	0.500	55	57	20 - 117	5	50	
Acenaphthene	<b>0.349</b>	<b>0.308</b>	0.500	0.500	70	62	37 - 109	12	43	
Fluorene	<b>0.328</b>	<b>0.333</b>	0.500	0.500	66	67	47 - 108	2	34	
Phenanthrene	<b>0.320</b>	<b>0.327</b>	0.500	0.500	64	65	49 - 109	2	28	
Anthracene	<b>0.394</b>	<b>0.378</b>	0.500	0.500	79	76	34 - 140	4	32	
Fluoranthene	<b>0.377</b>	<b>0.388</b>	0.500	0.500	75	78	45 - 120	3	39	
Pyrene	<b>0.424</b>	<b>0.383</b>	0.500	0.500	85	77	42 - 133	10	39	
Benzo[a]anthracene	<b>0.374</b>	<b>0.387</b>	0.500	0.500	75	77	71 - 117	3	28	
Chrysene	<b>0.416</b>	<b>0.438</b>	0.500	0.500	83	88	53 - 110	5	25	
Benzo[b]fluoranthene	<b>0.364</b>	<b>0.383</b>	0.500	0.500	73	77	53 - 123	5	37	
Benzo(j,k)fluoranthene	<b>0.420</b>	<b>0.440</b>	0.500	0.500	84	88	52 - 119	5	41	
Benzo[a]pyrene	<b>0.342</b>	<b>0.336</b>	0.500	0.500	68	67	37 - 129	2	33	
Indeno(1,2,3-c,d)pyrene	<b>0.310</b>	<b>0.324</b>	0.500	0.500	62	65	45 - 128	4	31	
Dibenz[a,h]anthracene	<b>0.344</b>	<b>0.370</b>	0.500	0.500	69	74	54 - 120	7	30	
Benzo[g,h,i]perylene	<b>0.364</b>	<b>0.380</b>	0.500	0.500	73	76	49 - 117	4	29	
<i>Surrogate:</i>										
2-Fluorobiphenyl					64	48	30 - 124			
Pyrene-d10					72	73	40 - 143			
Terphenyl-d14					100	86	27 - 127			



Date of Report: October 20, 2017  
 Samples Submitted: September 27, 2017  
 Laboratory Reference: 1709-331  
 Project: 040-099-1

**TOTAL METALS  
 EPA 200.8**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>EPA Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
Lab ID:	09-331-01					
<b>Client ID:</b>	<b>DW-092717-01</b>					
Arsenic	<b>15</b>	6.0	200.8	9-28-17	9-28-17	
Lead	<b>91</b>	2.0	200.8	9-28-17	9-28-17	





Date of Report: October 20, 2017  
Samples Submitted: September 27, 2017  
Laboratory Reference: 1709-331  
Project: 040-099-1

**TOTAL METALS  
EPA 200.8  
METHOD BLANK QUALITY CONTROL**

Date Extracted: 9-28-17  
Date Analyzed: 9-28-17  
  
Matrix: Water  
Units: ug/L (ppb)  
  
Lab ID: MB0928WH1

Analyte	Method	Result	PQL
Arsenic	200.8	<b>ND</b>	3.0
Lead	200.8	<b>ND</b>	1.0



Date of Report: October 20, 2017  
Samples Submitted: September 27, 2017  
Laboratory Reference: 1709-331  
Project: 040-099-1

**TOTAL METALS  
EPA 200.8  
DUPLICATE QUALITY CONTROL**

Date Extracted: 9-28-17  
Date Analyzed: 9-28-17  
  
Matrix: Water  
Units: ug/L (ppb)  
  
Lab ID: 09-294-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	<b>ND</b>	<b>ND</b>	NA	3.0	
Lead	<b>ND</b>	<b>ND</b>	NA	1.0	



Date of Report: October 20, 2017  
 Samples Submitted: September 27, 2017  
 Laboratory Reference: 1709-331  
 Project: 040-099-1

**TOTAL METALS  
 EPA 200.8  
 MS/MSD QUALITY CONTROL**

Date Extracted: 9-28-17

Date Analyzed: 9-28-17

Matrix: Water

Units: ug/L (ppb)

Lab ID: 09-294-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	<b>107</b>	107	<b>118</b>	118	10	
Lead	100	<b>95.8</b>	96	<b>104</b>	104	9	





### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
  - B - The analyte indicated was also found in the blank sample.
  - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
  - E - The value reported exceeds the quantitation range and is an estimate.
  - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
  - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
  - I - Compound recovery is outside of the control limits.
  - J - The value reported was below the practical quantitation limit. The value is an estimate.
  - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
  - L - The RPD is outside of the control limits.
  - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
  - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
  - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
  - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
  - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
  - P - The RPD of the detected concentrations between the two columns is greater than 40.
  - Q - Surrogate recovery is outside of the control limits.
  - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
  - T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
  - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
  - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
  - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
  - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
  - X - Sample extract treated with a mercury cleanup procedure.
  - X1 - Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.
  - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
  - Z -
- ND - Not Detected at PQL  
 PQL - Practical Quantitation Limit  
 RPD - Relative Percent Difference





October 19, 2017

**Vista Work Order No. 1701357**

Mr. David Baumeister  
OnSite Environmental Inc.  
14648 NE 95th Street  
Redmond, WA 98052

Dear Mr. Baumeister,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on September 29, 2017. This sample set was analyzed on a standard turn-around time, under your Project Name '040-099-1'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at [mmaier@vista-analytical.com](mailto:mmaier@vista-analytical.com).

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

A handwritten signature in black ink that reads "Martha Maier for".

Martha Maier  
Laboratory Director



*Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.*

**Vista Work Order No. 1701357**

**Case Narrative**

**Sample Condition on Receipt:**

One water sample was received in good condition and within the method temperature requirements. The sample was received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

**Analytical Notes:**

**EPA Method 8290**

The sample was extracted and analyzed for 2,3,7,8-TCDD only by EPA Method 8290 using a ZB-5MS GC column.

Holding Times

The method holding time criteria was met for this sample.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank. The OPR recoveries were within the method acceptance criteria.

Labeled standard recoveries for all QC and field samples were within method acceptance criteria.

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# Sample Inventory Report

<b>Vista Sample ID</b>	<b>Client Sample ID</b>	<b>Sampled</b>	<b>Received</b>	<b>Components/Containers</b>
1701357-01	DW-092717-01	27-Sep-17 12:00	29-Sep-17 10:08	Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L



## **ANALYTICAL RESULTS**

Sample ID: Method Blank					EPA Method 8290			
Analyte	Conc. (pg/L)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	2.22			IS 13C-2,3,7,8-TCDD	87.5	40 - 135	
					CRS 37Cl-2,3,7,8-TCDD	89.0	40 - 135	

DL - Sample specific estimated detection limit

LCL-UCL- Lower control limit - upper control limit

EMPC - Estimated maximum possible concentration

<b>Sample ID: OPR</b>					<b>EPA Method 8290</b>		
Matrix: Aqueous	QC Batch: B7J0075				Lab Sample: B7J0075-BS1		
Sample Size: 1.00 L	Date Extracted: 13-Oct-2017 7:32				Date Analyzed: 18-Oct-17 12:52 Column: ZB-5MS		
Analyte	Amt Found (pg/L)	Spike Amt	%R	Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	210	200	105	70 - 130	IS 13C-2,3,7,8-TCDD	86.9	40 - 135
					CRS 37Cl-2,3,7,8-TCDD	89.8	40 - 135

LCL-UCL - Lower control limit - upper control limit

<b>Sample ID: DW-092717-01</b>	<b>EPA Method 8290</b>
--------------------------------	------------------------

<b>Client Data</b> Name: OnSite Environmental Inc. Project: 040-099-1 Date Collected: 27-Sep-2017 12:00	<b>Sample Data</b> Matrix: Water Sample Size: 1.02 L	<b>Laboratory Data</b> Lab Sample: 1701357-01      Date Received: 29-Sep-2017 10:08 QC Batch: B7J0075      Date Extracted: 13-Oct-2017 7:32 Date Analyzed : 18-Oct-17 16:07      Column: ZB-5MS
--	--	--

Analyte	Conc. (pg/L)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	4.11			IS 13C-2,3,7,8-TCDD	85.9	40 - 135	
					CRS 37Cl-2,3,7,8-TCDD	97.5	40 - 135	

DL - Sample specific estimated detection limit  
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

## **DATA QUALIFIERS & ABBREVIATIONS**

<b>B</b>	<b>This compound was also detected in the method blank.</b>
<b>D</b>	<b>Dilution</b>
<b>E</b>	<b>The associated compound concentration exceeded the calibration range of the instrument.</b>
<b>H</b>	<b>Recovery and/or RPD was outside laboratory acceptance limits.</b>
<b>I</b>	<b>Chemical Interference</b>
<b>J</b>	<b>The amount detected is below the Reporting Limit/LOQ.</b>
<b>M</b>	<b>Estimated Maximum Possible Concentration. (CA Region 2 projects only)</b>
<b>*</b>	<b>See Cover Letter</b>
<b>Conc.</b>	<b>Concentration</b>
<b>NA</b>	<b>Not applicable</b>
<b>ND</b>	<b>Not Detected</b>
<b>TEQ</b>	<b>Toxic Equivalency</b>
<b>U</b>	<b>Not Detected (specific projects only)</b>

**Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.**

## CERTIFICATIONS

<b>Accrediting Authority</b>	<b>Certificate Number</b>
Arkansas Department of Environmental Quality	17-015-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-18
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2016026
Minnesota Department of Health	1175673
New Hampshire Environmental Accreditation Program	207716
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-008
Pennsylvania Department of Environmental Protection	013
Texas Commission on Environmental Quality	T104704189-17-8
Virginia Department of General Services	8621
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

*Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.*

## NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	Method
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23

MATRIX: Biological Tissue	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

MATRIX: Non-Potable Water	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A





### Sample Log-in Checklist

 Vista Work Order #: 1701357 TAT standard

<b>Samples Arrival:</b>	<b>Date/Time:</b> 09/29/17 1008	<b>Initials:</b> VBS	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> N/A
<b>Logged In:</b>	<b>Date/Time:</b> 09/30/17 1307 <del>1140</del> <sup>was</sup> 9/30/17	<b>Initials:</b> VMS	<b>Location:</b> WR-2
			<b>Shelf/Rack:</b> B-1
<b>Delivered By:</b>	FedEx	<u>UPS</u>	On Trac
			GSO
			DHL
			Hand Delivered
			Other
<b>Preservation:</b>	Ice	<u>Blue Ice</u>	Dry Ice
			None
<b>Temp °C:</b> 4.8 (uncorrected)	<b>Time:</b> <del>1040</del> 1140		<b>Thermometer ID:</b> IR-1
<b>Temp °C:</b> 4.9 (corrected)	<b>Probe used:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		

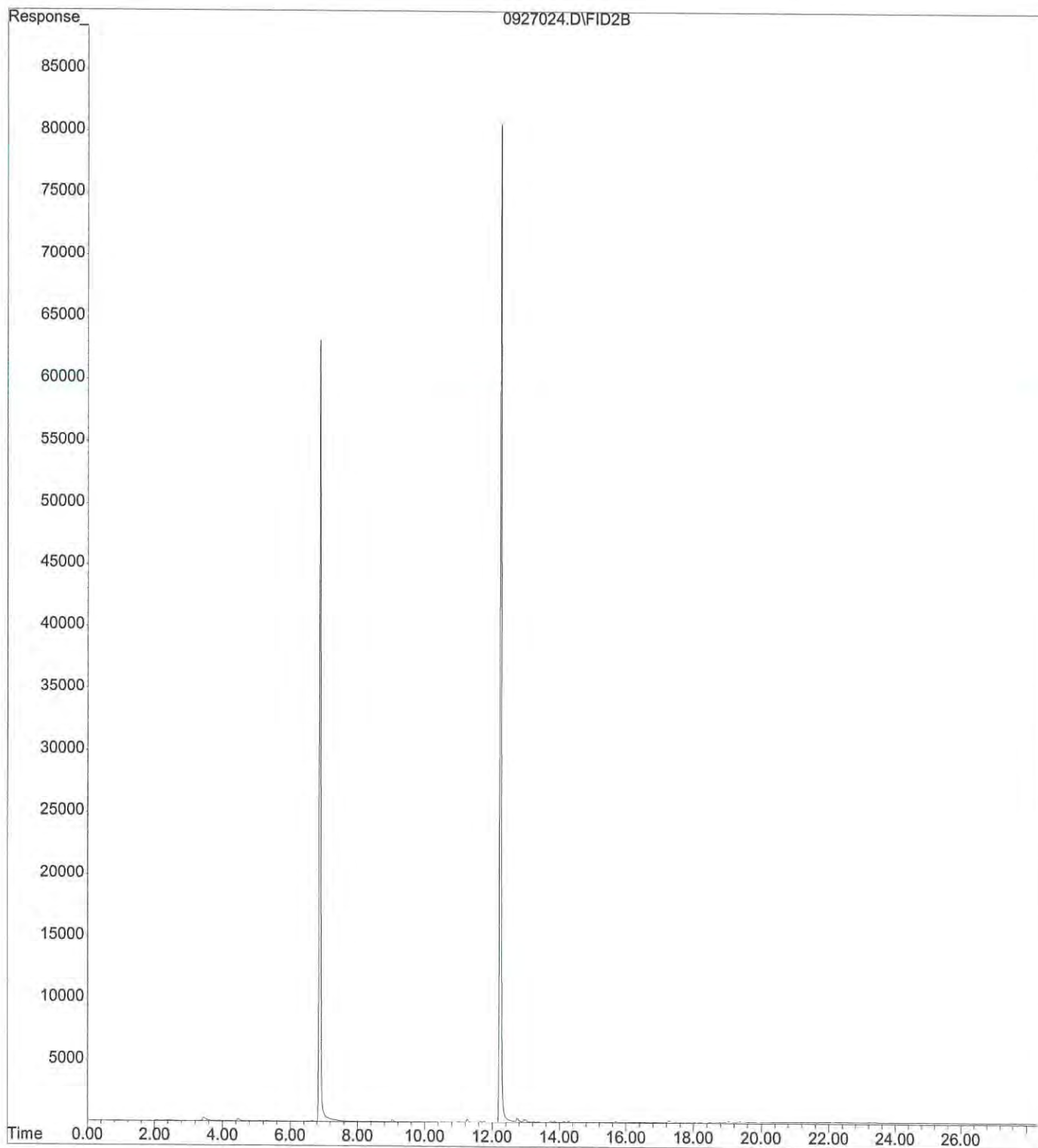
	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?			✓
Shipping Documentation Present?	✓		
Airbill	Trk # 1Z684 E1W139701 0798	✓	
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Preservation Documented:	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Trizma	<u>None</u>
			Yes <u>No</u> NA
Shipping Container	Vista	<u>Client</u>	Retain <u>Return</u> Dispose

Comments:

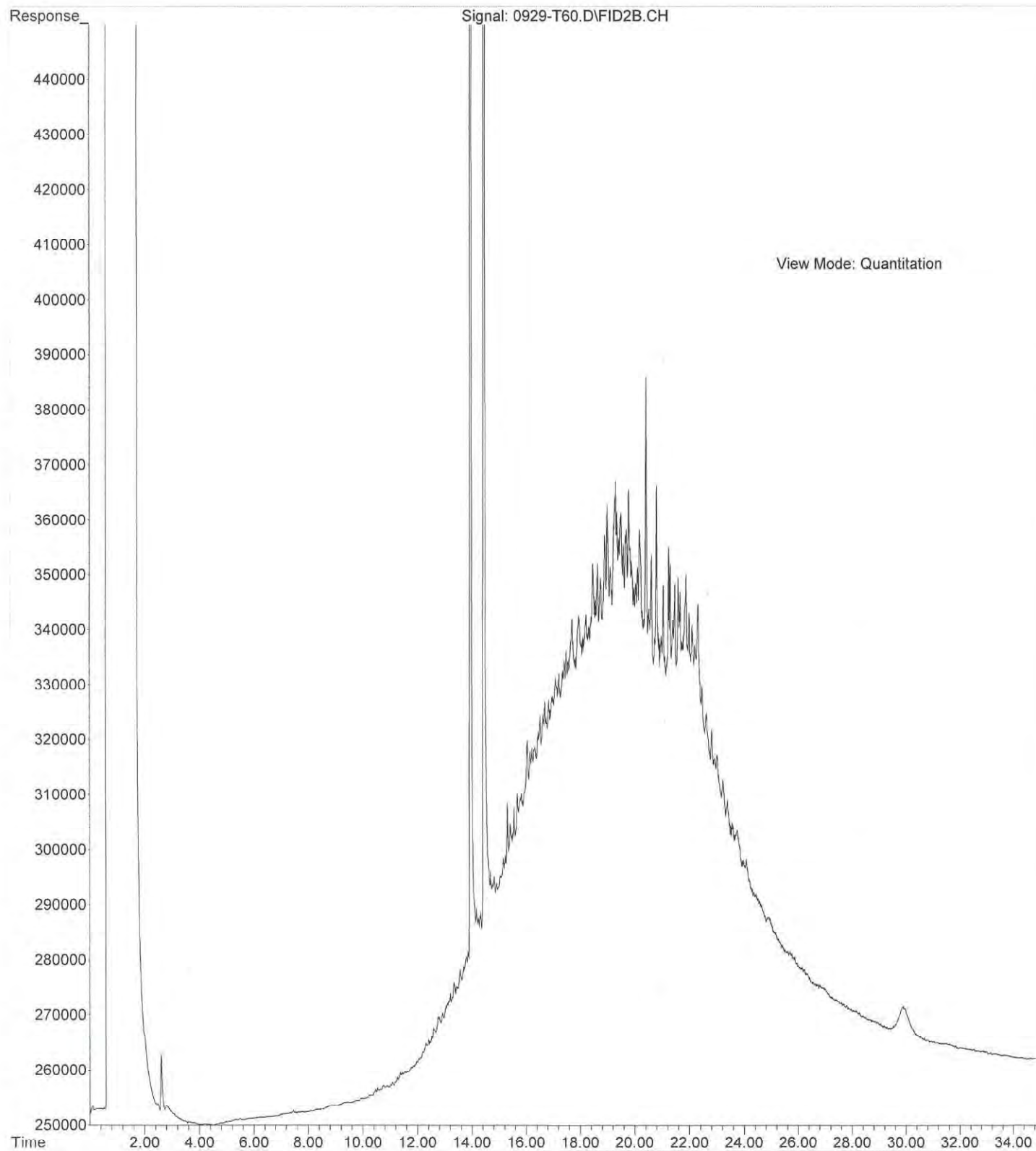




File : X:\BTEX\DARYL\DATA\D170927\0927024.D  
Operator :  
Acquired : 28 Sep 2017 00:52 using AcqMethod 170826B3.M  
Instrument : Daryl  
Sample Name: 09-331-01f 1:4  
Misc Info :  
Vial Number: 24



File :X:\DIESELS\TERI\DATA\T170929.SEC\0929-T60.D  
Operator : ZT  
Acquired : 29 Sep 2017 13:54 using AcqMethod T161216F.M  
Instrument : Teri  
Sample Name: 09-331-01 5X  
Misc Info :  
Vial Number: 60



# **Appendix L**

## **Geotextile Technical Specifications**



ACF West Inc. is a D.B.A. name for Northwest Geosynthetics Inc.

15540 Woodinville-Redmond Rd., #A-400, Woodinville, WA 98072 (425) 415-6115, (800) 423-4567, (425) 415-6126 fax

# Product Data Sheet

## ACF 200 Woven Geotextile

ACF 200 is a woven slit film geotextile, and will meet the following physical properties when tested in accordance with the methods listed below. The individual slit films are woven together in such a manner as to provide dimensional stability relative to each other. The construction of the geotextile makes ACF 200 ideal for soil separation and stabilization. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils.

ACF 200 woven Geotextile conforms to the following physical properties:

Property	Test Method	English (MARV) <sup>1</sup>	Metric (MARV) <sup>1</sup>
Weight (Typical)	ASTM D-5261	4.0 oz./SY	136 g/M2
Thickness	ASTM D-5199	20 mills	.5 mm
Grab Tensile Strength	ASTM D-4632	205 lbs	916 N
Elongation	ASTM D-4632	15%	15%
Puncture	ASTM D-4833	95 lbs	422N
CBR Puncture	ASTM D-6241	702 lbs	3124 N
Mullen Burst	ASTM D-3786	475 psi	3265 kPa
Trapezoidal Tear	ASTM D-4533	78 lbs	345 N
UV Resistance	ASTM D-4355	70%	70%
Apparent Opening Size (AOS) <sup>2</sup>	ASTM D-4751	40 US Std. Sieve	0.425 mm
Permittivity	ASTM D-4491	0.05 sec <sup>-1</sup>	0.05 sec <sup>-1</sup>
Water Flow	ASTM D-4491	4 gpm/ft <sup>2</sup>	160 l/min/m <sup>2</sup>
Roll Sizes		12.5' x 432' 15' x 360' 17.5' x 309'	3.8M x 132M 4.57M x 110M 5.3M x 94.2M

- 1) All values listed are Minimum Average Roll Value (MARV) unless otherwise noted, calculated as the typical minus two standard deviations. Statistically, it yields 97.7% degree of confidence that any sample taken during quality assurance testing will exceed the value reported.
- 2) Values for Apparent Opening size are Maximum Average Roll Values (MaxARV), typical value plus two standard deviations.

Note: ACF200 fabric is manufactured and imported for ACF West Inc. by Changzhou Telystar New Materials Co. Ltd., Jaingsu, China. ACF200 is a trade name of ACF West Inc. and any use of this name without the expressed written consent of ACF West Inc. is strictly prohibited. The property values listed above are effective 11-1-2010 and subject to change without notice.

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ACF West Inc. is a D.B.A. name for Northwest Geosynthetics Inc.

8951 SE 76<sup>th</sup> Drive, Portland, OR 97206 (503) 771-5115, (800) 878-5115, (503)771-1161 fax

# Product Data Sheet

## WSF 200 (ACF 200) Woven Geotextile

WSF 200 is a woven slit film geotextile, and will meet the following physical properties when tested in accordance with the methods listed below. The individual slit films are woven together in such a manner as to provide dimensional stability relative to each other. The construction of the geotextile makes WSF 200 ideal for soil separation and stabilization. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils.

WSF 200 Woven Geotextile conforms to the following physical properties:

Property	Test Method	English (MARV) <sup>1</sup>
Weight (Typical)	ASTM D-5261	4.0 oz./SY
Grab Tensile Strength	ASTM D-4632	200 lbs
CBR Puncture	ASTM D-6241	700 lbs
Trapezoidal Tear	ASTM D-4533	80 lbs
UV Resistance	ASTM D-4355	80%
Apparent Opening Size (AOS) <sup>2</sup>	ASTM D-4751	50 US Std. Sieve
CBR Puncture Strength	ASTM D-6241	700 lbs
Permittivity	ASTM D-4491	0.05 sec <sup>-1</sup>
Water Flow	ASTM D-4491	4 gpm/ft <sup>2</sup>
Roll Sizes		12.5' x 432' 15' x 360' 17.5' x 309'

- 1) All values listed are Minimum Average Roll Value (MARV) unless otherwise noted, calculated as the typical minus two standard deviations. Statistically, it yields 97.7% degree of confidence that any sample taken during quality assurance testing will exceed the value reported.
- 2) Values for Apparent Opening size are Maximum Average Roll Values (MaxARV), typical value plus two standard deviations.

Note: WSF 200 fabric is manufactured and imported for ACF West Inc. by Gia Loi Joint Stock Company. Phuoc Thai Hamlet, Tahi Hoa Tan Uyen District. Binh Duon Province, Vietnam. ACF 200 is a trade name of ACF West Inc. and any use of this name without the expressed written consent of ACF West Inc. is strictly prohibited. The property values listed above are effective 11-1-2010 and subject to change without notice.

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# **Appendix M**

## **Soil Cover (And Any Additional Gravel/Aggregate) Import Documentation**

# Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting



**Client:** Black Lake Resources  
**Address:** \_\_\_\_\_  
 \_\_\_\_\_  
**Attn:** \_\_\_\_\_

**Date:** 6-Oct-17  
**Project:** QC-Black Lake Resources-LR Pit  
**Project #:** 17S069  
**Sample #:** S17-839

As requested MTC, Inc. has performed the following test(s) on the sample referenced above. The testing was performed in accordance with current applicable AASHTO or ASTM standards as indicated below. The results obtained in our laboratory were as follows

	Test(s) Performed:	Test Results		Test(s) Performed:	Test Results
<input type="checkbox"/>	Sieve Analysis	See Attachment	<input type="checkbox"/>	Sulfate Soundness	
<input type="checkbox"/>	Proctor		<input checked="" type="checkbox"/>	Unit Weight & Voids	
<input type="checkbox"/>	Sand Equivalent		<input type="checkbox"/>	WSDOT Degradation	
<input type="checkbox"/>	Fracture Count		<input type="checkbox"/>		
<input type="checkbox"/>	Moisture Content		<input type="checkbox"/>		
<input type="checkbox"/>	Specific Gravity, Coarse		<input type="checkbox"/>		
<input type="checkbox"/>	Specific Gravity, Fine		<input type="checkbox"/>		
<input type="checkbox"/>	Hydrometer Analysis		<input type="checkbox"/>		
<input type="checkbox"/>	Atterberg Limits		<input type="checkbox"/>		
<input type="checkbox"/>	Asphalt Extraction/Gradation		<input type="checkbox"/>		
<input type="checkbox"/>	Rice Density		<input type="checkbox"/>		

If you have any questions concerning the test results, the procedures used, or if we can be of any further assistance please call on us at the number below.

Respectfully Submitted,  
 Frank J Pooler  
 WABO Supervising Laboratory Technician

# Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting



## Unit Weight & Voids in Aggregate

### ASTM C-29

Project: QC-Black Lake Resources  
Project #: 17S069  
Date Sampled: 10/6/2017  
Lab #: S17-839  
Sample Source: Little Rock Pit

Client: Black Lake Resources  
Sampled By: SBO  
Sample Color: Gray  
Tested By: FP  
Date Tested: 10/6/2017

#### Permeable Ballast

	<u>Run #1</u>	<u>Run #2</u>	<u>Run #3</u>
Mass of Measure (T)	<u>4.25</u>	<u>4.25</u>	<u>4.25</u>
Mass of Aggregate & Measure (G)	<u>14.19</u>	<u>14.27</u>	<u>14.31</u>
Volume of Measure (V)	<u>0.0999</u>	<u>0.0999</u>	<u>0.0999</u>
Unit Weight of Aggregate (M)	<u>99.50</u>	<u>100.30</u>	<u>100.70</u>
% Voids	<u>40.85</u>	<u>40.37</u>	<u>40.13</u>
Average Unit Weight	<u><b>100.17</b></u>		
Bulk Specific Gravity (S)	<u>2.7</u>	Average Void = <u><b>40.45</b></u>	

#### Unit Weight

$$M = (G-T)/V$$

Where:

M = unit weight of aggregate, lbs./cu. ft.  
G = mass of aggregate plus measure, lb.  
T = mass of measure, lb.  
V = volume of measure, cu. Ft.

#### Void Content

$$\text{Voids \%} = 100[(S \times W) - M] / S \times W$$

Where:

M = unit weight of aggregate, lb./cu. Ft  
S = bulk specific gravity  
W = density of water, 62.3 lb./cu. Ft.

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Reviewed By: \_\_\_\_\_

All results apply only to actual Locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980  
NW Region ~ 2126 East Bakerview Rd., Suite #101 • Bellingham, WA 98226 • Phone (360) 647-6061 • Fax (360) 647-8111  
SW Region ~ 2118 Black Lake Blvd. SW • Olympia, WA 98512 • Phone (360) 534-9777 • Fax (360) 534-9779

Website Address: [www.mtc-inc.net](http://www.mtc-inc.net)

Unit Weight Voids in Aggregate 2012MG

# Permeable Ballast

## Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting



### Unit Weight & Voids in Aggregate

ASTM C-29

Project: QC - Blacklake Resources  
Project #: 17S068  
Date Sampled: 2-May-17  
Lab #: S17-211  
Sample Source: Tumwater Pit

Client: Blacklake Resources  
Sampled By: SBO  
Sample Color: Gray/Black  
Tested By: JE  
Date Tested: 3-May-17

	<u>Run #1</u>	<u>Run #2</u>	<u>Run #3</u>
Mass of Measure (T)	<u>4.25</u>	<u>4.25</u>	<u>4.25</u>
Mass of Aggregate & Measure (G)	<u>14.38</u>	<u>14.39</u>	<u>14.38</u>
Volume of Measure (V)	<u>0.0999</u>	<u>0.0999</u>	<u>0.0999</u>
Unit Weight of Aggregate (M)	<u>101.40</u>	<u>101.50</u>	<u>101.40</u>
% Voids	<u>40.16</u>	<u>40.10</u>	<u>40.16</u>
Average Unit Weight	<u>101.43</u>		
Bulk Specific Gravity (S)	<u>2.72</u>	Average Void = <u>40.14</u>	

#### Unit Weight

$$M = (G-T)/V$$

Where:

M = unit weight of aggregate, lbs./cu. ft.  
G = mass of aggregate plus measure, lb.  
T = mass of measure, lb.  
V = volume of measure, cu. Ft.

#### Void Content

$$\text{Voids \%} = 100[(S \times W) - M] / S \times W$$

Where:

M = unit weight of aggregate, lb./cu. Ft.  
S = bulk specific gravity  
W = density of water, 62.3 lb./cu. Ft.

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Reviewed By: 

All results apply only to actual locations and materials tested. As a matter of professional ethics, the public and ourselves, all reports are submitted as the confidential property of client, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

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NW Region - 2126 East Bakerview Rd., Suite #101 • Bellingham, WA 98226 • Phone (360) 647-6061 • Fax (360) 647-8111  
SW Region - 2118 Black Lake Blvd. SW • Olympia, WA 98512 • Phone (360) 534-9777 • Fax (360) 534-9779  
Website Address: [www.mtc-inc.net](http://www.mtc-inc.net)

Unit Weight Voids in Aggregate 2012MG

# Permeable Ballast

## Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting



### Unit Weight & Voids in Aggregate

ASTM C-29

Project: QC - Blacklake Resources  
 Project #: 17S068  
 Date Sampled: 2-May-17  
 Lab #: S17-211  
 Sample Source: Tumwater Pit

Client: Blacklake Resources  
 Sampled By: SBO  
 Sample Color: Gray/Black  
 Tested By: JE  
 Date Tested: 3-May-17

	Run #1	Run #2	Run #3
Mass of Measure (T)	4.25	4.25	4.25
Mass of Aggregate & Measure (G)	14.38	14.39	14.38
Volume of Measure (V)	0.0999	0.0999	0.0999
Unit Weight of Aggregate (M)	101.40	101.50	101.40
% Voids	40.16	40.10	40.16
Average Unit Weight	<b>101.43</b>		
Bulk Specific Gravity (S)	2.72	Average Void = <b>40.14</b>	

Unit Weight

$M = (G-T)/V$

Where:

M = unit weight of aggregate, lbs./cu. ft.  
 G = mass of aggregate plus measure, lb.  
 T = mass of measure, lb.  
 V = volume of measure, cu. Ft.

Void Content

$\text{Voids \%} = 100[(S \times W) - M] / S \times W$

Where:

M = unit weight of aggregate, lb./cu. Ft  
 S = bulk specific gravity  
 W = density of water, 62.3 lb./cu. Ft.

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Reviewed By:

All results apply only to actual locations and materials tested. As a matter of professional ethics, the public and ourselves, all reports are submitted as the confidential property of client, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

# Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting



**Client:** Deschutes Aggregate and Recycling Inc  
**Address:** PO Box 14451  
Tumwater, WA. 98501  
**Attn:** \_\_\_\_\_

**Date:** March 29, 2017  
**Project:** QC Deschutes Aggregate  
**Project #:** 17S041  
**Sample #:** S17-115

As requested MTC, Inc. has performed the following test(s) on the sample referenced above. The testing was performed in accordance with current applicable AASHTO or ASTM standards as indicated below. The results obtained in our laboratory were as follows below or on the attached pages:

	Test(s) Performed:	Test Results		Test(s) Performed:	Test Results
<b>X</b>	Sieve Analysis	Meets Spec		Sulfate Soundness	
	Proctor		<b>X</b>	Bulk Density & Voids	% Voids = 42.80
	Sand Equivalent			WSDOT Degradation	
	Fracture Count				
	Moisture Content				
	Specific Gravity, Coarse				
	Specific Gravity, Fine				
	Hydrometer Analysis				
	Atterberg Limits				

If you have any questions concerning the test results, the procedures used, or if we can be of any further assistance please call on us at the number below.

Respectfully Submitted,  
 Frank J Pooler  
 WABO Supervising Laboratory Technician



# Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting



## Sieve Report

<b>Project:</b> QC Deschutes Aggregate <b>Project #:</b> 17S041 <b>Client:</b> Deschutes Aggregate and Recycling Inc <b>Source:</b> Deschutes Aggregate and Recycling Inc <b>Sample#:</b> S17-115	<b>Date Received:</b> 27-Mar-17 <b>Sampled By:</b> SBO <b>Date Tested:</b> 28-Mar-17 <b>Tested By:</b> JE	<b>ASTM D-2487 Unified Soils Classification System</b> GP, Poorly graded Gravel <b>Sample Color:</b> Gray	
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**ASTM D-2216, ASTM D-2419, ASTM D-4318, ASTM D-5821**

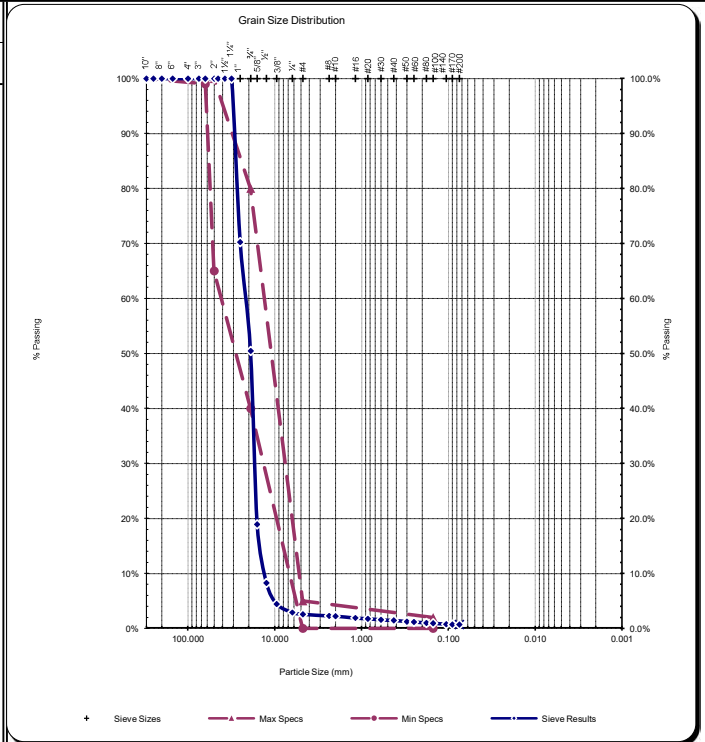
**Specifications**

2016 WSDOT 9-03.9(2) Permeable Ballast  
 Sample Meets Specs ? Yes

D <sub>(5)</sub> = 9.925 mm	% Gravel = 97.4%	Coeff. of Curvature, C <sub>c</sub> = 1.02
D <sub>(10)</sub> = 13.930 mm	% Sand = 1.9%	Coeff. of Uniformity, C <sub>u</sub> = 1.68
D <sub>(15)</sub> = 14.707 mm	% Silt & Clay = 0.7%	Fineness Modulus = 7.35
D <sub>(30)</sub> = 17.053 mm	Liquid Limit = n/a	Plastic Limit = n/a
D <sub>(60)</sub> = 18.957 mm	Plasticity Index = n/a	Moisture %, as sampled = 0.7%
D <sub>(60)</sub> = 21.896 mm	Sand Equivalent = n/a	Req'd Sand Equivalent =
D <sub>(90)</sub> = 29.317 mm	Fracture %, 1 Face = n/a	Req'd Fracture %, 1 Face =
Dust Ratio = 12/25	Fracture %, 2+ Faces = n/a	Req'd Fracture %, 2+ Faces =

**ASTM C-136, ASTM D-6913**

Sieve Size		Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
US	Metric				
12.00"	300.00		100%		
10.00"	250.00		100%		
8.00"	200.00		100%		
6.00"	150.00		100%		
4.00"	100.00		100%		
3.00"	75.00		100%		
2.50"	63.00	100%	100%	100.0%	99.0%
2.00"	50.00	100%	100%	100.0%	65.0%
1.75"	45.00		100%		
1.50"	37.50		100%		
1.25"	31.50	100%	100%		
1.00"	25.00	70%	70%		
3/4"	19.00	50%	50%	80.0%	40.0%
5/8"	16.00	19%	19%		
1/2"	12.50	8%	8%		
3/8"	9.50	4%	4%		
1/4"	6.30	3%	3%		
#4	4.75	3%	3%	5.0%	0.0%
#8	2.36		2%		
#10	2.00	2%	2%		
#16	1.18		2%		
#20	0.850	2%	2%		
#30	0.600		2%		
#40	0.425	1%	1%		
#50	0.300		1%		
#60	0.250	1%	1%		
#80	0.180	1%	1%		
#100	0.150	1%	1%	2.0%	0.0%
#140	0.106		1%		
#170	0.090		1%		
#200	0.075	0.7%	0.7%		



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 All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Comments: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

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Regional Offices: Olympia ~ 360.534.9777 Bellingham ~ 360.647.6111 Silverdale ~ 360.698.6787 Tukwila ~ 206.241.1974  
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# Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting



## Unit Weight & Voids in Aggregate

ASTM C-29

Project: QC - Deschutes Aggregate  
 Project #: 17S041  
 Date Sampled: 27-Mar-17  
 Lab #: S17-115  
 Sample Source: Deschutes Aggregate and Recycling I

Client: Deschutes Aggregate and Recycling Inc  
 Sampled By: SBO  
 Sample Color: Gray  
 Tested By: FP  
 Date Tested: 28-Mar-17

	Run #1	Run #2	Run #3
Mass of Measure (T)	<u>4.25</u>	<u>4.25</u>	<u>4.25</u>
Mass of Aggregate & Measure (G)	<u>13.93</u>	<u>14.01</u>	<u>13.86</u>
Volume of Measure (V)	<u>0.0999</u>	<u>0.0999</u>	<u>0.0999</u>
Unit Weight of Aggregate (M)	<u>96.90</u>	<u>97.70</u>	<u>96.20</u>
% Voids	<u>42.82</u>	<u>42.35</u>	<u>43.23</u>
Average Unit Weight	<u><b>96.93</b></u>		
Bulk Specific Gravity (S)	<u>2.72</u>	Average Void = <u><b>42.80</b></u>	

Unit Weight

$$M = (G-T)/V$$

Where:

M = unit weight of aggregate, lbs./cu. ft.  
 G = mass of aggregate plus measure, lb.  
 T = mass of measure, lb.  
 V = volume of measure, cu. Ft.

Void Content

$$\text{Voids \%} = 100[(S \times W) - M] / S \times W$$

Where:

M = unit weight of aggregate, lb./cu. Ft  
 S = bulk specific gravity  
 W = density of water, 62.3 lb./cu. Ft.

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Reviewed By: 

All results apply only to actual Locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.



Perm. Ballast - 9-03.9(2)

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## Percentage of Fractured Particles in Coarse Aggregate - ASTM D-5821 & AASHTO T-335

Project: QC-Waldrick Pit  
Project #: 17S079  
Client: Deschutes Aggregate (DAR)  
Source: Waldrick Pit - Perm Ballast 9-03.9(2)  
Sample#: S17-728

Date Received: 06-Sep-17  
Sampled By: OT  
Date Tested: 08-Sep-17  
Tested By: JE

Sieve Size	1 - Fractured Face Mass	2 or more Fractured Face Mass	Total Sample Mass	% Fracture, 1 Face	% Fracture, 2+ Faces
1"	511.2		647.7	78.9%	0.0%
3/4"	3761.5		4192.3	89.7%	0.0%
5/8"	2342.0		2535.2	92.4%	0.0%
1/2"	2388.8		2537.3	94.1%	0.0%
3/8"	1404.8		1568.5	89.6%	0.0%
1/4"	1666.3		1720.3	96.9%	0.0%
#4	820.0		865.0	94.8%	0.0%

Combined Fracture, 1 Face: 91.7% Required Fracture, 1 Face: 75%  
Combined Fracture, 2+ Faces: 0.0% Required Fracture, 2+ Faces: n/a

Comments:

Reviewed by: *[Signature]*

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**Client:** Black Lake Quarry  
**Address:** 2840 Black Lake Blvd. SW  
Olympia, WA. 98512  
**Attn:** \_\_\_\_\_

**Date:** October 6, 2016  
**Project:** Q.C. - Black Lake Quarry  
**Project #:** 16S158  
**Sample #:** S16-637

As requested MTC, Inc. has performed the following test(s) on the sample referenced above. The testing was performed in accordance with current applicable AASHTO or ASTM standards as indicated below. The results obtained in our laboratory were as follows below or on the attached pages:

	Test(s) Performed:	Test Results		Test(s) Performed:	Test Results
X	Sieve Analysis			Sulfate Soundness	
	Proctor			Bulk Density & Voids	
	Sand Equivalent			WSDOT Degradation	
X	Fracture Count	98.60%			
	Moisture Content				
	Specific Gravity, Coarse				
	Specific Gravity, Fine				
	Hydrometer Analysis				
	Atterberg Limits				

If you have any questions concerning the test results, the procedures used, or if we can be of any further assistance please call on us at the number below.

Respectfully Submitted,  
 Frank J Pooler  
 WABO Supervising Laboratory Technician

# Materials Testing & Consulting, Inc.

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## Sieve Report

<b>Project:</b> Q.C. - Black Lake Quarry <b>Project #:</b> 16S158 <b>Client:</b> Black Lake Quarry <b>Source:</b> Black Lake Quarry <b>Sample#:</b> S16-637	<b>Date Received:</b> 5-Oct-16 <b>Sampled By:</b> SBO <b>Date Tested:</b> 6-Oct-16 <b>Tested By:</b> JE	<b>ASTM D-2487 Unified Soils Classification System</b> GP, Poorly graded Gravel, Crushed <b>Sample Color:</b> Dark Gray	
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ASTM D-2216, ASTM D-2419, ASTM D-4318, ASTM D-5821

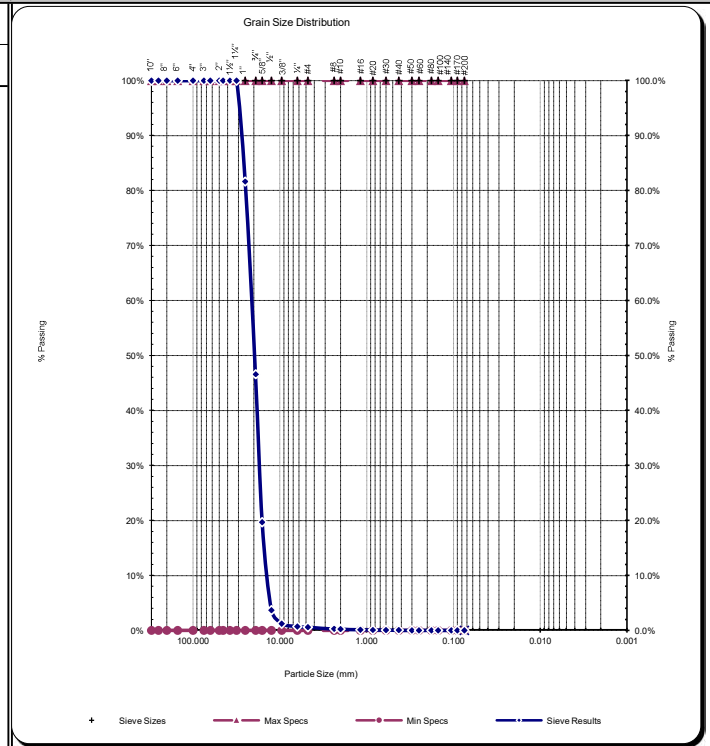
**Specifications**  
No Specs

Sample Meets Specs ? N/A

D <sub>(5)</sub> = 12.790 mm	% Gravel = 99.4%	Coeff. of Curvature, C <sub>c</sub> = 0.99
D <sub>(10)</sub> = 13.884 mm	% Sand = 0.6%	Coeff. of Uniformity, C <sub>u</sub> = 1.53
D <sub>(15)</sub> = 14.978 mm	% Silt & Clay = 0.0%	Fineness Modulus = 7.51
D <sub>(30)</sub> = 17.151 mm	Liquid Limit = n/a	Plastic Limit = n/a
D <sub>(60)</sub> = 19.583 mm	Plasticity Index = n/a	Moisture %, as sampled = n/a
D <sub>(60)</sub> = 21.296 mm	Sand Equivalent = n/a	Req'd Sand Equivalent =
D <sub>(90)</sub> = 27.963 mm	Fracture %, 1 Face = 98.6%	Req'd Fracture %, 1 Face = N/A
Dust Ratio = n/a	Fracture %, 2+ Faces = 0.0%	Req'd Fracture %, 2+ Faces = n/a

ASTM C-136, ASTM D-6913

Sieve Size		Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
US	Metric				
12.00"	300.00		100%	100.0%	0.0%
10.00"	250.00		100%	100.0%	0.0%
8.00"	200.00		100%	100.0%	0.0%
6.00"	150.00		100%	100.0%	0.0%
4.00"	100.00		100%	100.0%	0.0%
3.00"	75.00		100%	100.0%	0.0%
2.50"	63.00		100%	100.0%	0.0%
2.00"	50.00		100%	100.0%	0.0%
1.75"	45.00		100%	100.0%	0.0%
1.50"	37.50		100%	100.0%	0.0%
1.25"	31.50	100%	100%	100.0%	0.0%
1.00"	25.00	82%	82%	100.0%	0.0%
3/4"	19.00	47%	47%	100.0%	0.0%
5/8"	16.00	20%	20%	100.0%	0.0%
1/2"	12.50	4%	4%	100.0%	0.0%
3/8"	9.50	1%	1%	100.0%	0.0%
1/4"	6.30	1%	1%	100.0%	0.0%
#4	4.75	1%	1%	100.0%	0.0%
#8	2.36	0%	0%	100.0%	0.0%
#10	2.00	0%	0%	100.0%	0.0%
#16	1.18	0%	0%	100.0%	0.0%
#20	0.850	0%	0%	100.0%	0.0%
#30	0.600	0%	0%	100.0%	0.0%
#40	0.425	0%	0%	100.0%	0.0%
#50	0.300	0%	0%	100.0%	0.0%
#60	0.250	0%	0%	100.0%	0.0%
#80	0.180	0%	0%	100.0%	0.0%
#100	0.150	0%	0%	100.0%	0.0%
#140	0.106	0%	0%	100.0%	0.0%
#170	0.090	0%	0%	100.0%	0.0%
#200	0.075	0%	0%	100.0%	0.0%



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Comments: \_\_\_\_\_

Reviewed by: *[Signature]*

# Materials Testing & Consulting, Inc.

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## Percentage of Fractured Particles in Coarse Aggregate - ASTM D-5821 & AASHTO T-335

Project: Q.C. - Black Lake Quarry  
 Project #: 16S158  
 Client: Black Lake Quarry  
 Source: Black Lake Quarry  
 Sample#: S16-637


Date Received: 05-Oct-16  
 Sampled By: SBO  
 Date Tested: 06-Oct-16  
 Tested By: JE

Sieve Size	1 - Fractured Face Mass	2 or more Fractured Face Mass	Total Sample Mass	% Fracture, 1 Face	% Fracture, 2+ Faces
1-1/4"	966.8		966.8	100.0%	0.0%
1"	1258.4		1284.1	98.0%	0.0%
3/4"	1005.8		1025.9	98.0%	0.0%
5/8"	785.6		790.0	99.4%	0.0%
1/2"	650.0		669.1	97.1%	0.0%
3/8"	124.9		124.9	100.0%	0.0%
1/4"	98.0		98.0	100.0%	0.0%

#####

Combined Fracture, 1 Face: 98.6% Required Fracture, 1 Face: N/A  
 Combined Fracture, 2+ Faces: 0.0% Required Fracture, 2+ Faces: n/a

Comments: \_\_\_\_\_

Reviewed by: 

# BLACK LAKE RESOURCES

\*Permeable Ballast 9-03.9(2)

MATERIALS LAB • PHONE: 360-570-0821 • FAX: 360-570-0829

PROJECT NAME: Black Lake Resources SOURCE NAME: Littlerock JOB #: \_\_\_\_\_  
 TYPE OF MATERIAL: 1 1/4" Clean BID ITEM #: \_\_\_\_\_ PROJECT MANAGER: \_\_\_\_\_ CONTRACT #: \_\_\_\_\_  
 MATERIAL TO BE USED IN: \_\_\_\_\_ SAMPLE FROM: Stock Pile SOURCE #: J-186 RANDOM #: \_\_\_\_\_

SAMPLE #: 18  
 SAMPLE OF: 1 1/4" Clean  
 SAMPLED BY: Jeff  
 TESTED BY: Jeff  
 DATE OF SAMPLE: 9/29/2017  
 TIME OF SAMPLE: 9:30am  
 QUANTITY REPRESENTED: \_\_\_\_\_  
 QUANTITY TO DATE: \_\_\_\_\_  
 SAMPLE WET WEIGHT: 2411.8  
 SAMPLE DRY WEIGHT: 2386.6  
 MOISTURE: 1.1%  
 SAMPLE WASHED WEIGHT: \_\_\_\_\_  
 % P200 WASHED OUT: \_\_\_\_\_

SAND EQUIVALENT AVG: SPEC.  
 COMBINED FRACTURE: SPEC.  
 ELONGATION: SPEC.  
 WOOD PARTICLES: SPEC.  
 WOOD WEIGHT: \_\_\_\_\_

1/4 - #10 SPLIT: SPEC.  
 (#10 / 1/4") x 100

CLEANLINESS VALUE: SPEC.  
 SEDIMENT HEIGHT: \_\_\_\_\_

FINENESS MODULUS: 5.24 TARGET

SIEVE SIZE	WEIGHT 1ST SHAKE	WEIGHT 2ND SHAKE	TOTAL WT RETAINED	WEIGHT ON SIEVE	IND. % RETAINED	TOTAL % RETAINED	TOTAL % PASSING	SPEC LSL TO USL
3"								-
2 1/2"								99 - 100
2"								65 - 100
1 3/4"								-
1 1/2"								-
1 1/4"	0.0		0.0	0.0	0.0	0.0	100	-
1"	204.4		204.4	204.4	8.6	8.6	91	-
7/8"								-
3/4"	1291.8		1291.8	1087.4	45.6	54.1	46	40 - 80
5/8"	1844.8		1844.8	553.0	23.2	77.3	23	-
1/2"	2162.8		2162.8	318.0	13.3	90.6	9	-
7/16"								-
3/8"	2300.8		2300.8	138.0	5.8	96.4	4	-
1/4"	2348.4		2348.4	47.6	2.0	98.4	2	-
#4	2355.8		2355.8	7.4	0.3	98.7	1	0 - 5
#8								-
#10								-
#16								-
#20								-
#30								-
#40								-
#50								-
#80								-
#100								0 - 2
#200								-
PAN WT	2386.8		2386.8	38.4		100.0	0.0	
DIFFERENCE PAN WEIGHT - vs - WASHED WEIGHT:								

SIEVE SIZE	SAMPLE MASS	NON FRAC MASS	ELONGATED MASS	ELONGATED %	FRACTURE %	FRACTURE SPEC	SAND EQUIV.
1	204.4	62.4			69%		
3/4	1034.0	53.8			95%		
5/8	550.8	20.6			96%		

COMBINED FRACTURE	1289.2	136.8	ELONGATION		
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## Unit Weight & Voids in Aggregate

ASTM C-29

Project: QC-Blacklake Resources  
 Project #: 17S068  
 Date Sampled: 8-May-17  
 Lab #: S17-216  
 Sample Source: Tumwater Pit

Client: Blacklake Resources  
 Sampled By: SBO  
 Sample Color: Gray/Black Quarry Spalls  
 Tested By: FJP  
 Date Tested: 10-May-17

	Run #1	Run #2	Run #3
Mass of Measure (T)	13	13	13
Mass of Aggregate & Measure (G)	61	60	60
Volume of Measure (V)	0.4977	0.4977	0.4977
Unit Weight of Aggregate (M)	96.44	94.43	94.43
% Voids	43.09	44.27	44.27
Average Unit Weight	<b>95.10</b>		
Bulk Specific Gravity (S)	2.72	Average Void = <b>43.88</b>	

Unit Weight

$$M = (G - T) / V$$

Where:

M = unit weight of aggregate, lbs./cu. ft.  
 G = mass of aggregate plus measure, lb.  
 T = mass of measure, lb.  
 V = volume of measure, cu. ft.

Void Content

$$\text{Voids \%} = 100[(S \times W) - M] / (S \times W)$$

Where:

M = unit weight of aggregate, lb./cu. ft.  
 S = bulk specific gravity  
 W = density of water, 62.3 lb./cu. ft.

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Reviewed By: \_\_\_\_\_

All tests apply only to actual locations and materials tested. As a matter of public policy to educate the public and protect the public interest, all reports are submitted as the confidential property of clients and information for public domain statements, conclusions or extracts therefrom regarding our clients is reserved pending our written approval.

# Materials Testing & Consulting, Inc.

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**Client:** Black Lake Resources  
**Address:** 2840 Black Lake Blvd. SW  
Tumwater, WA, 98512  
**Attn:** \_\_\_\_\_

**Date:** April 10, 2017  
**Project:** Q.C. - Black Lake Resources  
**Project #:** 16S158-02  
**Sample #:** S17-146

As requested MTC, Inc. has performed the following test(s) on the sample referenced above. The testing was performed in accordance with current applicable AASHTO or ASTM standards as indicated below. The results obtained in our laboratory were as follows below or on the attached pages:

	Test(s) Performed:	Test Results		Test(s) Performed:	Test Results
X	Sieve Analysis	Meets Spec		Sulfate Soundness	
	Proctor			Bulk Density & Voids	
X	Sand Equivalent	83		WSDOT Degradation	
	Fracture Count				
	Moisture Content				
	Specific Gravity, Coarse				
	Specific Gravity, Fine				
	Hydrometer Analysis				
	Atterberg Limits				

If you have any questions concerning the test results, the procedures used, or if we can be of any further assistance please call on us at the number below.

Respectfully Submitted,  
Frank J Pooler  
WABO Supervising Laboratory Technician

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## Sieve Report

<b>Project:</b> Q.C. - Black Lake Resources <b>Project #:</b> 16S158-02 <b>Client:</b> Black Lake Resources <b>Source:</b> Little Rock Pit <b>Sample#:</b> S17-146	<b>Date Received:</b> 5-Apr-17 <b>Sampled By:</b> SBO <b>Date Tested:</b> 7-Apr-17 <b>Tested By:</b> JE	<b>ASTM D-2487 Unified Soils Classification System</b> SP, Poorly graded Sand with Gravel <b>Sample Color:</b> Brown Pea Gravel	
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ASTM D-2216, ASTM D-2419, ASTM D-4318, ASTM D-5821

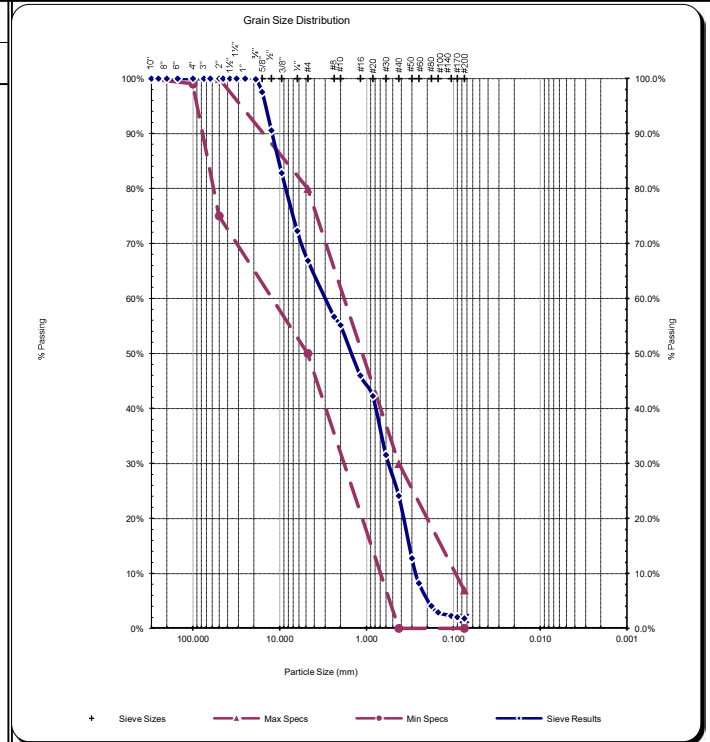
**Specifications**

2016 WSDOT 9-03.14(1) Gravel Borrow  
 Sample Meets Specs ? Yes

D <sub>(5)</sub> = 0.195 mm	% Gravel = 33.1%	Coeff. of Curvature, C <sub>c</sub> = 0.38
D <sub>(10)</sub> = 0.269 mm	% Sand = 65.1%	Coeff. of Uniformity, C <sub>u</sub> = 11.64
D <sub>(15)</sub> = 0.325 mm	% Silt & Clay = 1.8%	Fineness Modulus = 4.00
D <sub>(30)</sub> = 0.563 mm	Liquid Limit = n/a	Plastic Limit = n/a
D <sub>(60)</sub> = 1.539 mm	Plasticity Index = n/a	Moisture %, as sampled = 2.3%
D <sub>(60)</sub> = 3.136 mm	Sand Equivalent = 83	Req'd Sand Equivalent = 50
D <sub>(90)</sub> = 12.287 mm	Fracture %, 1 Face = n/a	Req'd Fracture %, 1 Face =
Dust Ratio = 4/53	Fracture %, 2+ Faces = n/a	Req'd Fracture %, 2+ Faces =

ASTM C-136, ASTM D-6913

Sieve Size		Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
US	Metric				
12.00"	300.00		100%		
10.00"	250.00		100%		
8.00"	200.00		100%		
6.00"	150.00		100%		
4.00"	100.00	100%	100%	100.0%	99.0%
3.00"	75.00		100%		
2.50"	63.00		100%		
2.00"	50.00	100%	100%	100.0%	75.0%
1.75"	45.00		100%		
1.50"	37.50		100%		
1.25"	31.50		100%		
1.00"	25.00	100%	100%		
3/4"	19.00	100%	100%		
5/8"	16.00	98%	98%		
1/2"	12.50	91%	91%		
3/8"	9.50	83%	83%		
1/4"	6.30	72%	72%	80.0%	50.0%
#4	4.75	67%	67%		
#8	2.36		57%		
#10	2.00	55%	55%		
#16	1.18		46%		
#20	0.850	42%	42%		
#30	0.600		32%		
#40	0.425	24%	24%	30.0%	0.0%
#50	0.300		13%		
#60	0.250	8%	8%		
#80	0.180	4%	4%		
#100	0.150	3%	3%		
#140	0.106		2%		
#170	0.090		2%		
#200	0.075	1.8%	1.8%	7.0%	0.0%



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Comments:

Reviewed by:

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## Sand Equivalent Report

<b>Project:</b> Q.C. - Black Lake Resources <b>Project #:</b> 16S158-02 <b>Client :</b> Black Lake Resources <b>Source:</b> Little Rock Pit <b>Sample#:</b> S17-146	<b>Date Received:</b> 5-Apr-17 <b>Sampled By:</b> SBO <b>Date Tested:</b> 7-Apr-17 <b>Tested By:</b> JE	<b>ASTM D 2487 Soils Classification</b> SP, Poorly graded Sand with Gravel <b>Sample Color</b> Brown	
<b>Sand Equivalent - ASTM D-2419, AASHTO T-176</b>			
Temperature of Solution: <u>72</u>			
			
Sand Equivalent = (Sand Reading/Clay Reading) x 100			
	#1	#2	#3
Clay Reading:	<u>4.1</u>	<u>4.3</u>	<u>n/a</u>
Sand Reading:	<u>3.5</u>	<u>3.4</u>	<u>        </u>
Time:	20 mins	20 mins	20 mins
Sand Equivalent:	<u>86</u>	<u>80</u>	<u>n/a</u>
Average Sand Equivalent:	<u>83.0</u>		
Adjusted Sand Equivalent:	<u>83</u>		
Required Sand Equivalent:	<u>50</u>		

All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Zel Houlter*  
**Reviewed by:** \_\_\_\_\_

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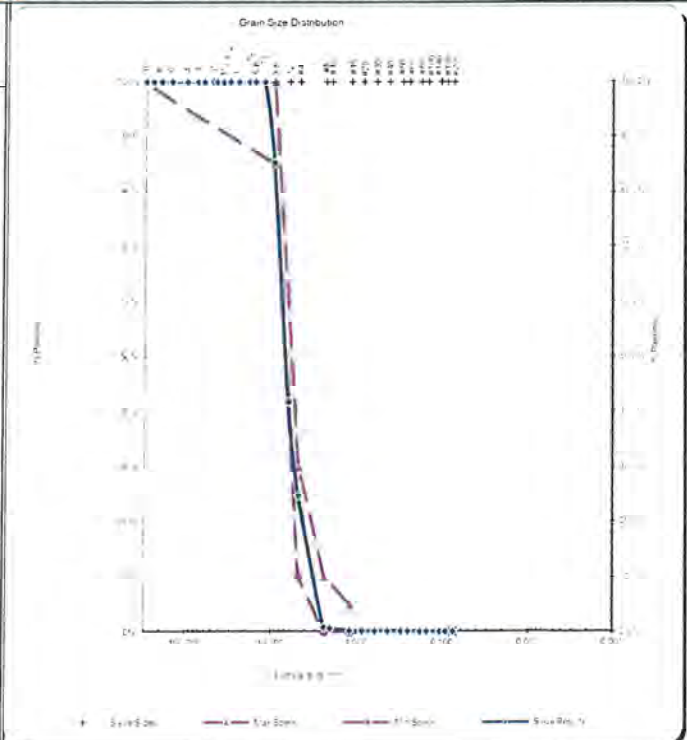


## Sieve Report

<b>Project:</b> Q.C. - Black Lake Resources <b>Project #:</b> 16S158 <b>Client:</b> Black Lake Resources <b>Source:</b> Little Rock Pit <b>Sample#:</b> S17-141	<b>Date Received:</b> 4-Jan-17 <b>Sampled By:</b> SBO <b>Date Tested:</b> 5-Jan-17 <b>Tested By:</b> JE	<b>ASTM D-2487 Unified Soils Classification System</b> G.P. Poorly graded Gravel with Sand <b>Sample Color:</b> Gray Pea Gravel	
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ASTM D-2216, ASTM D-2419, ASTM D-4318, ASTM D-5821			
<b>Specifications</b> Gravity Mains specs Sample Meets Specs ? Yes	$D_{(3)} = 2.781$ mm $D_{(10)} = 3.270$ mm $D_{(15)} = 3.777$ mm $D_{(30)} = 5.229$ mm $D_{(60)} = 6.910$ mm $D_{(80)} = 7.646$ mm $D_{(90)} = 10.476$ mm Dust Ratio = 41.72	% Gravel = 75.2% % Sand = 24.7% % Silt & Clay = 0.1% Liquid Limit = n/a Plasticity Index = n/a Sand Equivalent = 31 Fracture %, 1 Face = n/a Fracture %, 2+ Faces = n/a	Coeff. of Curvature, $C_c = 1.09$ Coeff. of Uniformity, $C_u = 2.33$ Fineness Modulus = 5.89 Plastic Limit = n/a Moisture %, as sampled = 1.2% Req'd Sand Equivalent = n/a Req'd Fracture %, 1 Face = Req'd Fracture %, 2+ Faces =

ASTM C-136, ASTM D-6913					
Sieve Size		Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
US	Metric				
12.00"	300.00		100%		
10.00"	250.00		100%		
8.00"	200.00		100%		
6.00"	150.00		100%		
4.00"	100.00		100%		
3.00"	75.00		100%		
2.50"	63.00		100%		
2.00"	50.00		100%		
1.75"	45.00		100%		
1.50"	37.50		100%		
1.25"	31.50		100%		
1.00"	25.00		100%		
3/4"	19.00		100%		
5/8"	16.00		100%		
1/2"	12.50	100%	100%		
3/8"	9.50	85%	85%	100.0%	85.0%
1/4"	6.30	42%	42%		
#4	4.75	25%	25%	30.0%	10.0%
#5	2.36	1%	1%	10.0%	0.0%
#10	2.00		1%		
#16	1.18	0%	0%	5.0%	0.0%
#20	0.850		0%		
#30	0.600		0%		
#40	0.425	0%	0%		
#50	0.300		0%		
#60	0.250	0%	0%		
#80	0.180	0%	0%		
#100	0.150	0%	0%		
#140	0.106		0%		
#175	0.090		0%		
#200	0.075	0.1%	0.1%		



Comments:

Reviewed by: *Zel Havel*

