



Integrated Testing and Engineering Company of San Antonio, L.P.

Geotechnical & Environmental Engineering • Construction Services • Geologic Assessment

E.A. Palaniappan, Ph.D., P.E.
Murali Subramaniam, Ph.D., P.E.
Kausi Subramaniam, B.S.

November 6, 2023

Boerne Medical Center, LTD
C/o:
Barry Sanditen
500 N. Cap. of Tex. Hwy. Bldg. 7
Austin, TX 78746

Re: Construction Materials Testing
Sewerline Installation – Backfill Compaction
Boerne Professional Center
Frontage Rd. IH 10 West to Switchback Trail Boerne
Kendall County, Texas 78006

InTEC Project #: S232861

Gentlemen:

The Laboratory Compaction and Field Density Tests results at the above referenced project site are presented for your review.

We appreciate and wish to thank you for the opportunity to be of service to you on this project. If we can be of additional assistance, or if you have any questions, please call us.

Respectfully Submitted,
InTEC of San Antonio, L.P.

Murali Subramaniam, Ph.D., P.E.

Copies Submitted: Above (1)



[Signature]
11/07/2023



Moisture Density Relationship

InTEC of San Antonio
12028 Radium
San Antonio, TX 78216
Phone: 210-525-9033

Client:
V.K. Knowlton Construction and Utilities, Inc.
18225 FM 2252
San Antonio, TX 78266

Project:
S232861
Boerne Professional Center
29.8139704,-98.7532319
Boerne, TX

SAMPLE DATA

Sample Number: 22717

Sample Date: 05/25/2023

Technician: Olson, James

Material Use: Utility Backfill

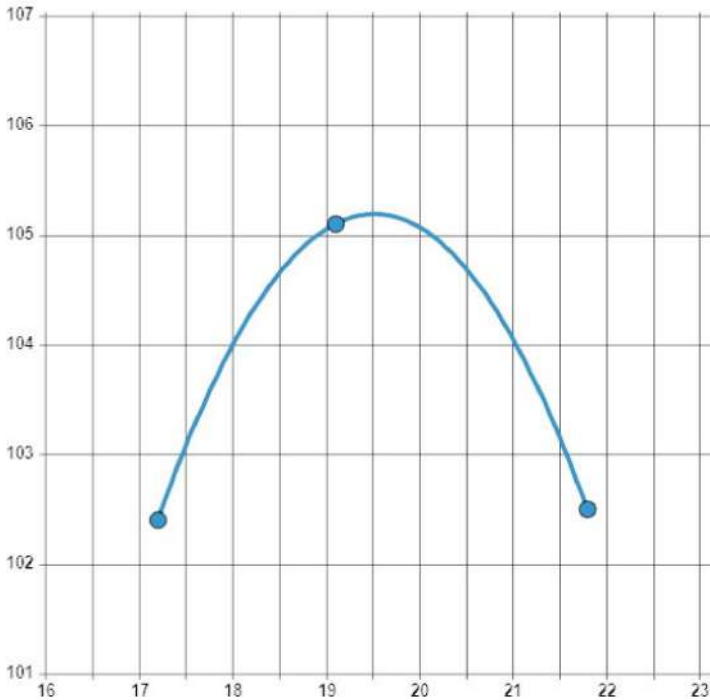
Sample Location: On site backfill

Material Description: Dark Brown Clay with Gravel

LAB DATA

Test Method: ASTM D1557 - Method C

Proctor Curve:



Maximum Dry Density (pcf): 105.2

Optimum Moisture (%): 19.5

Soil Classification: CH Clay with gravel

Test Completed Date: 05/30/2023

Test Completed By: Efediya, Eugene



Moisture Density Relationship

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29.8139704,-98.7532319
Boerne, TX

SAMPLE DATA

Sample Number: 22718

Sample Date: 05/25/2023

Technician: Olson, James

Material Use: Utility Backfill

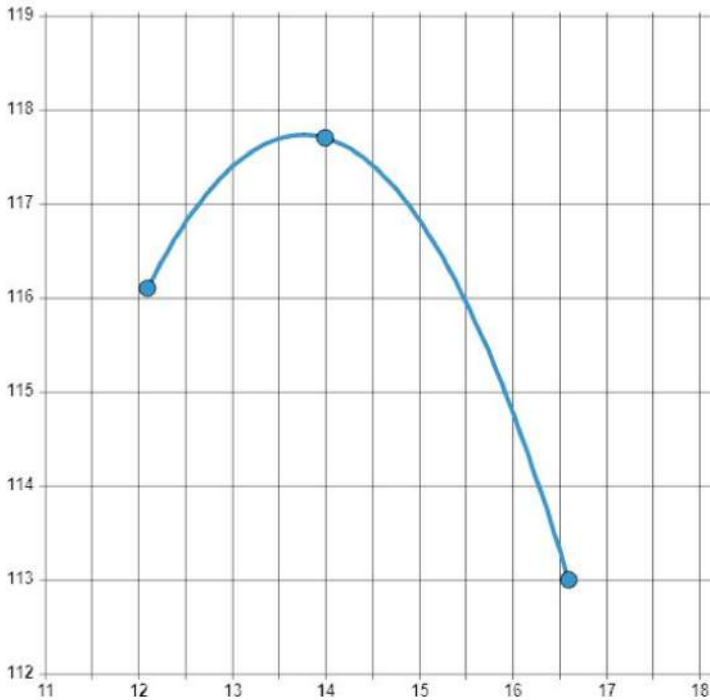
Sample Location: On site backfill

Material Description: Brown Clay with Gravel

LAB DATA

Test Method: ASTM D1557 - Method C

Proctor Curve:



Maximum Dry Density (pcf): 117.7

Optimum Moisture (%): 13.8

Soil Classification: CH Clay with gravel

Test Completed Date: 05/30/2023

Test Completed By: Efediya, Eugene



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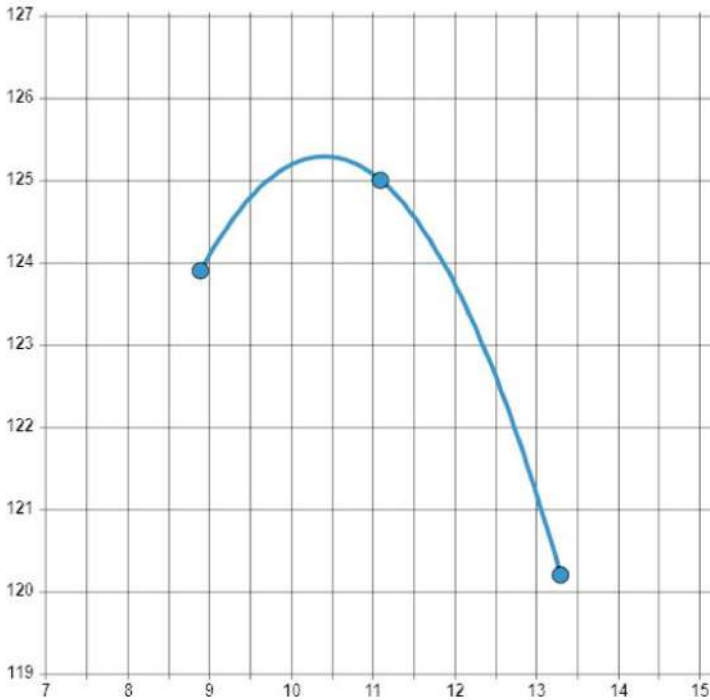
SAMPLE DATA

Sample Number: 22719
Sample Date: 05/25/2023
Technician: Olson, James
Material Use: Utility Backfill
Sample Location: On site backfill
Material Description: Tan to Brown Gravelly Clay

LAB DATA

Test Method: ASTM D1557 - Method C

Proctor Curve:



Maximum Dry Density (pcf): 125.3
Optimum Moisture (%): 10.4
Soil Classification: GC Gravelly Clay

Test Completed Date: 05/30/2023

Test Completed By: Efediya, Eugene



InTEC of San Antonio
12028 Radium
San Antonio, TX 78216
Phone: 210-525-9033

Compaction Evaluation

Report Date: 07/27/2023
Test Method: ASTM D6938, Tex 115E

Client:

V.K. Knowlton Construction and Utilities, Inc.
18225 FM 2252
San Antonio, TX 78266

Project:

S232861
Boerne Professional Center
29.8139704, -98.7532319
Boerne, TX

Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
1		06/02/23	22717		CH	19.5	105.2	22.1	101.8	124.3	6	97	95	C
2		06/02/23	22717		CH	19.5	105.2	21.8	102.9	125.3	6	98	95	C
3		06/02/23	22717		CH	19.5	105.2	22.5	99.8	122.3	6	95	95	C
4		06/06/23	22719		GC	10.4	125.3	11.6	124.6	139.1	8	99	95	C
5		06/06/23	22719		GC	10.4	125.3	12.0	123.8	138.7	8	99	95	C
6		06/06/23	22717		CH	19.5	105.2	20.7	106.2	128.2	8	101	95	C
7		06/06/23	22717		CH	19.5	105.2	20.1	104.2	125.1	6	99	95	C
8		06/06/23	22717		CH	19.5	105.2	18.6	103.5	122.8	6	98	95	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
1	Storm Drain: Drain A STA 7+25							1st Lift		Troxler / 3430 / 30173 / 06/24/2022			Villarreal Sr., Robert	
2	Storm Drain: Drain C STA 2+00							1st Lift		Troxler / 3430 / 30173 / 06/24/2022			Villarreal Sr., Robert	
3	Storm Drain: Drain C STA 4+50							1st Lift		Troxler / 3430 / 30173 / 06/24/2022			Villarreal Sr., Robert	
4	Storm Drain: Storm Drain C,STA 1+50							2nd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
5	Storm Drain: Storm Drain C,STA 4+50							2nd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
6	Storm Drain: Storm Drain A,STA 7+00							2nd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
7	Storm Drain: Storm Drain A,STA 2+50							3rd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
8	Storm Drain: Storm Drain A,STA 5+50							3rd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

Testing performed when called in.
InTEC did not observe the installation of the material.
Testing directed by the City Inspector when present.
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Compaction Evaluation

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Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
9		06/06/23	22717		CH	19.5	105.2	19.4	102.9	122.9	6	98	95	C
10		06/12/23	22717		CH	19.5	105.2	18.9	104.3	124.0	8	99	95	C
11		06/12/23	22717		CH	19.5	105.2	18.9	105.6	125.6	8	100	95	C
12		06/13/23	22717		CH	19.5	105.2	20.5	106.2	128.0	8	101	95	C
13		06/13/23	22717		CH	19.5	105.2	18.6	107.8	127.9	8	102	95	C
14		06/14/23	22717		CH	19.5	105.2	20.1	103.7	124.5	8	99	95	C
15		06/14/23	22717		CH	19.5	105.2	18.5	106.2	125.8	8	101	95	C
16		06/14/23	22718		CH	13.8	117.7	13.3	117.3	132.9	8	100	95	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
9	Storm Drain: Storm Drain A,STA 7+50							3rd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
10	Sewer Main: Line A,STA 56+50							1st Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
11	Sewer Main: 8" Sewer main, Line A, 56+00							2nd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
12	Sewer Main: 8" Sewer main, Line A ,STA 56+50							3rd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
13	Sewer Main: Line A, STA 56+00							4th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
14	Sewer Main: Line A,STA 57+00							5th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
15	Sewer Main: Line A,STA 56+50							6th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
16	Sewer Main: Line A,STA 58+00							1st Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

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Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
17		06/15/23	22718		CH	13.8	117.7	14.1	113.8	129.8	8	97	95	C
18		06/15/23	22718		CH	13.8	117.7	13.7	114.6	130.3	8	97	95	C
19		06/16/23	22718		CH	13.8	117.7	13.2	115.2	130.4	8	98	95	C
20		06/16/23	22718		CH	13.8	117.7	14.3	114.8	131.2	8	98	95	C
21		06/16/23	22717		CH	19.5	105.2	20.8	104.7	126.5	8	100	95	C
22		06/16/23	22717		CH	19.5	105.2	22.1	103.5	126.4	8	98	95	C
23		06/19/23	22717		CH	19.5	105.2	19.9	103.4	124.0	8	98	95	C
24		06/19/23	22717		CH	19.5	105.2	18.7	104.9	124.5	8	100	95	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
17	Sewer Main: Line A, STA 58+00							2nd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
18	Sewer Main: Line A,STA 58+00							3rd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
19	Sewer Main: Line A,STA 58+10							4th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
20	Sewer Main: 8"sewer main,Line A,STA 58+50							5th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
21	Sewer Main: 8"sewer main,Line A,STA 61+00							1st Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
22	Sewer Main: 8"sewer main,Line A,STA 64+50							1st Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
23	Sewer Main: Line A,STA 60+50							2nd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
24	Sewer Main: Line A,STA 63+50							2nd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

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25		06/19/23	22717		CH	19.5	105.2	18.7	106.2	126.1	8	101	95	C
26		06/19/23	22717		CH	19.5	105.2	19.4	103.8	123.9	8	99	95	C
27		06/20/23	22718		CH	13.8	117.7	12.9	115.6	130.5	8	98	95	C
28		06/20/23	22718		CH	13.8	117.7	13.5	116.2	131.9	8	99	95	C
29		06/20/23	22718		CH	13.8	117.7	14.3	114.9	131.3	8	98	95	C
30		06/20/23	22718		CH	13.8	117.7	14.2	115.4	131.8	8	98	95	C
31		06/20/23	22718		CH	13.8	117.7	14.3	116.8	133.5	8	99	95	C
32		06/20/23	22718		CH	13.8	117.7	14.8	117.2	134.5	8	100	95	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
25	Sewer Main: Line A,STA 60+50							3rd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
26	Sewer Main: Line A,STA 63+50							3rd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
27	Sewer Main: Line A, STA 60+50							4th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
28	Sewer Main: Line A, STA 64+50							4th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
29	Sewer Main: Line A, STA 65+50							1st Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
30	Sewer Main: Line A, STA 60+50							5th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
31	Sewer Main: Line A, STA 63+50							5th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
32	Sewer Main: Line A, STA 65+75							2nd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

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Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
33		06/21/23	22718		CH	13.8	117.7	14.1	115.6	131.9	8	98	95	C
34		06/21/23	22718		CH	13.8	117.7	12.8	116.1	131.0	8	99	95	C
35		06/21/23	22719		GC	10.4	125.3	9.8	124.6	136.8	8	99	95	C
36		06/21/23	22719		GC	10.4	125.3	10.7	125.4	138.8	8	100	95	C
37		06/22/23	22718		CH	13.8	117.7	12.9	115.4	130.3	8	98	95	C
38		06/23/23	22718		CH	13.8	117.7	12.8	116.2	131.1	8	99	95	C
39		06/23/23	22718		CH	13.8	117.7	14.2	116.8	133.4	8	99	95	C
40		06/23/23	22718		CH	13.8	117.7	13.2	116.7	132.1	8	99	95	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
33	Sewer Main: 18" Sewer main, Line A, STA 63+00							6th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
34	Sewer Main: 18" Sewer main, Line A, STA 65+75							3rd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
35	Sewer Main: 18" Sewer main, Line A,STA 63+50							7th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
36	Sewer Main: 18" Sewer main, Line A,STA 65+75							4th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
37	Sewer Main: 18" Sewer main, Line A, STA 60+50							6th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
38	Sewer Main: 18" Sewer main, Line A,STA 60+25							7th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
39	Sewer Main: Line A,STA 64+00							8th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
40	Sewer Main: 18" Sewer main, Line A,STA 65+50							5th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

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41		06/26/23	22717		CH	19.5	105.2	18.6	103.7	123.0	8	99	95	C
42		06/27/23	22717		CH	19.5	105.2	19.7	106.2	127.1	8	101	95	C
43		06/27/23	22717		CH	19.5	105.2	18.9	104.3	124.0	8	99	95	C
44		06/28/23	22717		CH	19.5	105.2	21.1	101.2	122.6	8	96	95	C
45		06/28/23	22717		CH	19.5	105.2	21.7	105.4	128.3	8	100	95	C
46		06/29/23	22717		CH	19.5	105.2	19.9	104.3	125.1	8	99	95	C
47		06/29/23	22717		CH	19.5	105.2	21.4	103.2	125.3	8	98	95	C
48		06/30/23	22717		CH	19.5	105.2	21.6	107.3	130.5	8	102	95	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
41	Sewer Main: 18" Sewer main, Line A,71+50							1st Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
42	Sewer Main: Line A, 18" Sewer main, STA 71+00							2nd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
43	Sewer Main: Line A, STA 71+25							3rd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
44	Sewer Main: 18" Sewer main, Line A,71+75							4th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
45	Sewer Main: 18" Sewer main, Line A,STA 73+50							1st Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
46	Sewer Main: Line A,STA 74+00							2nd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
47	Sewer Main: 18" sewer main, Line A, STA 74+50							3rd Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
48	Sewer Main: Line A,STA 74+25							4th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

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S232861
Boerne Professional Center
29.8139704, -98.7532319
Boerne, TX

Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
49		07/03/23	22718		CH	13.8	117.7	14.3	116.9	133.6	6	99	95	C
50		07/03/23	22718		CH	13.8	117.7	15.0	115.7	133.1	6	98	95	C
51		07/03/23	22719		GC	10.4	125.3	9.4	128.9	141.0	6	103	95	C
52		07/03/23	22719		GC	10.4	125.3	10.1	129.6	142.7	6	103	95	C
53		07/05/23	22719		GC	10.4	125.3	9.7	128.5	141.0	4	103	95	C
54		07/05/23	22719		GC	10.4	125.3	9.6	122.6	134.4	4	98	95	C
55		07/06/23	22717		CH	19.5	105.2	20.4	106.2	127.9	8	101	95	C
56		07/06/23	22717		CH	19.5	105.2	19.2	104.6	124.7	8	99	95	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
49	Sewer Main: MH A-31 STA 74+20							4th Lift		Troxler / 3430 / 24204 / 06/07/2023			Ramirez, Julius	
50	Sewer Main: MH A-31 STA 75+50							4th Lift		Troxler / 3430 / 24204 / 06/07/2023			Ramirez, Julius	
51	Sewer Main: Line A STA 63+50							1st Lift		Troxler / 3430 / 24204 / 06/07/2023			Ramirez, Julius	
52	Sewer Main: Line A STA 65+00							1st Lift		Troxler / 3430 / 24204 / 06/07/2023			Ramirez, Julius	
53	Sewer Main: Line A STA 65+50							6th Lift		Troxler / 3430P / 74319 / 05/03/2023			Johnson, Thomas	
54	Sewer Main: Line A STA 65+50							6th Lift		Troxler / 3430P / 74319 / 05/03/2023			Johnson, Thomas	
55	Sewer Main: 18" Sewer main, Line A,STA 74+75							5th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
56	Sewer Main: 18" Sewer main, Line A,STA 78+00							1st Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

Testing performed when called in.
InTEC did not observe the installation of the material.
Testing directed by the City Inspector when present.
Test results apply only to the specific locations and materials noted and may not represent any other locations or elevations.



InTEC of San Antonio
12028 Radium
San Antonio, TX 78216
Phone: 210-525-9033

Compaction Evaluation

Report Date: 07/27/2023
Test Method: ASTM D6938, Tex 115E

Client:

V.K. Knowlton Construction and Utilities, Inc.
18225 FM 2252
San Antonio, TX 78266

Project:

S232861
Boerne Professional Center
29.8139704, -98.7532319
Boerne, TX

Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
57		07/06/23	22717		CH	19.5	105.2	19.5	106.2	126.9	8	101	95	C
58		07/07/23	22718		CH	13.8	117.7	12.9	115.8	130.7	8	98	95	C
59		07/07/23	22718		CH	13.8	117.7	13.1	115.8	131.0	8	98	95	C
69		07/13/23	22718		CH	13.8	117.7	13.5	116.9	132.7	6	99	95	C
71		07/13/23	22718		CH	13.8	117.7	12.9	118.2	133.4	6	100	95	C
72		07/14/23	22718		CH	13.8	117.7	14.1	118.6	135.3	6	101	95	C
75		07/14/23	22718		CH	13.8	117.7	13.6	115.8	131.5	6	98	95	C
78		07/17/23	22718		CH	13.8	117.7	13.5	115.7	131.3	6	98	95	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
57	Sewer Main: 18" Sewer main, Line A,STA 64+00							8th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
58	Sewer Main: 18" Sewer main, Line A,STA 64+50							9th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
59	Sewer Main: 18" Sewer main, Line A,STA 64+50							10th Lift		Troxler / 3430 / 38292 / 07/26/2022			Pereida, Gerald	
69	Sewer Main: Line A STA 5+00							1st Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
71	Sewer Main: Line A STA 6+00							2nd Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
72	Sewer Main: Line A STA 5+00							3rd Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
75	Sewer Main: Line A STA 6+00							4th Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
78	Sewer Main: Line A STA 5+00							5th Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

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InTEC of San Antonio
12028 Radium
San Antonio, TX 78216
Phone: 210-525-9033

Compaction Evaluation

Report Date: 07/27/2023
Test Method: ASTM D6938, Tex 115E

Client:

V.K. Knowlton Construction and Utilities, Inc.
18225 FM 2252
San Antonio, TX 78266

Project:

S232861
Boerne Professional Center
29.8139704, -98.7532319
Boerne, TX

Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
79		07/18/23	22718		CH	13.8	117.7	13.7	117.9	134.1	8	100	95	C
80		07/20/23	22717		CH	19.5	105.2	18.9	103.3	122.8	6	98	95	C
81		07/20/23	22717		CH	19.5	105.2	20.2	102.8	123.6	6	98	95	C
82		07/21/23	22717		CH	19.5	105.2	18.7	103.2	122.5	6	98	95	C
83		07/21/23	22717		CH	19.5	105.2	19.1	102.8	122.4	6	98	95	C
84		07/21/23	22717		CH	19.5	105.2	18.8	104.5	124.1	6	99	95	C
85		07/21/23	22717		CH	19.5	105.2	20.2	103.2	124.0	6	98	95	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
79	Sewer Main: Line A,STA 6+00							6th Lift		Troxler / 3430 / 30784 / 06/07/2023			Pereida, Gerald	
80	Sewer Main: Line A STA 78+00							1st Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
81	Sewer Main: Line A STA 77+50							2nd Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
82	Sewer Main: Line A STA 78+00							3rd Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
83	Sewer Main: Line A STA 82+00							1st Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
84	Sewer Main: Line A STA 78+00							4th Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
85	Sewer Main: Line A STA 82+00							2nd Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

Testing performed when called in.
InTEC did not observe the installation of the material.
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InTEC of San Antonio
12028 Radium
San Antonio, TX 78216
Phone: 210-525-9033

Compaction Evaluation

Report Date: 09/08/2023
Test Method: ASTM D6938, Tex 115E

Client:

V.K. Knowlton Construction and Utilities, Inc.
18225 FM 2252
San Antonio, TX 78266

Project:

S232861
Boerne Professional Center
29.8139704, -98.7532319
Boerne, TX

Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
86		08/16/23	22717		CH	19.5	105.2	18.7	104.4	123.9	6	99	95	C
87		08/17/23	22717		CH	19.5	105.2	20.5	104.8	126.3	8	100	95	C
88		08/17/23	22717		CH	19.5	105.2	19.6	103.4	123.7	8	98	95	C
89		08/18/23	22717		CH	19.5	105.2	19.8	103.8	124.4	8	99	95	C
90		08/18/23	22717		CH	19.5	105.2	20.4	106.3	128.0	8	101	95	C
91		08/21/23	22718		CH	13.8	117.7	13.1	114.9	130.0	6	98	95	C
92		08/21/23	22718		CH	13.8	117.7	13.3	115.6	131.0	6	98	95	C
93		08/22/23	22718		CH	13.8	117.7	13.1	116.2	131.4	6	99	95	C
Test Information														
Test #	Test Location						Elevation	Reference	Gauge Make / Model / SN / Calibrated			Field Technician		
86	Sewer Main: Line A STA 81+00							3rd Lift	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
87	Sewer Main: 18" offsite sewer main, Line A, STA 82+00							2nd Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
88	Sewer Main: Line A,STA 81+50							5th Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
89	Sewer Main: 18" offsite sewer, Line A,STA 82+50							6th Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
90	Sewer Main: 18" offsite sewer, Line A,STA 83+00							7th Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
91	Sewer Main: Line A STA 93+00							1st Lift	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
92	Sewer Main: Line A STA 94+00							2nd Lift	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
93	Sewer Main: Line A STA 93+00							3rd Lift	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

Testing performed when called in.
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San Antonio, TX 78216
Phone: 210-525-9033

Compaction Evaluation

Report Date: 09/08/2023
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Client:

V.K. Knowlton Construction and Utilities, Inc.
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San Antonio, TX 78266

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Boerne, TX

Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
94		08/22/23	22718		CH	13.8	117.7	13.4	115.8	131.3	6	98	95	C
103		08/22/23	22718		CH	13.8	117.7	12.9	118.3	133.6	6	101	95	C
104		08/22/23	22718		CH	13.8	117.7	13.1	115.9	131.1	6	98	95	C
105		08/23/23	22718		CH	13.8	117.7	13.3	116.2	131.7	6	99	95	C
106		08/23/23	22718		CH	13.8	117.7	13.1	115.5	130.6	6	98	95	C
107		08/23/23	22718		CH	13.8	117.7	13.1	119.2	134.8	6	101	95	C
108		08/23/23	22718		CH	13.8	117.7	13.4	116.9	132.6	6	99	95	C
109		08/24/23	22718		CH	13.8	117.7	13.2	115.7	131.0	6	98	95	C
Test Information														
Test #	Test Location						Elevation	Reference	Gauge Make / Model / SN / Calibrated			Field Technician		
94	Sewer Main: Line A STA 97+00							1st Lift	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
103	Sewer Main: Line A STA 94+00							4th Lift	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
104	Sewer Main: Line A STA 98+00							2nd Lift	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
105	Sewer Main: Line A STA 93+00							5th Lift	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
106	Sewer Main: Line A STA 97+00							3rd Lift	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
107	Sewer Main: Line A STA 94+00							6th Lift	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
108	Sewer Main: Line A STA 98+00							4th Lift	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
109	Sewer Main: Line A STA 96+00							5th Lift	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

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12028 Radium
San Antonio, TX 78216
Phone: 210-525-9033

Compaction Evaluation

Report Date: 09/08/2023
Test Method: ASTM D6938, Tex 115E

Client:

V.K. Knowlton Construction and Utilities, Inc.
18225 FM 2252
San Antonio, TX 78266

Project:

S232861
Boerne Professional Center
29.8139704, -98.7532319
Boerne, TX

Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
110		08/24/23	22718		CH	13.8	117.7	13.3	116.3	131.8	6	99	95	C
111		08/24/23	22719		GC	10.4	125.3	11.8	121.3	135.6	6	97	95	C
112		08/24/23	22719		GC	10.4	125.3	9.8	124.6	136.8	6	99	95	C
113		08/25/23	22719		GC	10.4	125.3	9.7	124.7	136.8	8	100	95	C
114		08/25/23	22719		GC	10.4	125.3	11.4	126.2	140.6	8	101	95	C
115		08/25/23	22719		GC	10.4	125.3	9.7	123.9	135.9	8	99	95	C
116		08/25/23	22719		GC	10.4	125.3	10.5	124.6	137.7	8	99	95	C
122		08/31/23	22717		CH	19.5	105.2	19.3	106.2	126.7	8	101	95	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
110	Sewer Main: Line A STA 97+00							6th Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
111	Sewer Main: Line A STA 85+00							1st Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
112	Sewer Main: Line A STA 89+00							1st Lift		Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro	
113	Sewer Main: Line A, STA 86+00							2nd Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
114	Sewer Main: Line A, STA 89+00							2nd Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
115	Sewer Main: Line A,STA 86+10							3rd Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
116	Sewer Main: Line A,STA 89+10							3rd Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
122	Sewer Main: 18" Sewer main. LINE A,STA 85+00							4th Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

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Compaction Evaluation

Report Date: 09/08/2023
Test Method: ASTM D6938, Tex 115E

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Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
123		08/31/23	22717		CH	19.5	105.2	20.1	103.8	124.7	8	99	95	C
124		08/31/23	22717		CH	19.5	105.2	19.9	104.6	125.4	8	99	95	C
125		08/31/23	22717		CH	19.5	105.2	20.8	107.3	129.6	8	102	95	C
126		08/31/23	22717		CH	19.5	105.2	22.5	103.8	127.2	8	99	95	C
127		08/31/23	22717		CH	19.5	105.2	20.7	105.7	127.6	8	100	95	C
128		09/01/23	22717		CH	19.5	105.2	19.2	103.4	123.3	8	98	95	C
129		09/01/23	22717		CH	19.5	105.2	20.1	104.6	125.6	8	99	95	C
135		09/05/23	22717		CH	19.5	105.2	18.6	104.3	123.7	8	99	95	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
123	Sewer Main: 18" Sewer main. LINE A,STA 90+00							4th Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
124	Sewer Main: 18" Sewer main. LINE A,STA 100+50							1st Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
125	Sewer Main: Line A,STA 85+10							5th Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
126	Sewer Main: Line A,STA 90+10							5th Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
127	Sewer Main: Line A,STA 100+00							2nd Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
128	Sewer Main: Line A,STA 100+10							3rd Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
129	Sewer Main: Line A,STA 100+00							4th Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
135	Sewer Main: Line A,STA 85+00							6th Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

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InTEC did not observe the installation of the material.
Testing directed by the City Inspector when present.
Test results apply only to the specific locations and materials noted and may not represent any other locations or elevations.



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San Antonio, TX 78216
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Compaction Evaluation

Report Date: 09/08/2023
Test Method: ASTM D6938, Tex 115E

Client:

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18225 FM 2252
San Antonio, TX 78266

Project:

S232861
Boerne Professional Center
29.8139704, -98.7532319
Boerne, TX

Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
136		09/05/23	22717		CH	19.5	105.2	19.2	103.8	123.7	8	99	95	C
137		09/05/23	22718		CH	13.8	117.7	13.4	116.8	132.5	8	99	95	C
138		09/05/23	22719		GC	10.4	125.3	10.4	124.7	137.7	8	100	95	C
139		09/05/23	22719		GC	10.4	125.3	10.3	125.4	138.3	8	100	95	C
140		09/05/23	22719		GC	10.4	125.3	9.4	125.4	137.2	8	100	95	C
141		09/06/23	22718		CH	13.8	117.7	12.8	116.2	131.1	8	99	95	C
142		09/06/23	22718		CH	13.8	117.7	14.5	116.8	133.7	8	99	95	C
143		09/07/23	22718		CH	13.8	117.7	13.1	116.2	131.4	8	99	95	C
Test Information														
Test #	Test Location						Elevation	Reference	Gauge Make / Model / SN / Calibrated			Field Technician		
136	Sewer Main: Line A,STA 90+00							6th Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
137	Sewer Main: Line A, STA 3+00							1st Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
138	Sewer Main: Line A,STA 90+00							7th Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
139	Sewer Main: Line A,STA 85+00							7th Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
140	Sewer Main: Line A,STA 100+00							5th Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
141	Sewer Main: Line A, STA 1+50							2nd Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
142	Sewer Main: Line A, STA 2+00							3rd Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
143	Sewer Main: Line A, STA 2+50							4th Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

Testing performed when called in.
InTEC did not observe the installation of the material.
Testing directed by the City Inspector when present.
Test results apply only to the specific locations and materials noted and may not represent any other locations or elevations.



InTEC of San Antonio
12028 Radium
San Antonio, TX 78216
Phone: 210-525-9033

Compaction Evaluation

Report Date: 09/08/2023
Test Method: ASTM D6938, Tex 115E

Client:

V.K. Knowlton Construction and Utilities, Inc.
18225 FM 2252
San Antonio, TX 78266

Project:

S232861
Boerne Professional Center
29.8139704, -98.7532319
Boerne, TX

Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
144		09/07/23	22718		CH	13.8	117.7	13.8	115.8	131.8	8	98	95	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
144	Sewer Main: Line A, STA 1+15							5th Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

Testing performed when called in.
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InTEC of San Antonio
12028 Radium
San Antonio, TX 78216
Phone: 210-525-9033

Compaction Evaluation

Report Date: 11/07/2023
Test Method: ASTM D6938, Tex 115E

Client:

V.K. Knowlton Construction and Utilities, Inc.
18225 FM 2252
San Antonio, TX 78266

Project:

S232861
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Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
145		09/08/23	22717		CH	19.5	105.2	19.4	104.6	124.9	8	99	95	C
146		09/08/23	22718		CH	13.8	117.7	13.2	115.9	131.2	8	98	95	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
145	Sewer Main: Line A, STA 100+10							5th Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
146	Sewer Main: Line A, STA 3+00							6th Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

Testing performed when called in.
InTEC did not observe the installation of the material.
Testing directed by the City Inspector when present.
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