# Appendix B

# Lithologic Core Logs

# SEDIMENT BORING SW15-SB01

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/17/2015 8:46:00 AM
**DATE LOGGED** 7/17/2015 3:10:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 98%
**LOCATION** Superior, WI
**NORTHING*** 5176281.45
**EASTING*** 570247.53
**ELEVATION (Sediment Surface)** 598.9 ft (NAVD 88)
**WATER DEPTH** 4.1 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SB01-0520 | | SW-SC | SAND: brown/ reddish brown, f-m grained sand, trace clay, trace black/grey f grained sand, cohesive, dense, moist, trace rootlets, black clast (coke?)(@2') | |
| -2 | | | | | | | 2.2 |
| | | | | | | End of Boring at 2.25 ft. | |
| -3 | | | | | | | |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB02

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/9/2015 1:52:00 PM
**DATE LOGGED** 7/10/2015 8:20:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 100%
**LOCATION** Superior, WI
**NORTHING*** 5176642.91
**EASTING*** 570451.22
**ELEVATION (Sediment Surface)** 590.9 ft (NAVD 88)
**WATER DEPTH** 12.1 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | CL-ML | SILTY CLAY: brown, trace f grained sand, low plasticity, cohesive, very moist, some rootlets throughout, trace shell fragments (bivalves ~0.5") | 1.1 |
| -1 | 18 | Composite | SW15-SB02-0520 | | CL-ML | SILTY CLAY: brown, trace f grained sand, medium plasticity, cohesive, very moist, some rootlets throughout, trace shell fragments (bivalves ~0.5") | 2.9 |
| -2 | | | | | CL-ML | SILTY CLAY: reddish brown, trace m grained sand, medium plasticity, cohesive, very moist, some rootlets throughout, trace shell fragments (bivalves ~0.5") | 3.2 |
| -3 | 24 | Composite | SW15-SB02-2040 | | ML | SILT: brown/ dark brown, silt, organic matter (peat), cohesive, moist | 3.6 |
| | | | | | CL | CLAY: reddish brown, trace silt, medium plasticity, cohesive, moist, trace organics | 3.8 |
| -4 | | | | | CL | CLAY: brown, trace silt, medium to high plasticity, very cohesive/ sticky, moist, trace to some fine rootlets throughout | |
| -5 | 24 | Composite | SW15-SB02-4060 | | | | |
| -6 | | | | | | | |
| -7 | 24 | Composite | SW15-SB02-6080 | | | | |
| -8 | | | | | | | |
| -9 | 24 | Composite | SW15-SB02-8010 | | | | |
| -10 | | | | | | | 10.0 |

End of Boring at 10 ft.

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB03

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/9/2015 4:39:00 PM
**DATE LOGGED** 7/10/2015 9:20:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 70%
**LOCATION** Superior, WI
**NORTHING*** 5176004.54
**EASTING*** 570546.15
**ELEVATION (Sediment Surface)** 598.8 ft (NAVD 88)
**WATER DEPTH** 4 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SW | SAND: brown, f-m grained sand, tightly packed, moist, trace smooth round gravel | |
| -1 | 18 | Composite | SW15-SB03-0520 | | | | |
| -2 | | | | | | | |
| -3 | 24 | Composite | SW15-SB03-2040 | | | | |
| -4 | | | | | | | 4.4 |
| -5 | | | | | | End of Boring at 5.75 ft. | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB04

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/10/2015 10:50:00 AM
**DATE LOGGED** 7/10/2015 1:15:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 98%
**LOCATION** Superior, WI
**NORTHING*** 5175421.45
**EASTING*** 570717.09
**ELEVATION (Sediment Surface)** 598.3 ft (NAVD 88)
**WATER DEPTH** 4.7 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SW-SM | SAND: brown/ dark brown, f-m grained sand, trace silt, cohesive, tightly packed, moist, trace organics, trace small black sand chips, slight chemical odor | 0.8 |
| -1 | 18 | Composite | SW15-SB04-0520 | | SW | SAND: brown/ light brown, m grained sand, trace silt, tightly packed, moist, trace rootlets, slight chemical odor | 1.3 |
| | | | | | CL-ML | SILTY CLAY: brown/ dark brown, trace f-m grained sand, medium plasticity, cohesive, trace organics and small wood chips, chemical odor | 1.7 |
| | | | | | SW-SC | SAND: brown/ light brown, m grained sand, trace silt, tightly packed, moist, slight chemical odor | 2.0 |
| -2 | 14 | Composite | SW15-SB04-2040 | | SM | SILT & SAND: dark brown/ dark grey, silt and f-m grained sand, low plasticity, cohesive, trace organics, black material w/ strong chemical odor | 3.2 |
| -3 | | | | | | End of Boring at 3.25 ft. | |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB05

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/17/2015 2:30:00 PM
**DATE LOGGED** 7/18/2015 8:45:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 86%
**LOCATION** Superior, WI
**NORTHING*** 5175434.71
**EASTING*** 570774.08
**ELEVATION (Sediment Surface)** 598.4 ft (NAVD 88)
**WATER DEPTH** 4.5 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SB05-0520 | | SC | SAND: brown/ greyish brown, f-m grained sand, some silty clay, cohesive, tightly packed, moist, trace organics, slight chemical odor | 1.5 |
| | | | | | CL-ML | SILTY CLAY: grey/ brown, trace f grained sand, large cobble (0.25'), low to medium plasticity, cohesive, moist, trace organics | 1.8 |
| -2 | | | | | SW-SM | SAND: brown/ reddish brown, f-m grained sand, trace silt, tightly packed, moist, trace organics | |
| -3 | 24 | Composite | SW15-SB05-2040 | | | | 3.0 |
| -4 | | | | | SW-SC | SAND: brown/ reddish brown, f-m grained sand, some silt, trace clay, tightly packed, very moist, trace organics | 4.3 |
| -5 | | | | | | End of Boring at 5 ft. | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

SEDIMENT LOG SUPERIOR WATERFRONT.GPJ 11/12/15

# SEDIMENT BORING SW15-SB06

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/17/2015 3:54:00 PM
**DATE LOGGED** 7/18/2015 9:45:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5175509.18
**EASTING*** 570797.47
**ELEVATION (Sediment Surface)** 576.4 ft (NAVD 88)
**WATER DEPTH** 26.7 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | OL | SILT: dark grey, trace clay, trace f grained sand, low plasticity, semi-cohesive, very moist, trace organics, trace chemical odor | 0.4 |
| -1 | 18 | Composite | SW15-SB06-0520 | | CL-ML | SILTY CLAY: dark grey, trace f grained sand, medium plasticity, semi-cohesive, very moist, trace organics, trace chemical odor | 1.8 |
| -2 | | | | | CL-ML | SILTY CLAY: dark grey/ brown, trace f grained sand, medium plasticity, cohesive, moist, trace organics, slight chemical odor | 2.2 |
| | 14 | Composite | SW15-SB06-2040 | | CL-ML | SILTY CLAY: dark grey/ brown, some brown m grained sand, medium plasticity, cohesive, moist, trace organics, slight chemical odor | 2.6 |
| -3 | | | | | CL | CLAY: red, some silt, medium plasticity, cohesive, moist | 3.2 |
| -4 | | | | | | End of Boring at 4 ft. | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB07

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/10/2015 8:45:00 AM
**DATE LOGGED** 7/10/2015 2:00:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 87%
**LOCATION** Superior, WI
**NORTHING*** 5175502.94
**EASTING*** 570837.99
**ELEVATION (Sediment Surface)** 595.5 ft (NAVD 88)
**WATER DEPTH** 7.3 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SM | SAND: brown/ dark brown, m grained sand, some silt, cohesive, tightly packed, moist, band of black sand and silty clay w/ organics (@0.5') | 0.6 |
| -1 | 18 | Composite | SW15-SB07-0520 | | SM | SAND: brown, m grained sand, somt silt, tightly packed, less moist, trace organics, subangular coarse gravel (~0.1') | 0.9 |
| | | | | | CL-ML | | 1.0 |
| | | | | | SW | | 1.1 |
| | | | | | SW | SILTY CLAY: brown, medium plasticity, cohesive, tightly packed, moist, trace organics, trace black mottling | 1.6 |
| -2 | 8 | Composite | SW15-SB07-2040 | | SW | SAND: reddish brown, m grained sand, tightly packed, moist | |
| | | | | | | SAND: brown/ dark grey, trace fine rounded gravel, cohesive, tightly packed, moist, trace organics | 2.6 |
| -3 | | | | | | SAND: red/ reddish brown, m grained sand, tight-moderately packed, moist, some organics, rootlets throughout | |
| -4 | | | | | | End of Boring at 2.25 ft. | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB08

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/17/2015 4:11:00 PM
**DATE LOGGED** 7/18/2015 10:25:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 62%
**LOCATION** Superior, WI
**NORTHING*** 5175586.16
**EASTING*** 570874.86
**ELEVATION (Sediment Surface)** 576.6 ft (NAVD 88)
**WATER DEPTH** 26.5 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | CL-ML | SILT: dark brown/ dark grey, trace clay, trace f grained sand, trace angular gravel, soft, semi-cohesive, saturated, trace organics | 0.8 |
| -1 | 12 | Composite | SW15-SB08-0520 | | CL-ML | SILTY CLAY: dark grey/ dark brown, trace f grained sand, trace angular gravel, low plasticity, soft, cohesive, moist, trace organics, slight chemical odor | 1.4 |
| -2 | | | | | | | |
| -3 | | | | | | | |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

End of Boring at 10 ft.

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB09

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/10/2015 9:18:00 AM
**DATE LOGGED** 7/10/2015 3:05:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 76%
**LOCATION** Superior, WI
**NORTHING*** 5175602.86
**EASTING*** 570930.63
**ELEVATION (Sediment Surface)** 589.6 ft (NAVD 88)
**WATER DEPTH** 13.1 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SW | SAND: brown/ reddish brown, m grained sand, tightly packed, coarse gravel (0.1' diameter), semi-moist, slight chemical odor | 1.1 |
| -1 | 18 | Composite | SW15-SB09-0520 | | CL-ML | SILTY CLAY: greyish brown, some m grained sand, medium plasticity, cohesive, moist, trace organics, trace black woody debris, slight chemical odor | 1.6 |
| -2 | | | | | SW | SAND: brown, m grained sand, tightly packed, semi-moist, trace organics, slight chemical odor | 2.4 |
| -3 | 21 | Composite | SW15-SB09-2040 | | CL | CLAY: greyish brown, trace silt, med-high plasticity, cohesive, semi-moist, red clay mottling throughout, trace organics, chemical odor | 2.9 |
| | | | | | CL-ML | SILTY CLAY: dark brown/ dark grey, medium plasticity, cohesive, semi-moist, trace rootlets, trace black organic material w/ strong chemical odor | 3.8 |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | End of Boring at 5.75 ft. | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

SEDIMENT LOG SUPERIOR WATERFRONT.GPJ 11/12/15

# SEDIMENT BORING SW15-SB10

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/18/2015 10:49:00 AM
**DATE LOGGED** 7/20/2015 11:35:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 84%
**LOCATION** Superior, WI
**NORTHING*** 5175716.86
**EASTING*** 570940.78
**ELEVATION (Sediment Surface)** 579.3 ft (NAVD 88)
**WATER DEPTH** 23.6 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | MH | SILT: black/ dark grey, some f grained sand, trace coarse gravel, soft, cohesive, saturated, trace woody debris, trace shell fragments | 0.5 |
| | | | | | CL-ML | SILTY CLAY: brown/ reddish brown, m grained sand, low plasticity, cohesive, saturated, trace organics | 0.8 |
| -1 | 18 | Composite | SW15-SB10-0520 | | ML | SILT: dark grey/ dark brown, trace clay, trace f grained sand, low plasticity, cohesive, moist, trace organics | 1.8 |
| -2 | | | | | SW | SAND: dark grey, f-m grained sand, tightly packed, cohesive, moist | 2.1 |
| | | | | | ML | SILT: dark grey/ dark brown, some clay, trace f grained sand, low plasticity, cohesive, moist | 2.8 |
| -3 | 24 | Composite | SW15-SB10-2040 | | CL-ML | SILT: dark grey/ dark brown, some clay, some fine angular gravel, trace f grained sand, low plasticity, cohesive, moist, some organic debris, slight chemical odor | 3.0 |
| | | | | | CL-ML | SILT: dark grey/ black, some clay, trace f grained sand, low plasticity, cohesive, very moist, trace woody debris and shell fragments, slight chemical odor | 3.9 |
| -4 | | | | | SW-SM | SAND: dark brown, f-m grained sand, trace silt, tightly packed, cohesive, moist, trace woody debris | 4.6 |
| -5 | | | | | | End of Boring at 3.25 ft. | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB11

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/17/2015 5:39:00 PM
**DATE LOGGED** 7/18/2015 9:15:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 93%
**LOCATION** Superior, WI
**NORTHING*** 5175658.53
**EASTING*** 570954.53
**ELEVATION (Sediment Surface)** 576.0 ft (NAVD 88)
**WATER DEPTH** 27.1 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | CL-ML | SILTY CLAY: black, trace m grained sand, trace angular gravel, medium plasticity, cohesive, moist, trace rootlets, strong chemical odor, sheen | |
| -1 | 11 | Composite | SW15-SB11-0520 | | | | 1.0 |
| | | | | | CL-ML | SILTY CLAY: black, some m grained sand, trace angular gravel, trace cobbles, medium plasticity, cohesive, moist, trace rootlets, strong chemical odor, sheen | 1.4 |
| -2 | | | | | | | |
| -3 | | | | | | | |
| -4 | | | | | | | |
| -5 | | | | | | End of Boring at 5 ft. | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB12

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/16/2015 8:49:00 AM
**DATE LOGGED** 7/16/2015 2:35:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5175228.67
**EASTING*** 571102.72
**ELEVATION (Sediment Surface)** 599.4 ft (NAVD 88)
**WATER DEPTH** 3.7 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SB12-0520 | | SW-SM | SAND: brown, f-m grained sand, trace silt, cohesive, semi-moist, trace organics | |
| -2 | | | | | | | 2.0 |
| -3 | | | | | | | |
| -4 | | | | | | End of Boring at 4 ft. | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB13

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/16/2015 9:53:00 AM
**DATE LOGGED** 7/16/2015 3:25:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 93%
**LOCATION** Superior, WI
**NORTHING*** 5175226.73
**EASTING*** 571021.65
**ELEVATION (Sediment Surface)** 599.7 ft (NAVD 88)
**WATER DEPTH** 3.2 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SC-SM | SAND & SILT: dark brown/ grey, f grained sand, trace clay, tightly packed, cohesive, moist, trace organics | 0.5 |
| | | | | | CL-ML | SILTY CLAY: dark brown/ grey, low to medium plasticity, cohesive, moist, trace organics | 0.8 |
| -1 | 18 | Composite | SW15-SB13-0520 | | CL-ML | | 0.9 |
| | | | | | CL-ML | SILTY CLAY: dark brown/ grey, some f grained sand, low to medium plasticity, tightly packed, cohesive, moist, trace organics | 1.3 |
| | | | | | CL-ML | | 1.4 |
| | | | | | OL | | |
| | | | | | CL-ML | SILTY CLAY: dark brown/ grey, low to medium plasticity, tightly packed, cohesive, moist, trace organics | 1.8 |
| -2 | | | | | | SILTY CLAY: light brown, low to medium plasticity, soft, cohesive, moist | |
| -3 | 24 | Composite | SW15-SB13-2040 | | | SILTY CLAY: dark brown, peat, cohesive, moist, trace woody debris | |
| -4 | | | | | | SILTY CLAY: dark brown, medium plasticity, cohesive, moist, trace rootlets | |
| -5 | 22 | Composite | SW15-SB13-4060 | | | | 5.6 |
| -6 | | | | | ML | SAND & SILT: dark brown/ red, f grained sand, trace clay lenses (@5.75'), tightly packed, cohesive, moist, trace organics | 6.3 |
| -7 | | | | | | End of Boring at 3 ft. | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB14

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/17/2015 11:39:00 AM
**DATE LOGGED** 7/17/2015 1:35:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5175591.15
**EASTING*** 571025.97
**ELEVATION (Sediment Surface)** 590.9 ft (NAVD 88)
**WATER DEPTH** 11.9 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | MH | SILT: brown/ greyish brown, some f grained sand, trace clay, low plasticity, cohesive, saturated, trace organics | 0.6 |
| -1 | 18 | Composite | SW15-SB14-0520 | | OL | SILT: brown/ dark brown, some f grained sand, peat (woody debris), cohesive, moist, some large wood chips (~1') | 1.0 |
| | | | | | OL | SILT: brown/ dark brown, some f grained sand, some clay, peat (woody debris), cohesive, moist, some large wood chips (~1') | 1.3 |
| -2 | | | | | SW-SM | SAND: reddish brown, f-m grained sand, trace silt, tightly packed, cohesive, moist, trace rootlets | 2.6 |
| -3 | 24 | Composite | SW15-SB14-2040 | | CL-ML | SILTY CLAY: dark brown/ greyish brown, medium plasticity, cohesive, moist, trace organics, chemical odor, bed of wet woody debris (@2.9-3') | |
| -4 | | | | | | | 4.4 |
| -5 | 24 | Composite | SW15-SB14-4060 | | CL-ML | INTERSTRATIFIED - SILTY CLAY: grey/ brown, trace f grained sand, medium plasticity, cohesive, moist, SAND: brown/ reddish brown, f-m grained, tightly packed, cohesive, semi-moist, PEAT & SILT: brown/ dark brown, trace clay, cohesive, moist | |
| -6 | | | | | | | |
| -7 | 24 | Composite | SW15-SB14-6080 | | | | |
| -8 | | | | | | | 8.0 |
| -9 | | | | | | End of Boring at 2.25 ft. | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB15

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/16/2015 10:32:00 AM
**DATE LOGGED** 7/16/2015 1:40:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 109%
**LOCATION** Superior, WI
**NORTHING*** 5175072.85
**EASTING*** 571043.02
**ELEVATION (Sediment Surface)** 600.6 ft (NAVD 88)
**WATER DEPTH** 2.3 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | CL-ML | SILTY CLAY: dark greyish brown, low to medium plasticity, cohesive, moist, trace organics | 0.8 |
| -1 | 18 | Composite | SW15-SB15-0520 | | CL-ML | SILTY CLAY: dark greyish brown, medium plasticity, cohesive, moist, trace organics | 1.2 |
| | | | | | CL-ML | SILTY CLAY: dark greyish brown, medium plasticity, cohesive, moist, trace organics, peat throughout, slight chemical odor | 1.3 |
| | | | | | SW-SM | | 1.4 |
| | | | | | CL-ML | | 1.5 |
| | | | | | SW-SM | | 1.8 |
| -2 | | | | | CL-ML | SAND: red/ brown, f-m grained sand, trace silt, tightly packed, cohesive, moist | 2.0 |
| | | | | | SW-SM | SILTY CLAY: dark greyish brown, low to medium plasticity, cohesive, moist, trace organics | |
| -3 | 22 | Composite | SW15-SB15-2040 | | | SAND: brown/ reddish brown, f-m grained sand, trace silt, tightly packed, cohesive, semi-moist | |
| | | | | | | SILTY CLAY: dark brown, medium plasticity, cohesive, moist, trace organics | |
| | | | | | | SAND: brown/ reddish brown, f grained sand, trace silt, tightly packed, cohesive, semi-moist, trace clay (@3.3'), vf grained sand lense (@3') | 3.8 |
| -4 | | | | | | | |
| -5 | | | | | | End of Boring at 5 ft. | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB16

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/16/2015 3:09:00 PM
**DATE LOGGED** 7/17/2015 9:35:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 86%
**LOCATION** Superior, WI
**NORTHING*** 5174894.02
**EASTING*** 571502.38
**ELEVATION (Sediment Surface)** 588.4 ft (NAVD 88)
**WATER DEPTH** 14.9 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | MH | SILT & SAND: brown/ dark brown, f grained sand, low plasticity, noncohesive, saturated, large fragment of woody debris (~0.3') | 0.5 |
| -1 | 18 | Composite | SW15-SB16-0520 | | CL-ML | SILTY CLAY: brown, low to medium plasticity, cohesive, moist, trace organics | 1.4 |
| -2 | | | | | CH | SILT & CLAY: brown/ dark brown, some f-m grained sand, low plasticity, cohesive, soft, very moist, trace organics, sand lense (@2.25'), slight chemical odor | 2.6 |
| -3 | 24 | Composite | SW15-SB16-2040 | | SW-SM | SAND: brown, f-m grained sand, trace silt, low plasticity, cohesive, moist, trace organics | 2.9 |
| | | | | | SC | SAND & CLAY: dark brown, f grained sand, some silt, low plasticity, cohesive, moist, trace organics, slight chemical odor | 3.9 |
| -4 | | | | | | | |
| -5 | 24 | Composite | SW15-SB16-4060 | | SW-SM | SAND: brown/ reddish brown, f-m grained sand, trace silt, tightly packed, moist, trace woody debris (@5.9') | |
| -6 | | | | | | | |
| -7 | 16 | Composite | SW15-SB16-6080 | | | | 7.3 |
| -8 | | | | | | End of Boring at 5.5 ft. | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB17

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/17/2015 10:25:00 AM
**DATE LOGGED** 7/17/2015 3:35:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 95%
**LOCATION** Superior, WI
**NORTHING*** 5175524.51
**EASTING*** 571096.04
**ELEVATION (Sediment Surface)** 594.2 ft (NAVD 88)
**WATER DEPTH** 8.6 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SM | SAND & SILT: brown/ dark brown, f grained sand, tightly packed, cohesive, very moist, some organics, trace shell fragments | 0.6 |
| | | | | | SM | SAND & SILT: brown/ dark brown, f grained sand, some clay, tightly packed, cohesive, very moist, some organics, trace shell fragments | 0.8 |
| -1 | 18 | Composite | SW15-SB17-0520 | | SM | | 1.0 |
| | | | | | CL-ML | | 1.1 |
| | | | | | SW-SM | SAND & SILT: brown/ dark brown, f grained sand, tightly packed, cohesive, very moist, some organics, trace shell fragments | |
| -2 | | | | | | SILTY CLAY: brown/ light brown, low plasticity, cohesive, moist, trace rootlets | 2.2 |
| | | | | | CL-ML | SAND: brown, f-m grained sand, trace silt, tightly packed, moist, peat lamination (@1.5-1.6'), trace organics | 2.8 |
| -3 | 21 | Composite | SW15-SB17-2040 | | CL-ML | SILTY CLAY: brown/ greyish brown, trace f grained sand, low plasticity, cohesive, moist, some small and large woody debris, trace rootlets, trace shell fragments | 3.2 |
| | | | | | CL-ML | | |
| -4 | | | | | | SILTY CLAY: brown/ light brown, trace vf grained sand, low to medium plasticity, moist, trace rootlets | 3.8 |
| | | | | | | SILTY CLAY: brown, medium plasticity, moist, trace rootlets | |
| -5 | | | | | | End of Boring at 1.5 ft. | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

SEDIMENT LOG SUPERIOR WATERFRONT.GPJ 11/12/15

# SEDIMENT BORING SW15-SB18

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/16/2015 8:20:00 AM
**DATE LOGGED** 7/16/2015 3:00:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 100%
**LOCATION** Superior, WI
**NORTHING*** 5175390.92
**EASTING*** 571105.34
**ELEVATION (Sediment Surface)** 597.7 ft (NAVD 88)
**WATER DEPTH** 5.3 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | CL-ML | SILTY CLAY: dark greyish brown, low plasticity, cohesive, saturated, trace rootlets | 0.4 |
| | | | | | SW | SAND: light grey, f grained sand, tightly packed, cohesive, moist | 0.5 |
| | | | | | CL-ML | | 0.6 |
| | | | | | CL-ML | SILTY CLAY: dark greyish brown, medium plasticity, cohesive, moist, trace organics | 0.8 |
| -1 | 18 | Composite | SW15-SB18-0520 | | | SILTY CLAY: dark greyish brown, medium plasticity, cohesive, moist, trace organics, light grey f grained sand lenses throughout | |
| -2 | | | | | CL-ML | SILTY CLAY: dark greyish brown, medium plasticity, cohesive, moist, trace rootlets | |
| | 12 | Composite | SW15-SB18-2040 | | | | |
| -3 | | | | | | | 3.0 |
| | | | | | | End of Boring at 2.5 ft. | |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB19

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/16/2015
**DATE LOGGED** 7/16/2015 2:05:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 89%
**LOCATION** Superior, WI
**NORTHING*** 5175464.92
**EASTING*** 571138.97
**ELEVATION (Sediment Surface)** 595.0 ft (NAVD 88)
**WATER DEPTH** 7.8 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SW-SM | SAND: dark grey/ black, f grained sand, trace silt, tightly packed, cohesive, moist | 0.8 |
| -1 | 18 | Composite | SW15-SB19-0520 | | CL-ML | SILTY CLAY: dark brown/ grey, some f grained sand, low plasticity, cohesive, moist, some peat-like organics | 1.2 |
| | | | | | ML | | 1.4 |
| | | | | | OL | SAND & SILT: dark brown, f grained sand, cohesive, moist, trace organics (rootlets) | 1.8 |
| -2 | | | | | CL-ML | SILTY CLAY: dark brown/ grey, some f grained sand, low plasticity, cohesive, moist, some peat | 2.0 |
| | | | | | | SILTY CLAY: brown, medium plasticity, cohesive, moist | |
| -3 | 22 | Composite | SW15-SB19-2040 | | SW-SM | SAND: reddish brown, f-m grained sand, trace silt, tightly packed, cohesive, moist | 3.8 |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | End of Boring at 6.75 ft. | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB20

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/17/2015 9:49:00 AM
**DATE LOGGED** 7/17/2015 2:00:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 89%
**LOCATION** Superior, WI
**NORTHING*** 5175362.74
**EASTING*** 571219.35
**ELEVATION (Sediment Surface)** 594.3 ft (NAVD 88)
**WATER DEPTH** 8.6 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SB20-0520 | | SW-SM | SILTY CLAY: brown/ greyish brown, low plasticity, cohesive, moist, trace organics, bed of wet silty clay and f grained sand (@2.3-2.4') | |
| -2 | | | | | | | |
| -3 | 24 | Composite | SW15-SB20-2040 | | | | |
| | | | | | SM | SILT & SAND: dark brown/ dark grey, some gravel and pebbles (0.25-0.4' diameter), semi-cohesive, saturated, trace organics, slight sheen, slight chemical odor, trace black material (coke) | 3.6<br>3.7 |
| -4 | | | | | | | |
| -5 | 24 | Composite | SW15-SB20-4060 | | SP-SM | SILTY SAND: dark brown/ dark grey, some gravel and pebbles (0.25-0.4' diameter), small cobble (@6.65'), semi-cohesive, saturated, trace organics, slight sheen, slight chemical odor, some black material (coke) | |
| -6 | | | | | | | |
| -7 | 24 | Composite | SW15-SB20-6080 | | SW-SM | SILTY SAND: dark brown, with peat, cohesive, semi-moist, trace rootlets | 7.0<br>7.3 |
| | | | | | SW-SM | SILTY SAND: dark brown, with peat, some grey/ brown clay, cohesive, semi-moist, trace rootlets, some large woody debris | 8.0 |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

End of Boring at 10 ft.

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB21

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/16/2015 2:10:00 PM
**DATE LOGGED** 7/17/2015 9:07:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 94%
**LOCATION** Superior, WI
**NORTHING*** 5174976.06
**EASTING*** 571309.84
**ELEVATION (Sediment Surface)** 591.5 ft (NAVD 88)
**WATER DEPTH** 11.7 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | ML | SILT: brown, some clay, low plasticity, cohesive, soft, very moist, trace rootlets throughout | 1.0 |
| -1 | 18 | Composite | SW15-SB21-0520 | | CL-ML | SILTY CLAY: brown, medium plasticity, cohesive, moist, trace rootlets throughout, thin bed of woody debris (@1') | 2.8 |
| -2 | | | | | | | |
| -3 | 24 | Composite | SW15-SB21-2040 | | CL-ML | SILTY CLAY: brown, medium-high plasticity, cohesive, moist, trace rootlets throughout | 3.5 |
| -4 | | | | | OL | PEAT: dark brown, organic debris, some silt, moist | 4.3 |
| -5 | 24 | Composite | SW15-SB21-4060 | | SW-SM | SAND: brown/ reddish brown, f-m grained sand, trace silt, cohesive, semi-moist, trace organics (rootlets), trace black silty clay (@4.8') | 6.6 |
| -6 | | | | | | | |
| -7 | | | | | | End of Boring at 3.5 ft. | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB22

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/18/2015 9:26:00 AM
**DATE LOGGED** 7/20/2015 10:05:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 100%
**LOCATION** Superior, WI
**NORTHING*** 5175442.79
**EASTING*** 571262.48
**ELEVATION (Sediment Surface)** 573.1 ft (NAVD 88)
**WATER DEPTH** 29.8 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SW-SC | SILT & SAND: brown, f grained sand, trace clay, soft, cohesive, saturated, trace organics | 0.8 |
| -1 | 18 | Composite | SW15-SB22-0520 | | CL-ML | SILTY CLAY: brown, trace f grained sand, low plasticity, cohesive, moist, trace organics | 1.9 |
| -2 | | | | | SW-SC | SILT & SAND: brown, vf grained sand, trace clay, soft, saturated, trace rootlets | 2.1 |
| | | | | | SW-SM | SAND: brown/ reddish brown, f-m grained sand, trace silt, tightly packed, cohesive, moist | 3.0 |
| -3 | 24 | Composite | SW15-SB22-2040 | | SW-SM | INTERSTRATIFIED - SAND: brown/ reddish brown, f-m grained sand, trace silt, tightly packed, cohesive, moist, SILTY CLAY: brown/ reddish brown, medium to high plasticity, cohesive, moist, trace grey mottling | 3.6 |
| -4 | | | | | CL-ML | SILTY CLAY: brown/ reddish brown, medium to high plasticity, cohesive, moist, trace grey mottling | 4.0 |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | End of Boring at 8.5 ft. | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB23

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/16/2015
**DATE LOGGED** 7/17/2015 10:20:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 100%
**LOCATION** Superior, WI
**NORTHING*** 5175212.61
**EASTING*** 571360.4
**ELEVATION (Sediment Surface)** 594.2 ft (NAVD 88)
**WATER DEPTH** 9.1 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | OH | SILT: brown/ greyish brown, trace clay, low plasticity, soft, cohesive, saturated, trace organics | 0.3 |
| -1 | 18 | Composite | SW15-SB23-0520 | | SW-SM | SILT & SAND: brown/ greyish brown, f grained sand, trace clay, tightly packed, cohesive, moist, trace organics | 1.8 |
| -2 | | | | | SW-SM | SAND: brown, f-m grained sand, trace silt, trace fine gravel, cohesive, moist, trace organics | 2.0 |
| | | | | | CL-ML | SILTY CLAY: brown, some vf grained sand, low to medium plasticity, cohesive, moist, trace organics | 2.7 |
| -3 | 24 | Composite | SW15-SB23-2040 | | SW-SM | SAND: reddish brown, f-m grained sand, trace silt, tightly packed, cohesive, moist | 3.7 |
| -4 | | | | | CL-ML | SILTY CLAY: brown/ light brown, medium plasticity, cohesive, moist, trace rootlets | 4.3 |
| -5 | 24 | Composite | SW15-SB23-4060 | | CL-ML | SILTY CLAY: brown/ greyish brown, medium plasticity, cohesive, moist, trace rootlets | |
| -6 | | | | | | | |
| -7 | 24 | Composite | SW15-SB23-6080 | | | | 7.3 |
| | | | | | CL-ML | SILTY CLAY: brown/ greyish brown, some reddish brown m grained sand, medium plasticity, cohesive, moist, trace rootlets | 7.6 |
| -8 | | | | | CL-ML | SILTY CLAY: brown, medium to high plasticity, cohesive, moist, some rootlets | 8.0 |
| -9 | | | | | | End of Boring at 4 ft. | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB24

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/15/2015 4:50:00 PM
**DATE LOGGED** 7/16/2015 8:05:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 93%
**LOCATION** Superior, WI
**NORTHING*** 5174810.06
**EASTING*** 571382.68
**ELEVATION (Sediment Surface)** 589.6 ft (NAVD 88)
**WATER DEPTH** 13.7 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | MH | SILT: brown/ dark grey, trace f grained sand, trace clay, low plasticity, cohesive, moist, some organics, stick (@0.75') | 1.0 |
| -1 | 18 | Composite | SW15-SB24-0520 | | OL | SILT & PEAT: dark brown, some m grained sand, cohesive, moist, trace woody debris (chips 0.2' long) | 1.8 |
| -2 | | | | | OL | SILT & PEAT: dark brown, some m grained sand, cohesive, semi-moist, trace woody debris (chips 0.2' long), bed of light brown silty clay (@2.3') | 2.8 |
| -3 | 24 | Composite | SW15-SB24-2040 | | SW-SM | SAND: brown/ reddish brown, m-c grained sand, trace silt, trace interstitial fine rounded gravel, tightly packed, cohesive | |
| -4 | 11 | Composite | SW15-SB24-4060 | | | | 4.9 |
| -5 | | | | | | End of Boring at 3 ft. | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB25

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/15/2015 4:08:00 PM
**DATE LOGGED** 7/16/2015 9:18:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 110%
**LOCATION** Superior, WI
**NORTHING*** 5174642.34
**EASTING*** 571538.89
**ELEVATION (Sediment Surface)** 593.6 ft (NAVD 88)
**WATER DEPTH** 9.6 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | OH | SILT: brown, some m grained sand, semi-cohesive, soft, saturated, trace organics | 0.7 |
| -1 | 18 | Composite | SW15-SB25-0520 | | CL-ML | SILTY CLAY: light brown, medium plasticity, cohesive, moist, trace organics | 1.0 |
| -2 | | | | | CL-ML | SILTY CLAY: dark brown/ grey, with peat, some f-m grained sand, low plasticity, cohesive, trace clay (@1.5') | 2.3 |
| -3 | 15 | Composite | SW15-SB25-2040 | | CL | CLAY: light brown/ reddish brown, trace silt, high plasticity, cohesive, semi-moist | 3.3 |
| -4 | | | | | | End of Boring at 4.25 ft. | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB26

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/16/2015 3:43:00 PM
**DATE LOGGED** 7/17/2015 8:30:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 82%
**LOCATION** Superior, WI
**NORTHING*** 5174993.24
**EASTING*** 571616.93
**ELEVATION (Sediment Surface)** 589.7 ft (NAVD 88)
**WATER DEPTH** 13.5 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | CL-ML | SILTY CLAY: dark brown/ grey, low plasticity, cohesive, soft, very moist, trace organics, woody debris (@1') | 1.6 |
| -1 | 18 | Composite | SW15-SB26-0520 | | | | |
| -2 | | | | | CL-ML | SILTY CLAY: dark brown/ grey, medium plasticity, cohesive, firm, very moist, trace organics | 2.3 |
| | | | | | OL | PEAT: brown/ dark brown, some silt, some f-m grained sand, low plasticity, cohesive, moist, trace organics | 2.8 |
| -3 | 24 | Composite | SW15-SB26-2040 | | CL-ML | SILTY CLAY: brown, some m grained sand, low to medium plasticity, cohesive, moist, trace organics | 3.3 |
| -4 | | | | | SW-SM | SAND: brown/ reddish brown, f-m grained sand, trace silt, cohesive, moist, trace organics | 4.9 |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | End of Boring at 9 ft. | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB27

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/18/2015 8:36:00 AM
**DATE LOGGED** 7/20/2015 10:55:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5175028.79
**EASTING*** 571677.45
**ELEVATION (Sediment Surface)** 572.5 ft (NAVD 88)
**WATER DEPTH** 30.7 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | MH | SILT: brown/ dark brown, trace vf grained sand, trace clay, low plasticity, cohesive, soft, saturated, trace organics | 0.5 |
| -1 | 18 | Composite | SW15-SB27-0520 | | ML | SILT: brown, trace to some clay, low to medium plasticity, cohesive, moist, trace organics | 1.4 |
| | | | | | MH | SILT: brown, some vf grained sand, loose, soft, saturated, trace organics | 1.6 |
| -2 | | | | | SW-SM | SAND: brown, vf-f grained sand, some silt, tightly packed, cohesive, semi-moist | 2.3 |
| | | | | | SW-SM | SAND: brown, f-m grained sand, trace silt, tightly packed, cohesive, semi-moist | 2.7 |
| -3 | 24 | Composite | SW15-SB27-2040 | | SC-SM | SAND: brown, vf grained sand, some silty clay, low to medium plasticity, cohesive, semi-moist | 4.0 |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | End of Boring at 7 ft. | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB28

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/9/2015 2:46:00 PM
**DATE LOGGED** 7/10/2015 9:57:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 100%
**LOCATION** Superior, WI
**NORTHING*** 5175324.88
**EASTING*** 571758.8
**ELEVATION (Sediment Surface)** 586.8 ft (NAVD 88)
**WATER DEPTH** 16.1 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SB28-0520 | | CL-ML | SILTY CLAY: brown, trace m grained sand, low to medium plasticity, cohesive, soft, very moist, trace organics, trace rootlets | 1.8 |
| -2 | | | | | SP-SM | SILT & SAND: brown, m grained sand, trace c grained sand, medium plasticity, tightly packed, moist | 2.3 |
| | | | | | CL-ML | SILTY CLAY: brown, trace f-m grained sand, low plasticity, cohesive, soft, moist, trace rootlets | 2.8 |
| -3 | 24 | Composite | SW15-SB28-2040 | | | | |
| -4 | | | | | | | |
| -5 | 24 | Composite | SW15-SB28-4060 | | | | |
| -6 | | | | | CL-ML | SILTY CLAY: brown, medium to high plasticity, cohesive, moist, rootlets throughout, trace light brown clay mottling | |
| -7 | 24 | Composite | SW15-SB28-6080 | | | | |
| -8 | | | | | | | |
| -9 | 24 | Composite | SW15-SB28-8010 | | | | |
| -10 | | | | | | | 10.0 |

End of Boring at 4 ft.

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB29

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/14/2015 11:50:00 AM
**DATE LOGGED** 7/14/2015 3:00:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5174259.9
**EASTING*** 571894.35
**ELEVATION (Sediment Surface)** 595.9 ft (NAVD 88)
**WATER DEPTH** 7 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SB29-0520 | | CL-ML | SILT & CLAY: greyish brown, trace f grained sand, low to medium plasticity, cohesive, moist, trace organics (rootlets) | 1.4 |
| | | | | | CL-ML | SILTY CLAY: greyish brown/ brown, trace m grained sand, low to medium plasticity, cohesive, large black wood chip (@1.4-1.5') | 1.6 |
| | | | | | CL-ML | | 1.8 |
| -2 | | | | | CL | SILTY CLAY: brown/ reddish brown, with m grained sand, low to medium plasticity, cohesive, trace rootlets | |
| -3 | 24 | Composite | SW15-SB29-2040 | | | CLAY: reddish brown, trace silt, medium to high plasticity, tightly packed, cohesive, semi-moist | 2.8 |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | End of Boring at 8 ft. | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB30

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/15/2015 2:48:00 PM
**DATE LOGGED** 7/16/2015 8:45:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 90%
**LOCATION** Superior, WI
**NORTHING*** 5174711.23
**EASTING*** 571914.27
**ELEVATION (Sediment Surface)** 599.2 ft (NAVD 88)
**WATER DEPTH** 4 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SB30-0520 | | | | |
| -2 | | | | | SW-SM | SAND: brown/ reddish brown, f-m grained sand, trace silt, tightly packed, moist | |
| -3 | 24 | Composite | SW15-SB30-2040 | | | | |
| -4 | | | | | | | 4.2 |
| -5 | 24 | Composite | SW15-SB30-4060 | | SM | SAND & SILT: brown, f grained sand, trace m grained sand, tightly packed, cohesive, moist | 5.3 |
| | | | | | CL-ML | SILTY CLAY: brown, medium plasticity, cohesive, moist | 5.4 |
| | | | | | SW | SAND: brown/ reddish brown, m-f grained sand, tightly packed, moist | 5.6 |
| -6 | | | | | CL-ML | SILTY CLAY: brown, medium to high plasticity, cohesive, moist, thin peaty organic laminations (@5.8-5.9') | 6.3 |
| -7 | | | | | | End of Boring at 5.3 ft. | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB31

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/14/2015 1:04:00 PM
**DATE LOGGED** 7/14/2015 3:40:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5174041.48
**EASTING*** 572107.3
**ELEVATION (Sediment Surface)** 591.8 ft (NAVD 88)
**WATER DEPTH** 11.3 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | ML | SILT: brown/ greyish brown, trace f-m grained sand, low plasticity, semi-cohesive, loose, moist to saturated, trace organics (rootlets) | 0.7 |
| -1 | 14 | Composite | SW15-SB31-0520 | | SW-SM | SAND: brown/ reddish brown, m grained sand, trace silt, tightly packed, semi-cohesive, moist, trace rootlets (@0.7-0.8') | 1.6 |
| -2 | | | | | | | |
| -3 | | | | | | End of Boring at 3 ft. | |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB32

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/15/2015 2:14:00 PM
**DATE LOGGED** 7/16/2015 10:15:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 100%
**LOCATION** Superior, WI
**NORTHING*** 5174455.78
**EASTING*** 572179.55
**ELEVATION (Sediment Surface)** 595.0 ft (NAVD 88)
**WATER DEPTH** 8.1 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SB32-0520 | | SM | SAND & SILT: dark brown, m grained sand, low plasticity, cohesive, moist, trace organics | 1.5 |
| -2 | | | | | CL-ML | SILTY CLAY: dark brown, trace f grained sand, medium plasticity, cohesive, moist, trace organics (rootlets) | |
| -3 | 24 | Composite | SW15-SB32-2040 | | | | 3.1 |
| | | | | | CL-ML | SILTY CLAY: dark brown, trace f grained sand, medium plasticity, cohesive, moist, trace organics (rootlets), peat throughout | 3.3 |
| | | | | | CL-ML | SILTY CLAY: dark brown, trace f grained sand, medium plasticity, cohesive, moist, trace organics (rootlets) | 4.0 |
| -4 | | | | | CL-ML | | 4.1 |
| | | | | | CL-ML | SILTY CLAY: dark brown, trace f grained sand, medium plasticity, cohesive, moist, trace organics (rootlets), peat throughout | 4.8 |
| -5 | 24 | Composite | SW15-SB32-4060 | | | SILTY CLAY: brown, medium plasticity, cohesive, moist | |
| -6 | | | | | CL-ML | SILTY CLAY: dark brown, with peat (woody debris), medium plasticity, cohesive, moist | 6.6 |
| -7 | 24 | Composite | SW15-SB32-6080 | | CL-ML | SILTY CLAY: reddish brown, with peat (woody debris), medium plasticity, cohesive, moist | 7.4 |
| -8 | 12 | Composite | SW15-SB32-8010 | | CL-ML | SILTY CLAY: reddish brown, some f grained sand, medium to high plasticity, cohesive, moist, red sand lense (@8'), black wood (@8.3') | |
| -9 | | | | | | | 9.0 |
| -10 | | | | | | End of Boring at 6 ft. | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

SEDIMENT LOG SUPERIOR WATERFRONT.GPJ 11/12/15

# SEDIMENT BORING SW15-SB33

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/14/2015 3:28:00 PM
**DATE LOGGED** 7/15/2015 9:20:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5173796.76
**EASTING*** 572323.99
**ELEVATION (Sediment Surface)** 593.1 ft (NAVD 88)
**WATER DEPTH** 9.9 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SM | SAND & SILT: brown/ dark brown, f-m grained sand, tightly packed, cohesive, moist, trace organics (rootlets) | 0.6 |
| -1 | 18 | Composite | SW15-SB33-0520 | | SW-SM | SAND: brown, f-m grained, trace silt, tightly packed, moist | 1.7 |
| | | | | | SW-SM | SAND: brown, m-c grained, trace silt, semi-tightly packed, moist | 1.8 |
| -2 | | | | | SW-SM | SAND & SILT: brown, m-c grained sand, semi-tightly packed, very moist | 2.4 |
| -3 | | | | | | | |
| -4 | | | | | | | |
| -5 | | | | | | End of Boring at 5 ft. | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB34

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/15/2015 11:32:00 AM
**DATE LOGGED** 7/15/2015 2:00:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 84%
**LOCATION** Superior, WI
**NORTHING*** 5174280.57
**EASTING*** 572339.87
**ELEVATION (Sediment Surface)** 599.2 ft (NAVD 88)
**WATER DEPTH** 3.8 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SW-SM | SAND: brown/ dark brown, f-m grained sand, trace dark brown silt, tightly packed, semi-moist | 0.3 |
| -1 | 24 | Composite | SW15-SB34-0520 | | SW-SM | SAND: brown, f-m grained sand, trace silt, tightly packed, semi-moist | |
| -2 | | | | | | | 2.3 |
| -3 | | | | | | | |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

End of Boring at 10 ft.

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB35

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/18/2015 7:32:00 AM
**DATE LOGGED** 7/20/2015 10:35:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5174350.12
**EASTING*** 572364.61
**ELEVATION (Sediment Surface)** 572.6 ft (NAVD 88)
**WATER DEPTH** 30.5 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SC-SM | SILT: brown, trace f grained sand, trace clay, low plasticity, semi-cohesive, soft, saturated, trace organics | 0.3 |
| -1 | 18 | Composite | SW15-SB35-0520 | | CL-ML | SILTY CLAY: brown/ light brown, low to medium plasticity, cohesive, soft, very moist, trace organics (rootlets) | 2.0 |
| -2 | | | | | | | |
| -3 | 24 | Composite | SW15-SB35-2040 | | SW-SM | SAND: brown, f-m grained sand, some silt, tightly packed, cohesive, moist, trace silty clay (@3.8-3.9') | 4.3 |
| -4 | | | | | CL | CLAY: brown/ reddish brown, trace silt, high plasticity, cohesive, semi-moist | 4.5 |
| -5 | | | | | | End of Boring at 2.25 ft. | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB36

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/9/2015 3:58:00 PM
**DATE LOGGED** 7/10/2015 10:45:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 106%
**LOCATION** Superior, WI
**NORTHING*** 5174520.2
**EASTING*** 572549.6
**ELEVATION (Sediment Surface)** 591.7 ft (NAVD 88)
**WATER DEPTH** 11.1 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | CL-ML | CLAYEY SILT: brown, trace f grained sand, low plasticity, cohesive, soft, moist, trace rootlets | 0.8 |
| -1 | 18 | Composite | SW15-SB36-0520 | | CL-ML | CLAYEY SILT: brown, trace f grained sand, medium plasticity, cohesive, soft, moist, trace rootlets | 1.3 |
| -2 | | | | | CL-ML | CLAYEY SILT: dark brown, with peat, low plasticity, cohesive, soft, moist, trace large wood chips (~0.25') | 2.7 |
| -3 | 20 | Composite | SW15-SB36-2040 | | SM | SAND: dark brown/ brown, m grained sand, some silt, low plasticity, tightly packed, moist, trace organics, trace large wood chips | 3.7 |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | End of Boring at 7 ft. | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB37

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/15/2015 10:58:00 AM
**DATE LOGGED** 7/15/2015 2:50:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5174044.54
**EASTING*** 572592.78
**ELEVATION (Sediment Surface)** 595.8 ft (NAVD 88)
**WATER DEPTH** 7.3 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SM | SAND: brown, f-m grained sand, trace silt, cohesive, saturated, trace organics | 0.3 |
| | 18 | Composite | SW15-SB37-0520 | | SM | SAND: brown/ dark brown, f-m grained sand, some silt, tightly packed, cohesive, moist, trace black silt, trace organics | 1.1 |
| -1 | | | | | SM | SAND: brown, m grained sand, some silt, tightly packed, cohesive, moist | 1.5 |
| | | | | | CL-ML | SILTY CLAY: brown, trace f grained sand, medium plasticity, cohesive, moist, trace organics | 1.8 |
| -2 | | | | | SW-SM | SAND: brown, f-m grained sand, trace silt, tightly packed, cohesive, moist, trace organics (rootlets) | 2.2 |
| -3 | | | | | | End of Boring at 2 ft. | |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB38

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/14/2015 4:26:00 PM
**DATE LOGGED** 7/15/2015 9:00:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 103%
**LOCATION** Superior, WI
**NORTHING*** 5173686.08
**EASTING*** 572487.29
**ELEVATION (Sediment Surface)** 591.7 ft (NAVD 88)
**WATER DEPTH** 11.3 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SM | SAND: dark brown, f-m grained sand, some silt, tightly packed, cohesive, moist, trace organics, fragmented bivalve shells | 0.3 |
| -1 | 21 | Composite | SW15-SB38-0520 | | SM | SAND: brown/ reddish brown, f-m grained sand, some silt, tightly packed, cohesive, moist | 1.8 |
| -2 | | | | | | | |
| -3 | | | | | | | |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | End of Boring at 9 ft. | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB39

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/15/2015 9:45:00 AM
**DATE LOGGED** 7/15/2015 1:30:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5173893.43
**EASTING*** 572735.74
**ELEVATION (Sediment Surface)** 594.2 ft (NAVD 88)
**WATER DEPTH** 8.7 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SC-SM | SILT & SAND: brown/ dark brown, f grained sand, trace clay, low to medium plasticity, cohesive, moist, trace rootlets, trace bivalve shells | 0.4 |
| | | | | | OL | PEAT: dark brown, silt and organics, trace clay, medium plasticity, cohesive, moist, trace small branches | 0.5 |
| -1 | 18 | Composite | SW15-SB39-0520 | | ML | SILT: brown, some f grained sand, trace clay, low plasticity, cohesive, moist, trace organics | 1.3 |
| | | | | | ML | SILT: brown, trace f grained sand, trace clay, low plasticity, cohesive, saturated, trace organics | 1.4 |
| | | | | | CL-ML | SILTY CLAY: brown, some f grained sand, low plasticity, cohesive, moist, trace organics | 1.8 |
| -2 | | | | | CL-ML | SILTY CLAY: brown, trace f grained sand, medium plasticity, cohesive, moist, trace organics | 2.8 |
| -3 | 24 | Composite | SW15-SB39-2040 | | SW-SM | SAND: dark brown/ dark red, f-m grained sand, trace silt, tightly packed, cohesive, moist | 4.5 |
| -4 | | | | | | | |
| -5 | | | | | | End of Boring at 2.5 ft. | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

SEDIMENT LOG SUPERIOR WATERFRONT.GPJ 11/12/15

# SEDIMENT BORING SW15-SB40

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/15/2015 8:47:00 AM
**DATE LOGGED** 7/15/2015 2:25:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 50%
**LOCATION** Superior, WI
**NORTHING*** 5173088.01
**EASTING*** 573132.67
**ELEVATION (Sediment Surface)** 585.9 ft (NAVD 88)
**WATER DEPTH** 17 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SW-SM | SAND: brown, f-m grained sand, trace silt, tightly packed, cohesive, moist, trace organics, trace bivalves | 0.3 |
| -1 | 18 | Composite | SW15-SB40-0520 | | SW-SM | SAND: brown, m-c grained sand, trace silt, tightly packed, moist, some interstitial angular pebbles | 1.2 |
| | | | | | CL-ML | SILTY CLAY: brown, trace m grained sand, medium plasticity, cohesive, moist, trace organics, some wood chips | 1.3 |
| -2 | | | | | SW-SM | SAND: brown, m-c grained, trace silt, tightly packed, moist, interstitial subangular pebbles | 2.0 |
| -3 | | | | | | End of Boring at 2.75 ft. | |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SB41

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/14/2015 5:02:00 PM
**DATE LOGGED** 7/15/2015 8:00:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5173237
**EASTING*** 573259.84
**ELEVATION (Sediment Surface)** 595.6 ft (NAVD 88)
**WATER DEPTH** 7.4 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SM | SILT & SAND: brown, m grained sand, non-cohesive, saturated, some fine organics | 0.2 |
| | | | | | SW-SM | SAND: brown, m grained sand, trace silt, non-cohesive, moist, some organics throughout | 0.7 |
| -1 | 18 | Composite | SW15-SB41-0520 | | SC-SM | SAND & SILT: brown, f-m grained sand, trace clay, low plasticity, semi-cohesive, moist, some organics | 1.2 |
| | | | | | CL-ML | SILTY CLAY: brown, medium plasticity, cohesive, moist, trace organics | 1.3 |
| | | | | | CL-ML | | 1.4 |
| | | | | | SW-SC | SILTY CLAY: brown, medium plasticity, cohesive, moist, some organics (small branches, woody chips) | 1.8 |
| -2 | | | | | CL-ML | SAND: brown, f-m grained sand, trace clay, moist, trace organics, trace bivalve shells | 2.3 |
| | | | | | SW | | 2.4 |
| -3 | 22 | Composite | SW15-SB41-2040 | | CL-ML | SILTY CLAY: brown, trace f grained sand, medium plasticity, cohesive, moist, trace black organics | |
| | | | | | OL | SAND: brown, f-m grained sand, tightly packed, moist, trace organics | 3.1 |
| | | | | | CL | SILTY CLAY: brown, medium plasticity, cohesive, moist, trace organics, bivalve shell (@2.8'), trace sand lamination (@2.7') | 3.3 |
| -4 | | | | | | PEAT: dark brown, some silt and f grained sand, medium plasticity, cohesive, moist | 3.8 |
| | | | | | | CLAY: brown to reddish brown, high plasticity, cohesive, moist | |
| -5 | | | | | | | |
| -6 | | | | | | End of Boring at 6 ft. | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SLB01

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/9/2015
**DATE LOGGED** 7/9/2015 2:05:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 100%
**LOCATION** Superior, WI
**NORTHING*** 5175707.15
**EASTING*** 566252.56
**ELEVATION (Sediment Surface)** 596.3 ft (NAVD 88)
**WATER DEPTH** 6.5 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | OH | SILT: dark brown, domr vf grained sand, trace clay, low plasticity, soft, moist, lenses of black silty vf grained sand, trace rootlets | 0.5 |
| -1 | 18 | Composite | SW15-SLB01-0520 | | SM | SILT & SAND: dark brown, vf grained sand, low to medium plasticity, moist, trace ogranics (rootlets and wood) | |
| -2 | | | | | | | 2.8 |
| -3 | 24 | Composite | SW15-SLB01-2040 | | CL-ML | SILTY CLAY: dark brown, medium plasticity, moist, trace organics throughout, large piece of wood (@5.1-5.25') | |
| -4 | | | | | | | |
| -5 | 24 | Composite | SW15-SLB01-4060 | | | | |
| -6 | | | | | | | |
| -7 | 24 | Composite | SW15-SLB01-6080 | | | | |
| -8 | | | | | | | |
| -9 | 24 | Composite | SW15-SLB01-8010 | | | | |
| -10 | | | | | | | 10.0 |

End of Boring at 3.5 ft.

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SLB02

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/9/2015 10:55:00 AM
**DATE LOGGED** 7/9/2015 1:05:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 82%
**LOCATION** Superior, WI
**NORTHING*** 5175955.91
**EASTING*** 567027.73
**ELEVATION (Sediment Surface)** 575.5 ft (NAVD 88)
**WATER DEPTH** 27.4 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SLB02-0520 | | SW-SC | SAND: reddish brown, f grained sand, trace clay lenses, tightly packed, cohesive, semi-moist | |
| -2 | | | | | | | 2.3 |
| -3 | 24 | Composite | SW15-SLB02-2040 | | SW | SAND: reddish brown, f grained sand, tightly packed, cohesive, semi-moist | |
| -4 | | | | | | | |
| -5 | 24 | Composite | SW15-SLB02-4060 | | | | |
| -6 | | | | | | | 6.1 |
| -7 | 24 | Composite | SW15-SLB02-6080 | | SW | SAND: reddish brown, f grained sand, tightly packed, cohesive | |
| -8 | | | | | | | 8.2 |
| -9 | | | | | | End of Boring at 2.5 ft. | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SLB03

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/9/2015
**DATE LOGGED** 7/9/2015 3:35:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 100%
**LOCATION** Superior, WI
**NORTHING*** 5176498.19
**EASTING*** 567208.87
**ELEVATION (Sediment Surface)** 592.3 ft (NAVD 88)
**WATER DEPTH** 10.5 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SM | SILT & SAND: black/ dark grey, f grained sand, trace m grained sand, low plasticity, cohesive, moist, trace rootlets and small wood pieces throughout, strong hydrocarbon/ chemical odor, large branch (@6.75-7'), slight sheen | |
| -1 | 18 | Composite | SW15-SLB03-0520 | | | | |
| -2 | | | | | | | |
| -3 | 24 | Composite | SW15-SLB03-2040 | | | | |
| -4 | | | | | | | |
| -5 | 24 | Composite | SW15-SLB03-4060 | | | | |
| -6 | | | | | | | |
| -7 | 24 | Composite | SW15-SLB03-6080 | | | | 7.0 |
| -8 | | | | | SC-SM | SILT & SAND: black/ dark grey, f grained sand, trace m grained sand, trace clay, medium plasticity, very cohesive, moist, trace rootlets and small wood pieces throughout, strong hydrocarbon/ chemical odor, large branch (@6.75-7'), slight sheen | |
| -9 | 24 | Composite | SW15-SLB03-8010 | | | | 9.2 |
| | | | | | GP | GRAVEL: black, f-c grained, very strong chemical odor, potentiall coal/coke, slight sheen | 9.3 |
| | | | | | CL-ML | SILTY CLAY: black/ dark brown, some vf grained | |
| -10 | | | | | | | 10.0 |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

SEDIMENT LOG SUPERIOR WATERFRONT.GPJ 11/12/15

# SEDIMENT BORING SW15-SLB03

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/9/2015
**DATE LOGGED** 7/9/2015 3:35:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 100%
**LOCATION** Superior, WI
**NORTHING*** 5176498.19
**EASTING*** 567208.87
**ELEVATION (Sediment Surface)** 592.3 ft (NAVD 88)
**WATER DEPTH** 10.5 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| -10 | | | | | | sand, medium plasticity, cohesive, moist, trace rootlers, strong chemical odor, slight sheen | |
| | | | | | | End of Boring at 1.75 ft. | |
| -11 | | | | | | | |
| -12 | | | | | | | |
| -13 | | | | | | | |
| -14 | | | | | | | |
| -15 | | | | | | | |
| -16 | | | | | | | |
| -17 | | | | | | | |
| -18 | | | | | | | |
| -19 | | | | | | | |
| -20 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SLB04

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/10/2015 2:11:00 PM
**DATE LOGGED** 7/13/2015 3:20:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 68%
**LOCATION** Superior, WI
**NORTHING*** 5176898.9
**EASTING*** 567892.7
**ELEVATION (Sediment Surface)** 598.4 ft (NAVD 88)
**WATER DEPTH** 4.6 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | CL-ML | SILTY CLAY: grey/ brown, trace vf grained sand, low to medium plasticity, medium consistency, moist, trace organics (rootlets, black wood chips) | 0.3 |
| | | | | | CL-ML | SILTY CLAY: brown/ greyish brown, trace vf grained sand, medium plasticity, cohesive, some fine rootlets | 0.9 |
| -1 | 17 | Composite | SW15-SLB-04-0520 | | CL-ML | SILTY CLAY: reddish brown, trace vf grained sand, medium plasticity, cohesive, trace fine rootlets, layer of black m-c grained sand, slight chemical odor | 1.6 |
| | | | | | CL | CLAY: reddish brown, trace silt, high plasticity, cohesive, tightly packed | 1.9 |
| -2 | | | | | | | |
| -3 | | | | | | | |
| -4 | | | | | | | |
| -5 | | | | | | End of Boring at 5 ft. | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

SEDIMENT LOG SUPERIOR WATERFRONT.GPJ 11/12/15

# SEDIMENT BORING SW15-SLB05

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/8/2015 4:45:00 PM
**DATE LOGGED** 7/9/2015 9:25:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 100%
**LOCATION** Superior, WI
**NORTHING*** 5176790.48
**EASTING*** 567973.08
**ELEVATION (Sediment Surface)** 577.4 ft (NAVD 88)
**WATER DEPTH** 25.3 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SLB05-0520 | | ML | SILT: brown/ greyish brown, some clay, trace f grained sand, medium plasticity, cohesive, very moist, trace organics (small wood pieces, rootlets) | |
| -2 | | | | | | | 2.3 |
| | | | | | MH | SILT: brown/ greyish brown, some clay, trace f grained sand, medium plasticity, tightly packed, cohesive, very moist, some organics (rootlets) | 2.9 |
| -3 | 24 | Composite | SW15-SLB05-2040 | | MH | SILT: brown/ greyish brown, some clay, trace f grained sand, medium plasticity, tightly packed, cohesive, very moist, some organics (rootlets), large piece of black tightly packed material, chemical odor | 3.0 |
| | | | | | CL-ML | SILTY CLAY: brown/ greyish brown, medium plasticity, cohesive, moist, trace rootlets, rootlets throughout | |
| -4 | | | | | | | 4.3 |
| | | | | | SM | SAND & SILT: brown, f grained sand, cohesive, moist, trace rootlets | 4.7 |
| -5 | 24 | Composite | SW15-SLB05-4060 | | SW | SAND: brown, vf grained sand, tightly packed, moist | |
| -6 | | | | | | | 6.0 |
| | | | | | | End of Boring at 4 ft. | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SLB06

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/8/2015 3:27:00 PM
**DATE LOGGED** 7/9/2015 8:15:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 104%
**LOCATION** Superior, WI
**NORTHING*** 5176616.04
**EASTING*** 567973.82
**ELEVATION (Sediment Surface)** 583.1 ft (NAVD 88)
**WATER DEPTH** 19.8 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | ML | SILT: dark brown, trace sand, low plasticity, soft, cohesive, very moist, some rootlets | 1.2 |
| -1 | 18 | Composite | SW15-SLB06-0520 | | ML | SILT: brown/ dark brown, trace sand, medium plasticity, soft, cohesive, moist, some rootlets, slight chemical odor | 2.6 |
| -2 | | | | | CL-ML | SILT: brown, trace clay, trace f grained sand, low plasticity, cohesive, moist, trace rootlets, slight chemical odor | 3.2 |
| -3 | 24 | Composite | SW15-SLB06-2040 | | CL-ML | SILTY CLAY: brown, some m grained sand, medium plasticity, cohesive, moist, some organics thoughout (rootlets, wood pieces), slight chemical odor | 4.8 |
| -4 | | | | | CL-ML | SILTY CLAY: brown, some m grained sand, medium plasticity, firm, tightly packed, cohesive, slightly moist, some organics thoughout (rootlets, wood pieces), slight chemical odor | 7.3 |
| -5 | 24 | Composite | SW15-SLB06-4060 | | SW | SAND: light brown/ red, vf grained sand, tightly packed, semi-moist | 7.8 |
| -6 | | | | | | End of Boring at 3.5 ft. | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SLB08

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/8/2015 11:38:00 AM
**DATE LOGGED** 7/8/2015 3:00:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 180%
**LOCATION** Superior, WI
**NORTHING*** 5177106.07
**EASTING*** 568200.58
**ELEVATION (Sediment Surface)** 576.4 ft (NAVD 88)
**WATER DEPTH** 26.7 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SLB08-0520 | | CL-ML | SILT: greyish brown, trace clay, trace f grained sand, low plasticity, soft, moist, trace rootlets | 1.8 |
| -2 | | | | | GP | Large rock and wood chips | 2.1 |
| | | | | | OH | SILT: brown/ grey, some f grained sand, low plasticity, soft, moist/ saturated | 2.5 |
| | | | | | SW-SM | SAND: brown/ reddish brown, m grained sand, some silt, low plasticity, moist | 2.6 |
| | | | | | SW-SM | | 2.8 |
| -3 | 19 | Composite | SW15-SLB08-2040 | | SW-SM | SAND: reddish brown, vf grained sand, some silt, medium plasticity, hard packed, semi-moist | |
| | | | | | | SAND: brown/ reddish brown, f grained sand, some silt, medium plasticity, hard packed, semi-moist | 3.6 |
| -4 | | | | | | End of Boring at 2 ft. | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SLB09

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/8/2015 10:41:00 AM
**DATE LOGGED** 7/8/2015 2:23:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5176844.61
**EASTING*** 568208.25
**ELEVATION (Sediment Surface)** 576.7 ft (NAVD 88)
**WATER DEPTH** 26.3 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | CL-ML | SILT: dark brown/ black, trace clay, trace f grained sand, low plasticity, soft, very moist, trace rootlets, trace black mottling | 0.5 |
| -1 | 18 | Composite | SW15-SLB09-0520 | | CL-ML | CLAYEY SILT: dark brown, trace vf grained sand, low plasticity, soft, moist, trace organics | 1.3 |
| -2 | | | | | SC-SM | SILT & SAND: brown, f-m grained sand, trace clay, medium plasticity, medium pack, some organics (rootlets) | 2.3 |
| -3 | 24 | Composite | SW15-SLB09-2040 | | SC-SM | SILT & SAND: brown, f-m grained sand, trace clay, medium plasticity, medium to tightly packed, trace organics | 4.3 |
| -4 | | | | | | | |
| -5 | 18 | Composite | SW15-SLB09-4060 | | SW-SM | SAND: trace f-m grained sand, trace silt, tightly packed, moist, hard pack, no organics | 5.1 |
| | | | | | SW-SC | SAND: brown, f grained sand, trace clay, hard, tightly packed, semi-moist | 5.5 |
| -6 | | | | | | End of Boring at 5.5 ft. | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SLB10

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/7/2015 4:28:00 PM
**DATE LOGGED** 7/8/2015 10:00:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 82%
**LOCATION** Superior, WI
**NORTHING*** 5176838.86
**EASTING*** 568378.52
**ELEVATION (Sediment Surface)** 598.8 ft (NAVD 88)
**WATER DEPTH** 4 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SM | SAND AND SILT: brown fine sand and silt, moist to saturated, medium plasticity, trace organics | 0.2 |
| | | | | | OL | WOOD: saturated wood chips, trace brown fine sand and silt | 0.3 |
| -1 | 18 | Composite | SW15-SLB10-0520 | | SM | SAND: brown to dark brown fine sand, some silt, moist, medium plastaicity, some rootlets | 1.2 |
| | | | | | OL | WOOD: saturated piece of wood, possibly a branch | 1.3 |
| | | | | | SW | SAND: brown to reddish brown fine to medium sand, some wood chips | 1.9 |
| -2 | 18 | Composite | SW15-SLB10-2040 | | OL | ORGANIC MATTER: dark brown to dark gray peat/organic mater, some fine sand, trace silt, moist, large wood piece @3.1 ft | 3.2 |
| -3 | | | | | CL | CLAY: brown to gray clay with rust mottling, trace silt, moist, high plasticity, trace rootlets | 3.5 |
| -4 | | | | | | End of Boring at 4.25 ft. | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

SEDIMENT LOG SUPERIOR WATERFRONT.GPJ 11/12/15

# SEDIMENT BORING SW15-SLB11

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/7/2015 8:37:00 AM
**DATE LOGGED** 7/7/2015 12:15:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5176246.2
**EASTING*** 568414.18
**ELEVATION (Sediment Surface)** 595.1 ft (NAVD 88)
**WATER DEPTH** 7.8 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | CL-ML | SILT: brown clayey silt, trace sand, very moist, low plasticity, trace organics, large 3" rock | 0.8 |
| -1 | 18 | Composite | SW15-SLB11-0520 | | CL-ML | CLAYEY SILT: brown clayey silt, trace very fine sand, moist, medium plasticity trace organics (rootlets) | 1.4 |
| | | | | | CL-ML | SILTY CLAY: brown to gray brown silty clay, moist, medium plasticity | 1.5 |
| -2 | | | | | | | |
| -3 | 24 | Composite | SW15-SLB11-2040 | | CL-ML | SILTY CLAY: brown silty clay, trace of very fine sand, medium plasticity, moist, trace organics (rootlets), trace gravel, 1" black rock | 3.8 |
| -4 | | | | | | | |
| -5 | 24 | Composite | SW15-SLB11-4060 | | CL-ML | SILTY CLAY: dark brown to dark gray silty clay, medium plasticity, moist, trace rootlets, slight petroleum odor | 5.3 |
| -6 | | | | | CL-ML | SILTY CLAY: dark gray silty clay, medium plasticity, moist, trace rootlets, slight petroleum odor | 6.2 |
| -7 | 24 | Composite | SW15-SLB11-6080 | | CL-ML | SILTY CLAY: dark gray to black silty clay, trace sand, medium plasticity, very moist, trace rootlets, trace subangular gravel, trace wood, strong petroleum odor. 2,878 ppb on PID | 6.8 |
| -8 | | | | | CL-ML | SILTY CLAY: black silty clay, trace very fine sand, medium plasticity, slightly moist, trace rootlets, piece of metal @7.8', strong chemical odor. 7,360 ppb to 23.0 ppm on PID | |
| -9 | | | | | | | |
| -10 | | | | | | | 10.0 |

End of Boring at 9 ft.

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SLB12

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/7/2015 3:37:00 PM
**DATE LOGGED** 7/8/2015 10:48:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 107%
**LOCATION** Superior, WI
**NORTHING*** 5177185.76
**EASTING*** 568406.22
**ELEVATION (Sediment Surface)** 592.9 ft (NAVD 88)
**WATER DEPTH** 9.8 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SLB12-0520 | | CL-ML | SILTY CLAY: brown to dark brown silty clay, trace very fine sand, moist, medium plasticity, trace rootlets | 1.7 |
| -2 | | | | | CL-ML | SILTY CLAY: brown to dark brown silty clay, trace very fine sand, moist, low plasticity, trace rootlets | 1.9 |
| -3 | 24 | Composite | SW15-SLB12-2040 | | CL-ML | SILTY CLAY: dark brown silty clay, some sand, moist, medium plasticity, trace organics throughout | 4.4 |
| -4 | | | | | CL-ML | SAND & SILTY CLAY: dark brown to light brown sand and silty clay, moist, medium plasticity, trace organics | 4.8 |
| -5 | 24 | Composite | SW15-SLB12-4060 | | CL-ML | SILTY CLAY: dark brown silty clay, trace very fine sand, medium to high plasticity, trace organics, lens of very fine sand at 6.1' and 6.3' | 6.7 |
| -6 | | | | | | | |
| -7 | | | | | CL-ML | SILTY CLAY: dark brown silty clay, high plasticity, semi-moist, trace rootlets, trace gray mottling | 8.0 |
| -8 | | | | | | End of Boring at 7.5 ft. | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SLB13

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/7/2015 10:02:00 AM
**DATE LOGGED** 7/7/2015 2:20:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 80%
**LOCATION** Superior, WI
**NORTHING*** 5176448.32
**EASTING*** 568493.75
**ELEVATION (Sediment Surface)** 586.4 ft (NAVD 88)
**WATER DEPTH** 16.2 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SLB13-0520 | | MH | SILT: brown silt with trace clay, moist/saturated, low plasticity, trace rootlets, loose | 1.6 |
| -2 | | | | | CL-ML | SILTY CLAY: light brown to brown silty clay, trace very fine sand, moist, medium plasticity, trace rootlets, loose | 1.9 |
| | | | | | CL-ML | SILTY CLAY: brownt o gray silty clay, trace very fine sand, moist, medium plasticity, trace rootlets | 2.3 |
| -3 | 24 | Composite | SW15-SLB13-2040 | | CL-ML | SILTY CLAY: gray to dark gray silty clay, trace fine sand, moist, medium plasticity, trace organics, chemical odor, trace wood, sheen | 3.0 |
| -4 | | | | | CL-ML | SILTY CLAY: gray to dark brown silty clay, some medium sand, some organics, trace gravel (small -- subangular) | 4.4 |
| -5 | 24 | Composite | SW15-SLB13-4060 | | CL-ML | SILTY CLAY: brown silty clay, some very fine sand, moist, medium plasticity, trace wood, trace rootlets | 5.6 |
| -6 | | | | | SM | SAND & SILT: brown to dark brown sand and silt, moist, tightly packed, medium plasticity | 6.4 |
| -7 | | | | | | End of Boring at 6 ft. | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SLB14

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/7/2015 10:41:00 AM
**DATE LOGGED** 7/7/2015 2:00:00 PM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 115%
**LOCATION** Superior, WI
**NORTHING*** 5176646.73
**EASTING*** 568560.53
**ELEVATION (Sediment Surface)** 582.2 ft (NAVD 88)
**WATER DEPTH** 20.5 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | MH | SILT: brown to grayish brown silt, trace clay, moist, low plasticity, trace rootleets, slight organic/biologic odor | 0.9 |
| -1 | 18 | Composite | SW15-SLB14-0520 | | CL-ML | SILTY CLAY: brown to grayish brown silty clay, moist, medium plasticity, trace rootlets | 1.5 |
| -2 | | | | | CL-ML | SILTY CLAY: brown silty clay, moist, medium plasticity, trace rootlets | 2.3 |
| -3 | | | | | | End of Boring at 2 ft. | |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SLB15

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/7/2015 2:25:00 PM
**DATE LOGGED** 7/8/2015 8:30:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 100%
**LOCATION** Superior, WI
**NORTHING*** 5177027.34
**EASTING*** 568560.51
**ELEVATION (Sediment Surface)** 596.7 ft (NAVD 88)
**WATER DEPTH** 6.2 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | SM | SILT & SAND: brown silt and sand, moist, medium plasticity, trace organics, trace bands of medium sand | 1.6 |
| -1 | 18 | Composite | SW15-SLB15-0520 | | | | |
| -2 | | | | | SM | SILT & SAND: brown silt and sand, moist, medium plasticity, trace organics, trace bands of medium sand, tightly packed | 4.8 |
| -3 | 24 | Composite | SW15-SLB15-2040 | | | | |
| -4 | | | | | | | |
| -5 | 24 | Composite | SW15-SLB15-4060 | | SW-SC | SAND: brown sand, trace clay and silt, loose, trace subangular gravel | 5.0 |
| -6 | | | | | CL-ML | SILTY CLAY: brown silty clay, moist, plastic, tightly packed, trace organic rootlets. @ 5.3' band of brown to black organic matter and small wood chips. Similar bands (<1" thick) @5.9' and 6'. | 6.6 |
| -7 | | | | | CL-ML | SILTY CLAY: brownt to reddish brown silty clay, moist, high plasticity, trace shell debris (oyster/mussel) | 6.8 |
| -8 | | | | | CL-ML | SILTY CLAY: dark brown to black silty clay, moist, medium plasticity, semi-tightly packed, hummocky-peat-like material, some organics (rootlets) | 7.5 |
| -9 | | | | | | End of Boring at 7.5 ft. | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)

# SEDIMENT BORING SW15-SLB16

EA Engineering, Science, and Technology, Inc., PBC

**PROJECT NAME** Superior Waterfront
**DATE COLLECTED** 7/7/2015 1:48:00 PM
**DATE LOGGED** 7/8/2015 9:26:00 AM
**DRILLING CONTRACTOR** Cetacean Marine
**DRILLING METHOD** Vibracore
**LOGGED BY** H. Williams

**RECOVERY** 97%
**LOCATION** Superior, WI
**NORTHING*** 5176756.2
**EASTING*** 568594.24
**ELEVATION (Sediment Surface)** 580.8 ft (NAVD 88)
**WATER DEPTH** 22.1 ft

| DEPTH BELOW MUDLINE (ft) | SAMPLE INTERVAL (inches) | SAMPLE TYPE | SAMPLE SUBMITTED FOR ANALYSIS (Sample ID at sample depth) | GRAPHIC LOG | USCS CLASS | MATERIAL DESCRIPTION | Depth (ft) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| -1 | 18 | Composite | SW15-SLB16-0520 | | ML | SILT: dark brown to gray silt, trace clay and very fine sand, moist, medium to low plasticity, soft, trace organics (rootlets and wood chips) | |
| | | | | | GW-GC | GRAVEL & SILTY CLAY: brown subangular gravel and silty clay, trace coarse sand, moist, low plasticity, trace organics | 1.6 / 1.8 |
| -2 | 11 | Composite | SW15-SLB16-2040 | | CL | CLAY: red to reddish brown clay, trace silt and some gravel to coarse sand, moist medium plasticity, trace organics (rootlets) | 2.3 |
| | | | | | CL | CLAY: red clay, moist, tightly packed, high plasticity | 2.9 |
| -3 | | | | | | End of Boring at 3 ft. | |
| -4 | | | | | | | |
| -5 | | | | | | | |
| -6 | | | | | | | |
| -7 | | | | | | | |
| -8 | | | | | | | |
| -9 | | | | | | | |
| -10 | | | | | | | |

NOTES:
* Coordinates in NAD83 UTM 15N (meters)