

APPENDIX P

Compaction Testing Results

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Professional Service Industries, Inc.
3784 Commerce Court, Suite 300
North Tonawanda, NY 14120

Phone: (716) 694-8657
Fax: (716) 694-8638

Report No: FDR:08061128-3

Issue No: 1

These test results apply only to the specific locations and materials noted and may not represent any other locations or elevations. This report may not be reproduced, except in full, without written permission by Professional Service Industries, Inc. If a non-compliance appears on this report, to the extent that the reported non-compliance impacts the project, the resolution is outside the PSI scope of engagement.

Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC: [REDACTED]

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Testing Details

Tested By: [REDACTED]
Date Tested: 10/21/2019
Field Methods: ASTM D 6938
Gauge Type: Troxler
Model Number: 3430
Serial Number: 32253
Test Mode: Direct Transmission
Standard Count: Density: 2028
Standard Count: Moisture: 652

Proctor Information

Sample ID	Supplier	Material	Method	MDD (lb/ft ³)	OWC (%)
08061128-2-S1 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	120.0	12.5
08061128-2-S2 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	119.5	13.0

Test Results

Test No.	Proctor Sample ID	Probe Depth (in.)	Wet Density (lb/ft ³)	Water Content (%)	OWC Var (%)	Dry Density (lb/ft ³)	Comp (%)	Comp Spec (%)	Results
1	08061128-2-S1	10	124.9	12.5	+0.0	111.0	92.5	≥90	A
2	08061128-2-S1	10	125.0	13.3	+0.8	110.3	91.9	≥90	A
3	08061128-2-S2	10	124.4	14.3	+1.3	108.8	91.0	≥90	A
4	08061128-2-S2	10	124.7	13.9	+0.9	109.5	91.6	≥90	A
5	08061128-2-S2	10	123.7	14.2	+1.2	108.3	90.6	≥90	A
6	08061128-2-S1	10	123.6	11.9	-0.6	110.5	92.1	≥90	A

Location

General Location: Excavation "C" Soil Remediation Backfill

Test No.	Field Sample ID	Location	Test Elev/Depth	Material/Layer
1	S1	See Attached Sketch - Test Location #1, North side of the Excavation	1st Lift	Subgrade Fill
2	S2	See Attached Sketch - Test Location #2, South side of Excavation	2nd Lift	Subgrade Fill
3	S3	See Attached Sketch - Test Location #3, Center of Excavation	3rd Lift	Subgrade Fill
4	S4	See Attached Sketch - Test Location #4, South side of Excavation	4th Lift	Subgrade Fill
5	S5	See Attached Sketch - Test Location #5, Center of Excavation	5th Lift	Subgrade Fill
6	S6	See Attached Sketch - Test Location #6, Southeast Area of Excavation	6th Lift	Subgrade Fill

Comments

(SO) = Sampled By Others
(TO) = Tested By Others
Elevation referenced from bottom of Excavation "C" (Top of Stone Placement)
18" of aggregate material was previously placed in the excavation and compacted

Legend

OWC = Optimum Water Content
MDD = Maximum Dry Density
A = TEST RESULTS COMPLY WITH SPECIFICATION

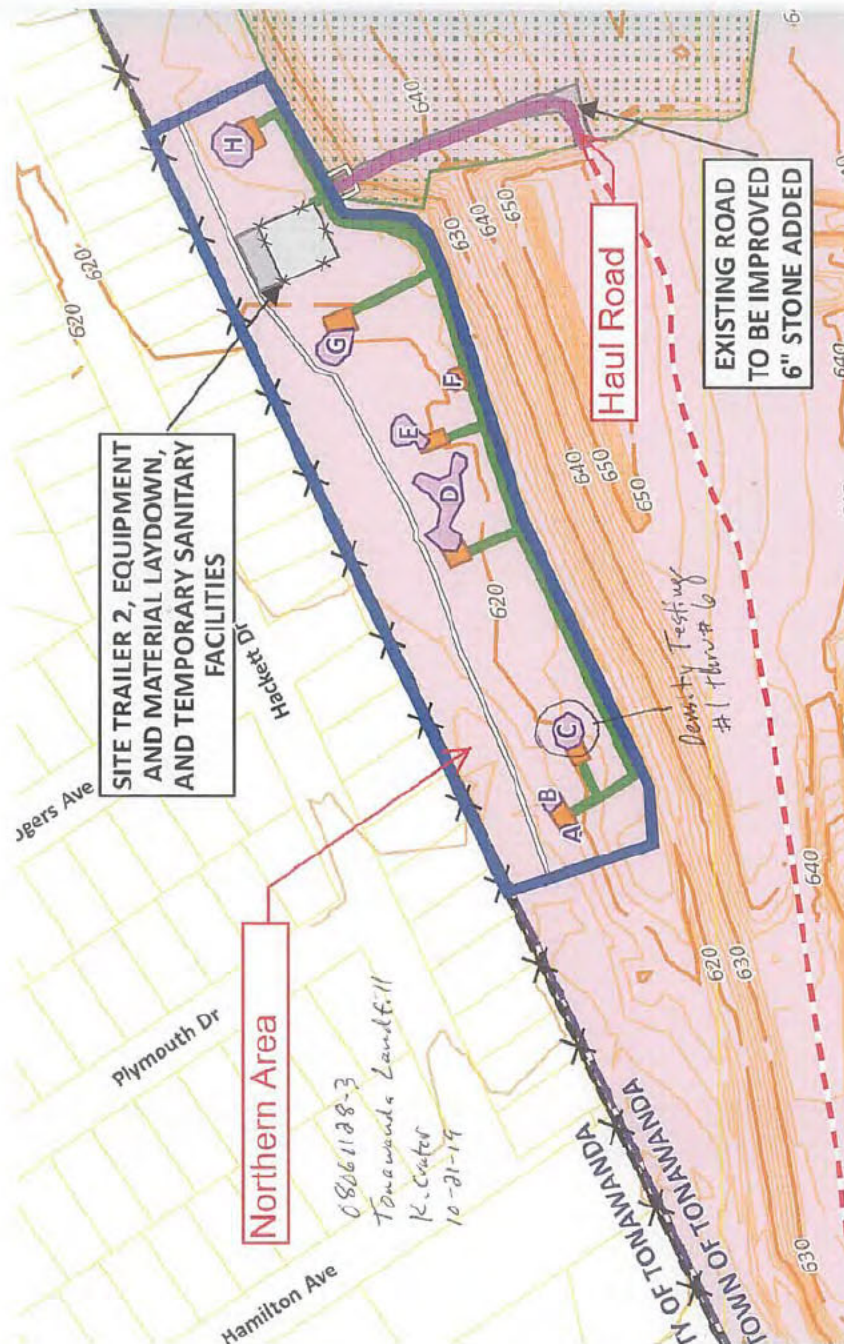
Field Density Test Report

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Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC:

Project: TONAWANDA LANDFILL
TONAWANDA, NY





Professional Service Industries, Inc.
3784 Commerce Court, Suite 300
North Tonawanda, NY 14120

Phone: (716) 694-8657
Fax: (716) 694-8638

Report No: FDR:08061128-4

Issue No: 1

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Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC:

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Ap

Date of Issue: 10/25/2019

Testing Details

Tested By: [REDACTED]
Date Tested: 10/23/2019
Field Methods: ASTM D 6938
Gauge Type: Troxler
Model Number: 3430
Serial Number: 32253
Test Mode: Direct Transmission
Standard Count: Density: 2021
Standard Count: Moisture: 648

Proctor Information

Sample ID	Supplier	Material	Method	MDD (lb/ft ³)	OWC (%)
08061128-2-S1 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	120.0	12.5
08061128-2-S2 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	119.5	13.0

Test Results

Test No.	Proctor Sample ID	Probe Depth (in.)	Wet Density (lb/ft ³)	Water Content (%)	OWC Var (%)	Dry Density (lb/ft ³)	Comp (%)	Comp Spec (%)	Results
1	08061128-2-S1	10	122.1	11.3	-1.2	109.7	91.4	≥90	A
2	08061128-2-S2	10	123.4	14.4	+1.4	107.9	90.3	≥90	A
3	08061128-2-S1	10	124.1	13.5	+1.0	109.3	91.1	≥90	A
4	08061128-2-S1	10	123.9	14.2	+1.7	108.5	90.4	≥90	A

Location

General Location: Excavation "F" Soil Remediation Backfill

Test No.	Field Sample ID	Location	Test Elev/Depth	Material/Layer
1	S1	See Attached Sketch - Test Location #1, South side of the Excavation	1st Lift	Subgrade Fill
2	S2	See Attached Sketch - Test Location #2, Center of the Excavation	2nd Lift	Subgrade Fill
3	S3	See Attached Sketch - Test Location #3, North side of the Excavation	3rd Lift	Subgrade Fill
4	S4	See Attached Sketch - Test Location #4, Center of the Excavation	4th Lift	Subgrade Fill

Comments

(SO) = Sampled By Others
(TO) = Tested By Others
Elevation referenced from bottom of Excavation "F" (Top of Stone placement)
24" of Aggregate material was placed in the excavation and compacted prior to the Subgrade Fill placement

Legend

OWC = Optimum Water Content
MDD = Maximum Dry Density
A = TEST RESULTS COMPLY WITH SPECIFICATION

Field Density Test Report

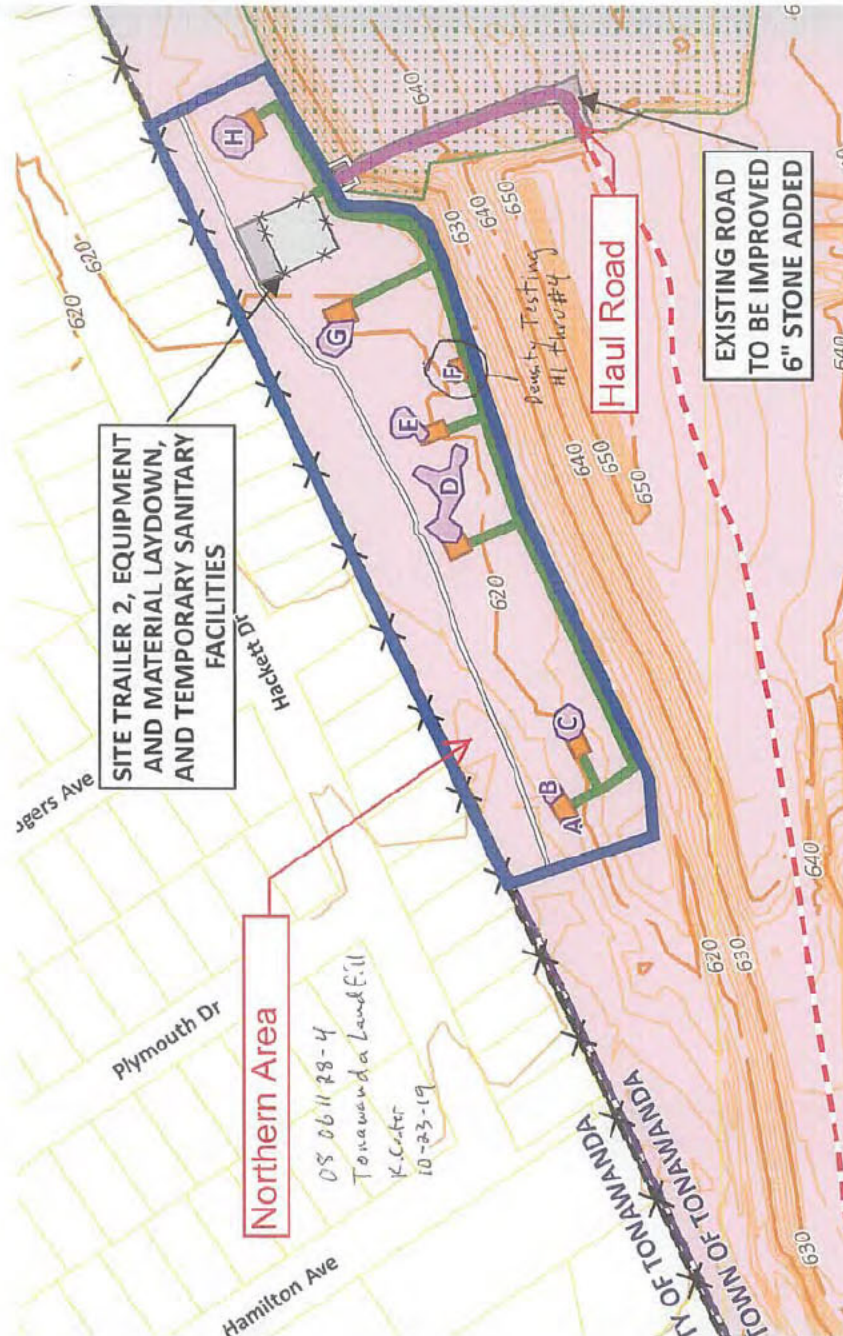
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Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Approved Signatory: Steven Pump (Branch Manager)
Date of Issue: 10/25/2019





Professional Service Industries, Inc.
3784 Commerce Court, Suite 300
North Tonawanda, NY 14120

Phone: (716) 694-8657
Fax: (716) 694-8638

Report No: FDR:08061128-5

Issue No: 1

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Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC:

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Date of Issue: 10/25/2019

Testing Details

Tested By: [REDACTED]
Date Tested: 10/24/2019
Field Methods: ASTM D 6938
Gauge Type: Troxler
Model Number: 3430
Serial Number: 32253
Test Mode: Direct Transmission
Standard Count: Density: 2033
Standard Count: Moisture: 653

Proctor Information

Sample ID	Supplier	Material	Method	MDD (lb/ft ³)	OWC (%)
08061128-2-S2 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	119.5	13.0
08061128-2-S1 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	120.0	12.5

Test Results

Test No.	Proctor Sample ID	Probe Depth (in.)	Wet Density (lb/ft ³)	Water Content (%)	OWC Var (%)	Dry Density (lb/ft ³)	Comp (%)	Comp Spec (%)	Results
1	08061128-2-S1	10	126.5	13.9	+1.4	111.1	92.6	≥90	A
2	08061128-2-S2	10	125.6	14.6	+1.6	109.6	91.7	≥90	A
3	08061128-2-S2	10	123.2	14.1	+1.1	108.0	90.4	≥90	A
4	08061128-2-S2	10	123.5	13.7	+0.7	108.6	90.9	≥90	A
5	08061128-2-S1	10	125.3	13.3	+0.8	110.6	92.2	≥90	A
6	08061128-2-S2	10	125.1	14.3	+1.3	109.4	91.5	≥90	A

Location

General Location: Excavation "A" - Soil Remediation Backfill

Test No.	Field Sample ID	Location	Test Elev/Depth	Material/Layer
1	S1	See Attached Sketch - Test Location #1, East side of the Excavation	1st Lift	Subgrade Fill
2	S2	See Attached Sketch - Test Location #2, West side of the Excavation	2nd Lift	Subgrade Fill
3	S3	See Attached Sketch - Test Location #3, Center of the Excavation	3rd Lift	Subgrade Fill
4	S4	See Attached Sketch - Test Location #4, North side of the Excavation	4th Lift	Subgrade Fill
5	S5	See Attached Sketch - Test Location #5, Center of the Excavation	5th Lift	Subgrade Fill
6	S6	See Attached Sketch - Test Location #6, Southside of the Excavation	6th Lift	Subgrade Fill

Comments

(SO) = Sampled By Others
(TO) = Tested By Others
Elevation referenced from bottom of Excavation (Top of Stone placement)
24" of Aggregate material was placed and compacted prior to the Subgrade Fill placement in both remediation areas

Legend

OWC = Optimum Water Content
MDD = Maximum Dry Density
A = TEST RESULTS COMPLY WITH SPECIFICATION



Professional Service Industries, Inc.
3784 Commerce Court, Suite 300
North Tonawanda, NY 14120

Phone: (716) 694-8657
Fax: (716) 694-8638

Report No: FDR:08061128-5

Issue No: 1

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Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Date of Issue: 10/25/2019

Test Results

Test No.	Proctor Sample ID	Probe Depth (in.)	Wet Density (lb/ft ³)	Water Content (%)	OWC Var (%)	Dry Density (lb/ft ³)	Comp (%)	Comp Spec (%)	Results
7	08061128-2-S1	10	125.5	13.3	+0.8	110.8	92.3	≥90	A
8	08061128-2-S2	10	125.3	14.1	+1.1	109.8	91.9	≥90	A
9	08061128-2-S1	10	123.2	13.7	+1.2	108.4	90.3	≥90	A
10	08061128-2-S1	10	126.8	13.4	+0.9	111.8	93.2	≥90	A
11	08061128-2-S2	10	125.4	14.6	+1.6	109.4	91.5	≥90	A
12	08061128-2-S2	10	123.4	13.8	+0.8	108.4	90.7	≥90	A

Location

General Location: Excavation "B" - Soil Remediation Backfill

Test No.	Field Sample ID	Location	Test Elev/Depth	Material/Layer
7	S7	See Attached Sketch - Test Location #7, Center of the Excavation	1st Lift	Subgrade Fill
8	S8	See Attached Sketch - Test Location #8, South side of the Excavation	2nd Lift	Subgrade Fill
9	S9	See Attached Sketch - Test Location #9, Northside of the Excavation	3rd Lift	Subgrade Fill
10	S10	See Attached Sketch - Test Location #10, South side of the Excavation	4th Lift	Subgrade Fill
11	S11	See Attached Sketch - Test Location #11, Center of the Excavation	5th Lift	Subgrade Fill
12	S12	See Attached Sketch - Test Location #12, North side of the Excavation	6th Lift	Subgrade Fill

Comments

(SO) = Sampled By Others
(TO) = Tested By Others
Elevation referenced from bottom of Excavation (Top of Stone placement)
24" of Aggregate material was placed and compacted prior to the Subgrade Fill placement in both remediation areas

Legend

OWC = Optimum Water Content
MDD = Maximum Dry Density
A = TEST RESULTS COMPLY WITH SPECIFICATION

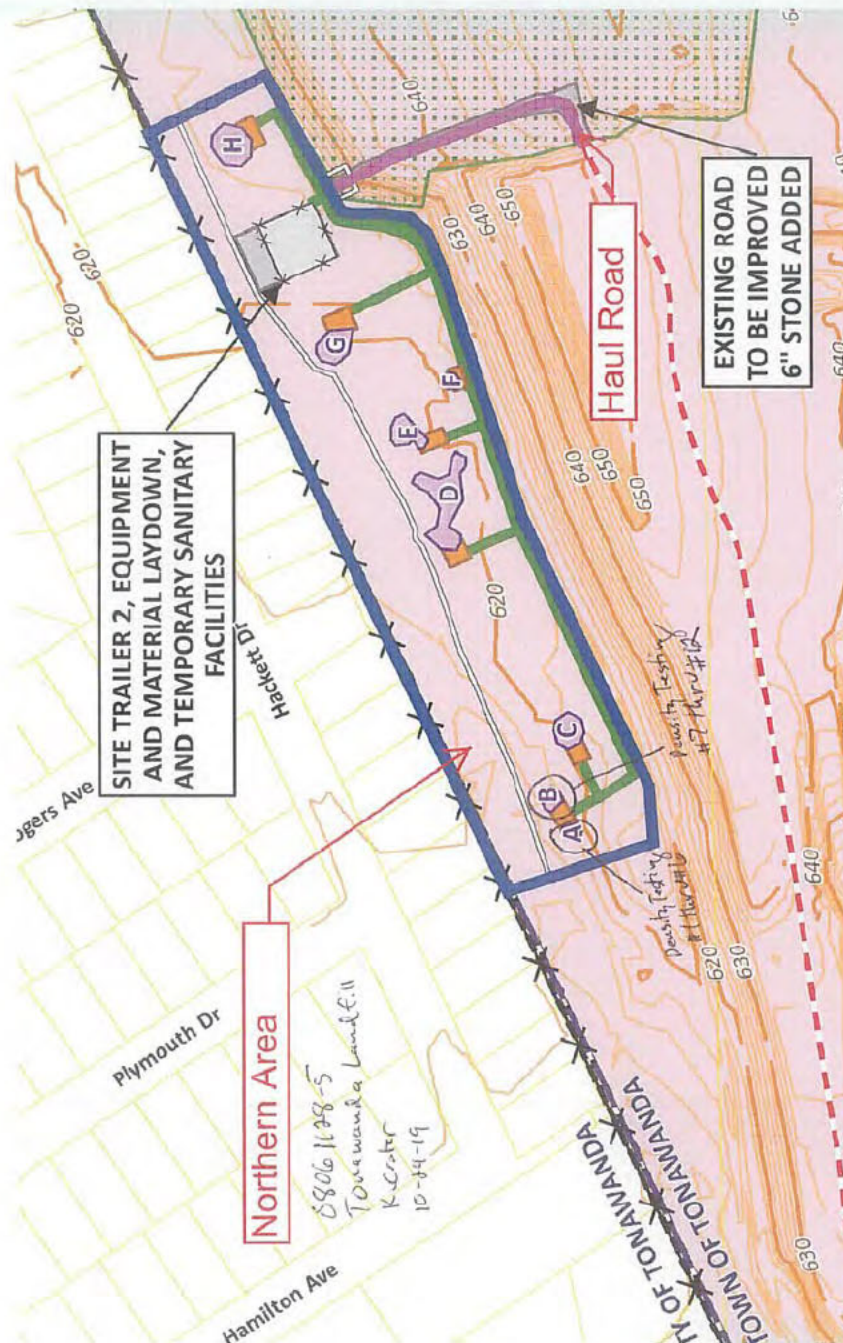
Field Density Test Report

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Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Date of Issue: 10/25/2019





Professional Service Industries, Inc.
3784 Commerce Court, Suite 300
North Tonawanda, NY 14120

Phone: (716) 694-8657
Fax: (716) 694-8638

Report No: FDR:08061128-6

Issue No: 1

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Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

C

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Approved Signatory: Steven Pump (Branch Manager)
Date of Issue: 11/15/2019

Testing Details

Tested By: [REDACTED]
Date Tested: 10/29/2019
Field Methods: ASTM D 6938
Gauge Type: Troxler
Model Number: 3430
Serial Number: 32253
Test Mode: Direct Transmission
Standard Count: Density: 2033
Standard Count: Moisture: 648

Proctor Information

Sample ID	Supplier	Material	Method	MDD (lb/ft ³)	OWC (%)
08061128-2-S2 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	119.5	13.0

Test Results

Test No.	Proctor Sample ID	Probe Depth (in.)	Wet Density (lb/ft ³)	Water Content (%)	OWC Var (%)	Dry Density (lb/ft ³)	Comp (%)	Comp Spec (%)	Results
1	08061128-2-S2	10	129.9	15.4	+2.4	112.6	94.2	≥90	A

Location

General Location: Excavation "E"- Soil Remediation Backfill

Test No.	Field Sample ID	Location	Test Elev/Depth	Material/Layer
1	S1	See Attached Sketch - Test Location #1	1st Lift	Subgrade Fill

Comments

(SO) = Sampled By Others
(TO) = Tested By Others
Elevation referenced from bottom of Excavation (Top of Stone Placement)
Prior to subgrade fill placement (18") of Aggregate material was placed on the North side of the Excavation and compacted. The Southside of the Excavation only has approximately (1") of Aggregate material placed.

Legend

OWC = Optimum Water Content
MDD = Maximum Dry Density
A = TEST RESULTS COMPLY WITH SPECIFICATION

Field Density Test Report

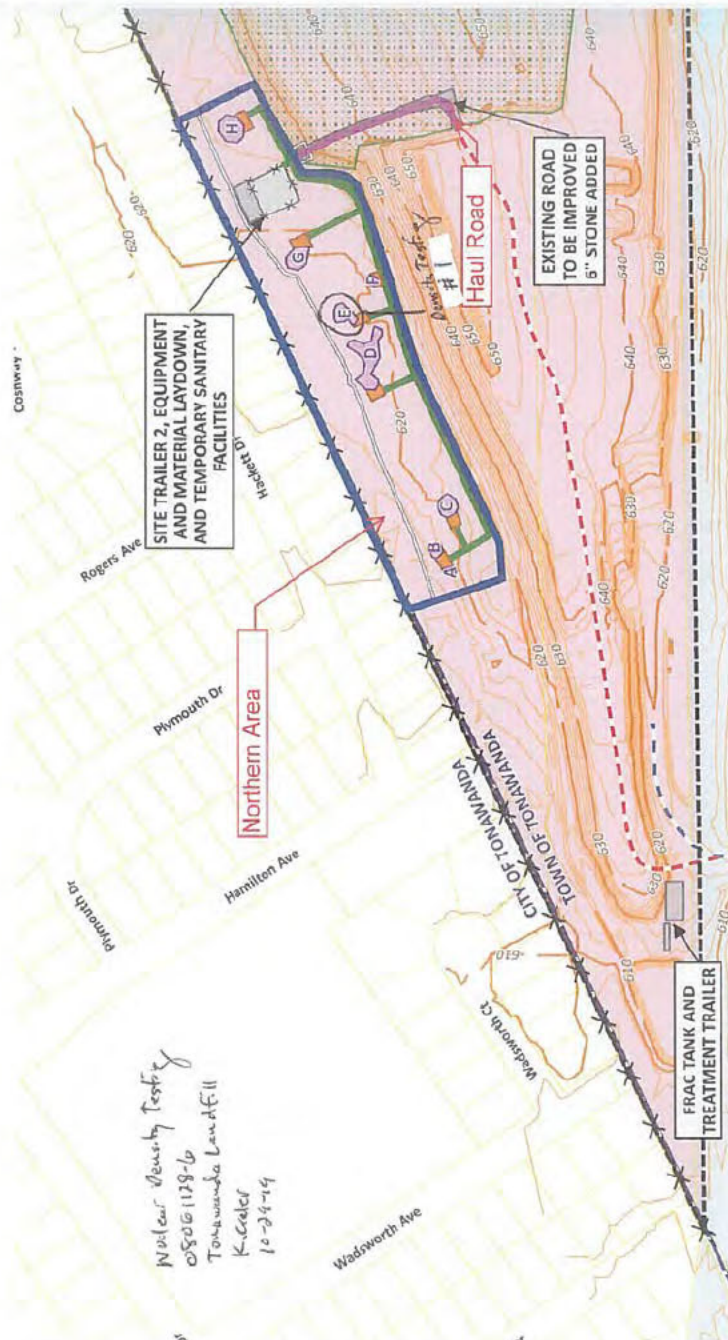
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Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC [REDACTED]

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Approved Signatory: Steven Pump (Branch Manager)
Date of Issue: 11/15/2019





Professional Service Industries, Inc.
3784 Commerce Court, Suite 300
North Tonawanda, NY 14120

Phone: (716) 694-8657
Fax: (716) 694-8638

Report No: FDR:08061128-7

Issue No: 1

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Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Approved Signatory: Steven Pump (Branch Manager)
Date of Issue: 11/15/2019

Testing Details

Tested By: [REDACTED]
Date Tested: 10/30/2019
Field Methods: ASTM D 6938
Gauge Type: Troxler
Model Number: 3430
Serial Number: 32253
Test Mode: Direct Transmission
Standard Count: Density: 2043
Standard Count: Moisture: 640

Proctor Information

Sample ID	Supplier	Material	Method	MDD (lb/ft ³)	OWC (%)
08061128-2-S2 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	119.5	13.0

Test Results

Test No.	Proctor Sample ID	Probe Depth (in.)	Wet Density (lb/ft ³)	Water Content (%)	OWC Var (%)	Dry Density (lb/ft ³)	Comp (%)	Comp Spec (%)	Results
1	08061128-2-S2	10	127.9	14.6	+1.6	111.6	93.4	≥90	A
2	08061128-2-S2	10	129.9	15.6	+2.6	112.4	94.1	≥90	A
3	08061128-2-S2	10	124.0	13.8	+0.8	109.0	91.2	≥90	A
4	08061128-2-S2	10	128.9	16.3	+3.3	110.8	92.7	≥90	A
5	08061128-2-S2	10	127.4	14.3	+1.3	111.5	93.3	≥90	A
6	08061128-2-S2	10	127.7	15.9	+2.9	110.2	92.2	≥90	A
7	08061128-2-S2	10	123.7	14.5	+1.5	108.0	90.4	≥90	A
8	08061128-2-S2	10	127.1	16.1	+3.1	109.5	91.6	≥90	A
9	08061128-2-S2	10	124.4	15.3	+2.3	107.9	90.3	≥90	A

Location

General Location: Excavation "E" - Soil Remediation Backfill

Test No.	Field Sample ID	Location	Test Elev/Depth	Material/Layer
1	S1	See Attached Sketch - Test Location #1, Southwest Area of the Excavation	2nd Lift	Subgrade Fill
2	S2	See Attached Sketch - Test Location #2, Northwest Area of the Excavation	2nd Lift	Subgrade Fill
3	S3	See Attached Sketch - Test Location #3, Southeast Area of the Excavation	2nd Lift	Subgrade Fill
4	S4	See Attached Sketch - Test Location #4, West side of the Excavation	3rd Lift	Subgrade Fill
5	S5	See Attached Sketch - Test Location #5, East side of the Excavation	3rd Lift	Subgrade Fill
6	S6	See Attached Sketch - Test Location #6, North side of the Excavation	4th Lift	Subgrade Fill
7	S7	See Attached Sketch - Test Location #7, South side of the Excavation	4th Lift	Subgrade Fill
8	S8	See Attached Sketch - Test Location #8, Center of the Excavation	5th Lift	Subgrade Fill
9	S9	See Attached Sketch - Test Location #9, Southwest Area of the Excavation	5th Lift	Subgrade Fill

Comments

(SO) = Sampled By Others
(TO) = Tested By Others

Legend

OWC = Optimum Water Content
MDD = Maximum Dry Density
A = TEST RESULTS COMPLY WITH SPECIFICATION

Field Density Test Report

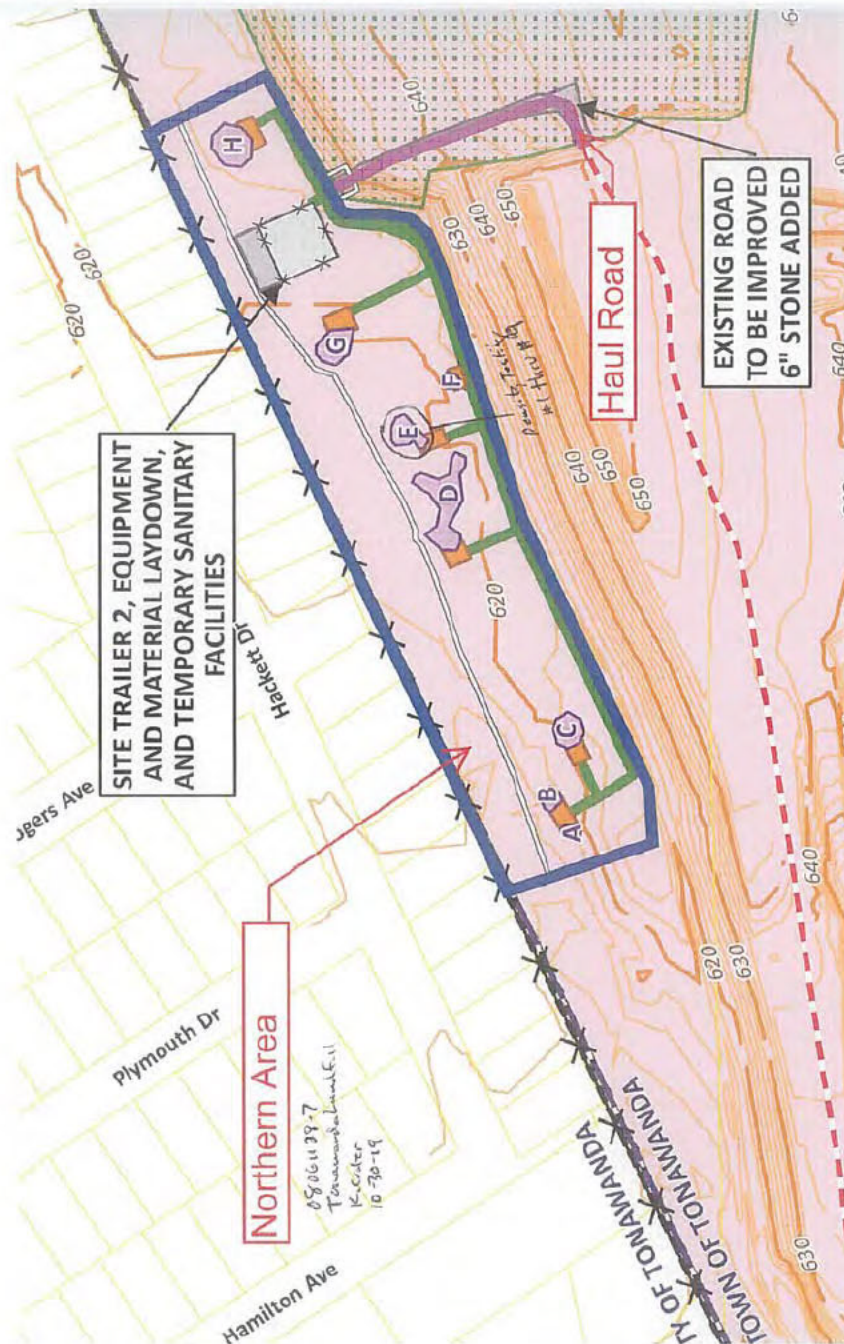
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Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CO

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Approved Signatory: Steven Pump (Branch Manager)
Date of Issue: 11/15/2019





Professional Service Industries, Inc.
3784 Commerce Court, Suite 300
North Tonawanda, NY 14120

Phone: (716) 694-8657
Fax: (716) 694-8638

Report No: FDR:08061128-8

Issue No: 1

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Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC: [REDACTED]

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Date of Issue: 11/15/2019

Testing Details

Tested By: [REDACTED]
Date Tested: 11/7/2019
Field Methods: ASTM D 6938
Gauge Type: Troxler
Model Number: 3430
Serial Number: 32253
Test Mode: Direct Transmission
Standard Count: Density: 2050
Standard Count: Moisture: 655

Proctor Information

Sample ID	Supplier	Material	Method	MDD (lb/ft ³)	OWC (%)
08061128-2-S2 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	119.5	13.0

Test Results

Test No.	Proctor Sample ID	Probe Depth (in.)	Wet Density (lb/ft ³)	Water Content (%)	OWC Var (%)	Dry Density (lb/ft ³)	Comp (%)	Comp Spec (%)	Results
1	08061128-2-S2	10	125.7	15.4	+2.4	108.9	91.1	≥90	A
2	08061128-2-S2	10	129.2	14.6	+1.6	112.7	94.3	≥90	A
3	08061128-2-S2	10	127.6	15.3	+2.3	110.7	92.6	≥90	A
4	08061128-2-S2	10	127.3	15.9	+2.9	109.8	91.9	≥90	A
5	08061128-2-S2	10	127.9	14.7	+1.7	111.5	93.3	≥90	A
6	08061128-2-S2	10	124.6	14.1	+1.1	109.2	91.4	≥90	A

Location

General Location: Excavation "E"- Soil Remediation Backfill

Test No.	Field Sample ID	Location	Test Elev/Depth	Material/Layer
1	S1	See Attached Sketch - Test Location #1, Center of the Excavation	5th Lift	Subgrade Fill
2	S2	See Attached Sketch - Test Location #2, Southwest Area of the Excavation	5th Lift	Subgrade Fill
3	S3	See Attached Sketch - Test Location #3, East side of the Excavation	6th Lift	Subgrade Fill
4	S4	See Attached Sketch - Test Location #4, Southwest Area of the Excavation	6th Lift	Subgrade Fill
5	S5	See Attached Sketch - Test Location #5, Southwest Area of the Excavation	7th Lift	Subgrade Fill
6	S6	See Attached Sketch - Test Location #6, Southwest Area of the Excavation	8th Lift	Subgrade Fill

Comments

(SO) = Sampled By Others
(TO) = Tested By Others
Excavation "D"- Elevation referenced from bottom of the Excavation and Top of Aggregate material placed at the West side of the Excavation only. The West side of the Excavation has (1') of Aggregate material placed and compacted throughout the area except for a channel area used during Dewatering activities which has (2') of Aggregate material placed and compacted.

Legend

OWC = Optimum Water Content
MDD = Maximum Dry Density
A = TEST RESULTS COMPLY WITH SPECIFICATION



Professional Service Industries, Inc.
3784 Commerce Court, Suite 300
North Tonawanda, NY 14120

Phone: (716) 694-8657
Fax: (716) 694-8638

Report No: FDR:08061128-8

Issue No: 1

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Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Approved Signatory: Steven Pump (Branch Manager)
Date of Issue: 11/15/2019

Test Results

Test No.	Proctor Sample ID	Probe Depth (in.)	Wet Density (lb/ft ³)	Water Content (%)	OWC Var (%)	Dry Density (lb/ft ³)	Comp (%)	Comp Spec (%)	Results
7	08061128-2-S2	10	129.9	14.3	+1.3	113.6	95.1	≥90	A
8	08061128-2-S2	10	128.7	15.4	+2.4	111.5	93.3	≥90	A
9	08061128-2-S2	10	129.9	15.9	+2.9	112.1	93.8	≥90	A
10	08061128-2-S2	10	127.4	15.5	+2.5	110.3	92.3	≥90	A
11	08061128-2-S2	10	126.5	15.8	+2.8	109.2	91.4	≥90	A

Location

General Location: Excavation "D"- Soil Remediation Backfill

Test No.	Field Sample ID	Location	Test Elev/Depth	Material/Layer
7	S7	See Attached Sketch - Test Location #7, West side of the Excavation	1st Lift	Subgrade Fill
8	S8	See Attached Sketch - Test Location #8, West side of the Excavation	1st Lift	Subgrade Fill
9	S9	See Attached Sketch - Test Location #9, Center of the West side of the Excavation	1st Lift	Subgrade Fill
10	S10	See Attached Sketch - Test Location #10, Center of the Excavation	1st Lift	Subgrade Fill
11	S11	See Attached Sketch - Test Location #11, Center of the East side of the Excavation	1st Lift	Subgrade Fill

Comments

(SO) = Sampled By Others
(TO) = Tested By Others
Excavation "D"- Elevation referenced from bottom of the Excavation and Top of Aggregate material placed at the West side of the Excavation only. The West side of the Excavation has (1') of Aggregate material placed and compacted throughout the area except for a channel area used during Dewatering activities which has (2') of Aggregate material placed and compacted.

Legend

OWC = Optimum Water Content
MDD = Maximum Dry Density
A = TEST RESULTS COMPLY WITH SPECIFICATION

Field Density Test Report

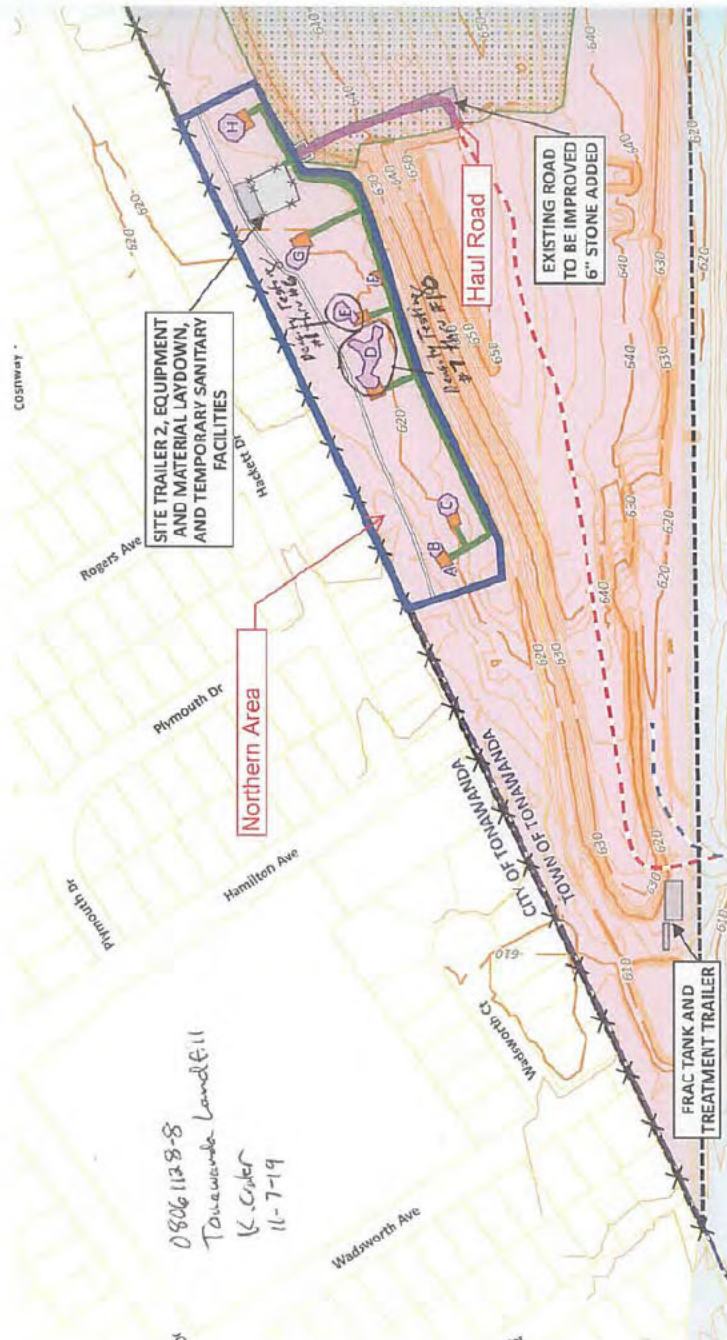
These test results apply only to the specific locations and materials noted and may not represent any other locations or elevations. This report may not be reproduced, except in full, without written permission by Professional Service Industries, Inc. If a non-compliance appears on this report, to the extent that the reported non-compliance impacts the project, the resolution is outside the PSI scope of engagement.

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC [REDACTED]

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Approved Signatory: Steven Pump (Branch Manager)
Date of Issue: 11/15/2019





Professional Service Industries, Inc.
3784 Commerce Court, Suite 300
North Tonawanda, NY 14120

Phone: (716) 694-8657
Fax: (716) 694-8638

Report No: FDR:08061128-11

Issue No: 1

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Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Approved Signatory: Steven Pump (Branch Manager)
Date of Issue: 12/2/2019

Testing Details

Tested By: [REDACTED]
Date Tested: 11/18/2019
Field Methods: ASTM D 6938
Gauge Type: Troxler
Model Number: 3430
Serial Number: 32253
Test Mode: Direct Transmission
Standard Count: Density: 2045
Standard Count: Moisture: 653

Proctor Information

Sample ID	Supplier	Material	Method	MDD (lb/ft ³)	OWC (%)
08061128-2-S2 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	119.5	13.0

Test Results

Test No.	Proctor Sample ID	Probe Depth (in.)	Wet Density (lb/ft ³)	Water Content (%)	OWC Var (%)	Dry Density (lb/ft ³)	Comp (%)	Comp Spec (%)	Results
1	08061128-2-S2	10	123.6	14.4	+1.4	108.0	90.4	≥90	A
2	08061128-2-S2	10	124.8	14.9	+1.9	108.6	90.9	≥90	A

Location

General Location: Excavation "D"- Soil Remediation Backfill

Test No.	Location	Test Elev/Depth	Material/Layer
1	Test Location #1, West End of the East side of the Excavation	2nd Lift	Subgrade Fill
2	Test Location #2, East End of the East side of the Excavation	2nd Lift	Subgrade Fill

Comments

(SO) = Sampled By Others
(TO) = Tested By Others

Legend

OWC = Optimum Water Content
MDD = Maximum Dry Density
A = TEST RESULTS COMPLY WITH SPECIFICATION



Professional Service Industries, Inc.
3784 Commerce Court, Suite 300
North Tonawanda, NY 14120

Phone: (716) 694-8657
Fax: (716) 694-8638

Report No: FDR:08061128-12

Issue No: 1

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Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Date of Issue: 12/2/2019

Testing Details

Tested By: [REDACTED]
Date Tested: 11/19/2019
Field Methods: ASTM D 6938
Gauge Type: Troxler
Model Number: 3430
Serial Number: 32253
Test Mode: Direct Transmission
Standard Count: Density: 2039
Standard Count: Moisture: 656

Proctor Information

Sample ID	Supplier	Material	Method	MDD (lb/ft ³)	OWC (%)
08061128-2-S2 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	119.5	13.0

Test Results

Test No.	Proctor Sample ID	Probe Depth (in.)	Wet Density (lb/ft ³)	Water Content (%)	OWC Var (%)	Dry Density (lb/ft ³)	Comp (%)	Comp Spec (%)	Results
1	08061128-2-S2	10	124.9	15.5	+2.5	108.1	90.5	≥90	A
2	08061128-2-S2	10	125.5	14.9	+1.9	109.2	91.4	≥90	A
3	08061128-2-S2	10	124.7	15.7	+2.7	107.8	90.2	≥90	A
4	08061128-2-S2	10	125.2	15.1	+2.1	108.8	91.0	≥90	A
5	08061128-2-S2	10	124.5	15.4	+2.4	107.9	90.3	≥90	A
6	08061128-2-S2	10	125.7	14.5	+1.5	109.8	91.9	≥90	A
7	08061128-2-S2	10	125.3	15.6	+2.6	108.4	90.7	≥90	A
8	08061128-2-S2	10	124.9	14.6	+1.6	109.0	91.2	≥90	A

Location

General Location: Excavation "D" - Soil Remediation Backfill

Test No.	Field Sample ID	Location	Test Elev/Depth	Material/Layer
1	S1	Test Location #1, North End of the West side of the Excavation	3rd Lift	Subgrade Fill
2	S2	Test Location #2, South End of the West side of the Excavation	3rd Lift	Subgrade Fill
3	S3	Test Location #3, West End of the East side of the Excavation	3rd Lift	Subgrade Fill
4	S4	Test Location #4, East End of the East side of the Excavation	3rd Lift	Subgrade Fill
5	S5	Test Location #5, South End of the East Side of the Excavation	4th Lift	Subgrade Fill
6	S6	Test Location #6, Center of the East side of the Excavation	4th Lift	Subgrade Fill
7	S7	Test Location #7, West End of the East side of the Excavation	5th Lift	Subgrade Fill
8	S8	Test Location #8, East End of the East side of the Excavation	5th Lift	Subgrade Fill

Comments

(SO) = Sampled By Others
(TO) = Tested By Others

Legend

OWC = Optimum Water Content
MDD = Maximum Dry Density
A = TEST RESULTS COMPLY WITH SPECIFICATION



Professional Service Industries, Inc.
3784 Commerce Court, Suite 300
North Tonawanda, NY 14120

Phone: (716) 694-8657
Fax: (716) 694-8638

Report No: FDR:08061128-13

Issue No: 1

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Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC: [REDACTED]

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Approved Signatory: Steven Pump (Branch Manager)
Date of Issue: 12/2/2019

Testing Details

Tested By: [REDACTED]
Date Tested: 11/20/2019
Field Methods: ASTM D 6938
Gauge Type: Troxler
Model Number: 3430
Serial Number: 32253
Test Mode: Direct Transmission
Standard Count: Density: 2044
Standard Count: Moisture: 653

Proctor Information

Sample ID	Supplier	Material	Method	MDD (lb/ft ³)	OWC (%)
08061128-2-S2 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	119.5	13.0

Test Results

Test No.	Proctor Sample ID	Probe Depth (in.)	Wet Density (lb/ft ³)	Water Content (%)	OWC Var (%)	Dry Density (lb/ft ³)	Comp (%)	Comp Spec (%)	Results
1	08061128-2-S2	10	125.0	14.2	+1.2	109.5	91.6	≥90	A
2	08061128-2-S2	10	126.5	14.8	+1.8	110.2	92.2	≥90	A
3	08061128-2-S2	10	126.7	15.4	+2.4	109.8	91.9	≥90	A
4	08061128-2-S2	10	127.2	14.9	+1.9	110.7	92.6	≥90	A
5	08061128-2-S2	10	125.5	15.2	+2.2	108.9	91.1	≥90	A
6	08061128-2-S2	10	124.2	14.6	+1.6	108.4	90.7	≥90	A

Location

General Location: Excavation "D"- Soil Remediation Backfill

Test No.	Field Sample ID	Location	Test Elev/Depth	Material/Layer
1	S1	Test Location #1, South East Corner of the East side of Excavation	5th Lift	Subgrade Fill
2	S2	Test Location #2, North End of the East side of the Excavation	5th Lift	Subgrade Fill
3	S3	Test Location #3, Center of the East side of the Excavation	6th Lift	Subgrade Fill
4	S4	Test Location #4, South End of the East side of the Excavation	6th Lift	Subgrade Fill
5	S5	Test Location #5, West End of the East side of Excavation	7th Lift	Subgrade Fill
6	S6	Test Location #6, East End of the East side of Excavation	7th Lift	Subgrade Fill

Comments

(SO) = Sampled By Others
(TO) = Tested By Others

Legend

OWC = Optimum Water Content
MDD = Maximum Dry Density
A = TEST RESULTS COMPLY WITH SPECIFICATION



Professional Service Industries, Inc.
3784 Commerce Court, Suite 300
North Tonawanda, NY 14120

Phone: (716) 694-8657
Fax: (716) 694-8638

Report No: FDR:08061128-14

Issue No: 1

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Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC:

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Approved Signatory: Steven Pump (Branch Manager)
Date of Issue: 12/9/2019

Testing Details

Tested By: [REDACTED]
Date Tested: 11/21/2019
Field Methods: ASTM D 6938
Gauge Type: Troxler
Model Number: 3430
Serial Number: 32253
Test Mode: Direct Transmission
Standard Count: Density: 2050
Standard Count: Moisture: 661

Proctor Information

Sample ID	Supplier	Material	Method	MDD (lb/ft ³)	OWC (%)
08061128-2-S2 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	119.5	13.0

Test Results

Test No.	Proctor Sample ID	Probe Depth (in.)	Wet Density (lb/ft ³)	Water Content (%)	OWC Var (%)	Dry Density (lb/ft ³)	Comp (%)	Comp Spec (%)	Results
1	08061128-2-S2	10	125.7	14.8	+1.8	109.5	91.6	≥90	A
2	08061128-2-S2	10	125.9	15.4	+2.4	109.1	91.3	≥90	A
3	08061128-2-S2	10	125.5	15.8	+2.8	108.4	90.7	≥90	A
4	08061128-2-S2	10	125.7	14.5	+1.5	109.8	91.9	≥90	A
5	08061128-2-S2	10	128.4	15.3	+2.3	111.4	93.2	≥90	A
6	08061128-2-S2	10	124.8	15.4	+2.4	108.1	90.5	≥90	A

Location

General Location: Excavation "D"- Soil Remediation Backfill

Test No.	Field Sample ID	Location	Test Elev/Depth	Material/Layer
1	S1	Test Location #1, Southeast Corner of the West side of Excavation	7th Lift	Subgrade Fill
2	S2	Test Location #2, North End of the West side of Excavation	4th Lift	Subgrade Fill
3	S3	Test Location #3, South End of the West side of Excavation	4th Lift	Subgrade Fill
4	S4	Test Location #4, South End of the West side of Excavation	8th Lift	Subgrade Fill
5	S5	Test Location #5, Center of the West side of the Excavation	8th Lift	Subgrade Fill
6	S6	Test Location #6, Northeast Corner of the East side of Excavation	1st Lift	Subgrade Fill

Comments

(SO) = Sampled By Others
(TO) = Tested By Others
Elevation referenced from Below Existing Subgrade
Approximately (2-1/2") of R.O.C. Stone was placed at the Northeast Corner of the Excavation prior to the placement of Subgrade Fill Material.

Legend

OWC = Optimum Water Content
MDD = Maximum Dry Density
A = TEST RESULTS COMPLY WITH SPECIFICATION

Field Density Test Report

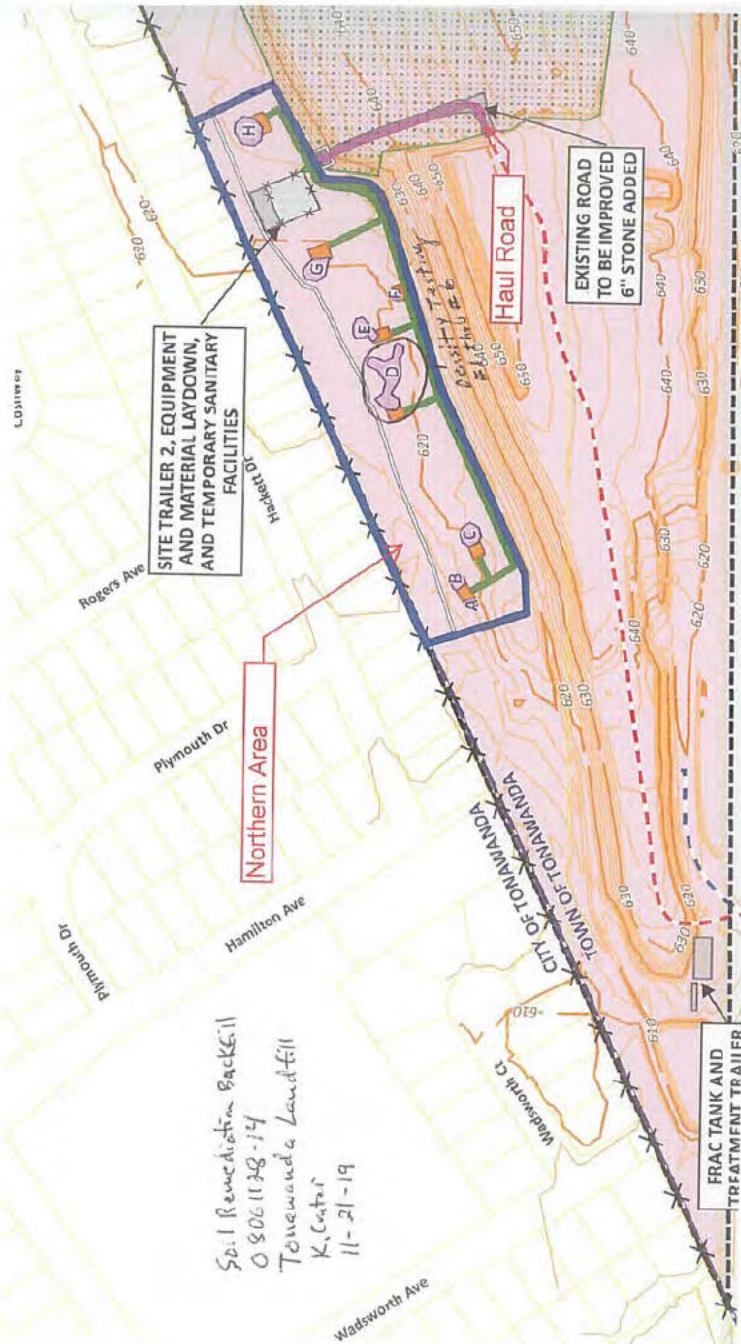
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Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC:

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Approved Signatory: Steven Pump (Branch Manager)
Date of Issue: 12/9/2019





Professional Service Industries, Inc.
3784 Commerce Court, Suite 300
North Tonawanda, NY 14120

Phone: (716) 694-8657
Fax: (716) 694-8638

Report No: FDR:08061128-15

Issue No: 1

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Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

CC: [REDACTED]

Project: TONAWANDA LANDFILL
TONAWANDA, NY

Date of Issue: 12/9/2019

Testing Details

Tested By: [REDACTED]
Date Tested: 11/25/2019
Field Methods: ASTM D 6938
Gauge Type: Troxler
Model Number: 3430
Serial Number: 32253
Test Mode: Direct Transmission
Standard Count: Density: 2046
Standard Count: Moisture: 659

Proctor Information

Sample ID	Supplier	Material	Method	MDD (lb/ft ³)	OWC (%)
08061128-2-S2 (SO)	On Site Soils	Sandy Silty Clay	ASTM D 698 (A) (TO)	119.5	13.0

Test Results

Test No.	Proctor Sample ID	Probe Depth (in.)	Wet Density (lb/ft ³)	Water Content (%)	OWC Var (%)	Dry Density (lb/ft ³)	Comp (%)	Comp Spec (%)	Results
1	08061128-2-S2	10	127.4	15.6	+2.6	110.2	92.2	≥90	A
2	08061128-2-S2	10	125.6	14.8	+1.8	109.4	91.5	≥90	A

Location

General Location: Excavation "D"- Soil Remediation Backfill

Test No.	Field Sample ID	Location	Test Elev/Depth	Material/Layer
1	S1	See Attached Sketch - Test Location #1, North End of the West side of Excavation	5th Lift	Subgrade Fill
2	S2	See Attached Sketch - Test Location #2, South End of the West side of Excavation	5th Lift	Subgrade Fill

Comments

(SO) = Sampled By Others
(TO) = Tested By Others
Elevation referenced from Existing Subgrade

Legend

OWC = Optimum Water Content
MDD = Maximum Dry Density
A = TEST RESULTS COMPLY WITH SPECIFICATION

Field Density Test Report

Client: PLEXUS SCIENTIFIC
5510 CHEROKEE AVE, SUITE 350
ALEXANDRIA, VA 22312

C

Project: TONAWANDA LANDFILL
TONAWANDA, NY

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Approved Signatory: Steven Pump (Branch Manager)
Date of Issue: 12/9/2019

