

South Shore Testing & Environmental

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February 24, 2020

Mr. Rich Wilson
Trademark Construction Co., Inc.
15916 Bernardo Center Drive
San Diego, CA 92127

SUBJECT: ONSITE STORMWATER INFILTRATION SYSTEM INVESTIGATION

Proposed Multi-Family Residential Development
APN: 339-200-080, 9.92-Acres
NE Corner of Brea and Normandy Roads
City of Menifee, Riverside County, California
Work Order No. 4722002.01

Dear Mr. Wilson:

In accordance with your authorization, we have conducted percolation testing for the infiltration system for the proposed multi-family residential development. The purpose of our investigation was to provide infiltration rates for proposed infiltration systems. The proposed infiltration test areas were designated on a 40-scale Conceptual Site Plan (Summa Architecture, 2019) by the project civil engineer, Kolibrien Civil, Structural, and Surveying of Temecula, California.

Site Description

The subject site is a nearly square-shaped, 9.92-acre parcel of land located the northeast corner of Brea and Normandy Roads in the city of Menifee, Riverside County, California. The site is bordered on the north by a flood control channel and an existing single-family residential tract, on the west by Brea Road and a mini-storage facility, on the south by Normandy Road and a park, and on the east by vacant undeveloped land.

Topographically on the subject site, for the most part, consists of low rolling gently sloping terrain with natural gradients of less than 5 percent. The southeast corner of the site consists of a small hill with numerous large unweathered granitic boulders up to 20-ft in diameter. Natural gradients on the hill are approximately 15 percent. Drainage is accomplished by sheetflow to the northwest toward Brea Road and the flood control channel. Vegetation onsite generally consists of a sparse to moderate low dried growth of annual weeds and grasses.

Proposed Development

The proposed development consists of the construction of a multi-family residential development with interior parking and driveways, a 3-story commercial building, a fitness building, a clubhouse, a recreation area, and landscape area. The Conceptual Site Plan (Summa, 2019) depicts the extreme southeast corner of the site, which is underlain by numerous granitic boulders, is to remain vacant and in a relatively natural condition.

Percolation Investigation

Percolation testing was conducted on January 31, 2020 at locations designated by the project civil engineer. Six (6) tests were performed within the onsite late to middle Pleistocene-age Old alluvial fan deposits (Morton, 2003) on the northerly portion of the subject site. Six (6) exploratory trenches were advanced to a depth of 3-ft below the ground surface (bgs) with an infiltration test performed at the bottom of each trench. The Old alluvial fan deposits, for the most part, consisted of silty Sand (Unified Soil Classification – SM) that can generally be described as red to orange brown, fine to coarse grained, minor gravel size, abundant fines, dry (top 1-ft) to slightly moist, loose (top 2-ft) to medium dense to very dense and excavated with slight difficulty. Approximately 0.5 to 1-ft of undocumented fills were observed overlying the Old alluvial fan deposits in most areas. Infiltration test pits were advanced to a depth of 36-ft bgs utilizing a Case No. 590 extend-a-backhoe equipped with a 18-inch bucket. Our field personnel logged the exploratory trenches and a copies of our Exploratory Trench Logs are presented in **Appendix B**.

GROUNDWATER

Groundwater was not encountered to the maximum depth explored of 16.2-ft below the ground surface (bgs) previously excavated on the northerly portion of the subject site (T.H.E., 2003). Based on historic regional groundwater information (DWR, 1978), regional high groundwater is at least 100-ft bgs on the lower elevations of the subject site. Minor fluctuations can and will likely occur in moisture or free water content of the soil owing to rainfall and irrigation over time.

SUMMARY OF TEST PROCEDURES

The testing procedure was performed in accordance with Riverside County Department of Environmental Health's "Local Management Program for Onsite Wastewater Treatment Systems", which became effective October 5, 2016 and the resulting perc rates were converted to infiltration rates utilizing the Porchet Method as outlined in the Riverside County Flood Control and Water Conservation District, "Design Handbook for Low Impact Development Best Management Practices" dated September 2011. The percolation tests were performed at a depth of 3-ft bgs (per

the project civil engineer). Owing to the mostly moderately fast rates the procedures for **Normal** soils were followed (see percolation test sheets).

Conclusion

Testing indicated infiltration rates at 3-ft below existing grade within the native soils obtained fast to moderately fast rates of 6.0 to 13.3-min/inch percolation rate. The percolation rates were converted to infiltration rate utilizing the Porchet Method. The converted infiltration rates varied from 1.1 to 3.5-inches/hr. The rate provided does not include a safety factor. The test locations are presented on our Infiltration Test Location Map, **Plate 1**.

PERCOLATION TEST NO.	DEPTH OF TEST BELOW GRADE (In Feet)	PERCOLATION RATE (Min/Inch)	INFILTRATION RATE (In/Hr)
1	3	7.1	4.3
2	3	13.3	2.2
3	3	12.0	3.1
4	3	15.0	2.7
5	3	6.0	7.0
6	3	7.5	5.3

CLOSURE

It should be noted that infiltration rates determined by testing are ultimate rates based on short-duration field test results utilizing clear water. Infiltration rates can be affected by silt build-up, debris, degree of soil saturation, and other factors. An appropriate safety factor should be applied prior to use in design to account for subsoil inconsistencies, possible compaction related to site grading, and potential silting of the percolating soils. The safety factor should also be determined with consideration to other factors in the system design, particularly storm water volume estimates and the safety factors associated with those design components.

LIMITATIONS

The tested rates are representative for the areas and soil types tested. Should the systems be moved, or the exposed soil types are found to different within the proposed systems, the approved infiltration rates may not apply. Our investigation was performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable Geotechnical Engineers and Geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

The report is issued with the understanding that it is used only by the owner and it is the sole responsibility of the owner or their representative to ensure that the information and

SOUTH SHORE TESTING & ENVIRONMENTAL

INFILTRATION TEST LOCATION MAP
 PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT
 APN: 329-200-080, 9.92-ACRES
 NE CORNER OF BEREA & NORMANDY ROADS
 CITY OF MENIFEE, RIVERSIDE COUNTY, CALIFORNIA

WORK ORDER: 4722002.011 DATE: FEB. 2020 PLATE: 1 OF 1

APPROXIMATE LOCATION OF INFILTRATION TESTS

1-6

265 OPEN/CARPORT STALLS
 490 TOTAL STALLS PROVIDED

96 STALLS
 174 STALLS
 65 STALLS
 24 STALLS
 359 STALLS
 90 STALLS

TOTAL STALLS REQUIRED

DWELLING UNIT SUMMARY
 PLAN 1 1BD/1BA 700 SF 96 UNITS 12.5%
 PLAN 2 2BD/2BA 980 SF 116 UNITS 20.1%
 PLAN 3 3BD/2BA 1,200 SF 26 UNITS 9.8%

SITE AREA 432,115 SF
 RESIDENTIAL AREA 260,000 SF (0.59 FAR)
 RESIDENTIAL GARAGES 52,800 SF (0.11 FAR)
 COMMERCIAL AREA 30,000 SF (0.07 FAR)
 TOTAL BUILDING AREA 342,800 SF

F.A.R. 0.8 (1.0 ALLOWED)

STATEMENT OF OPERATIONS

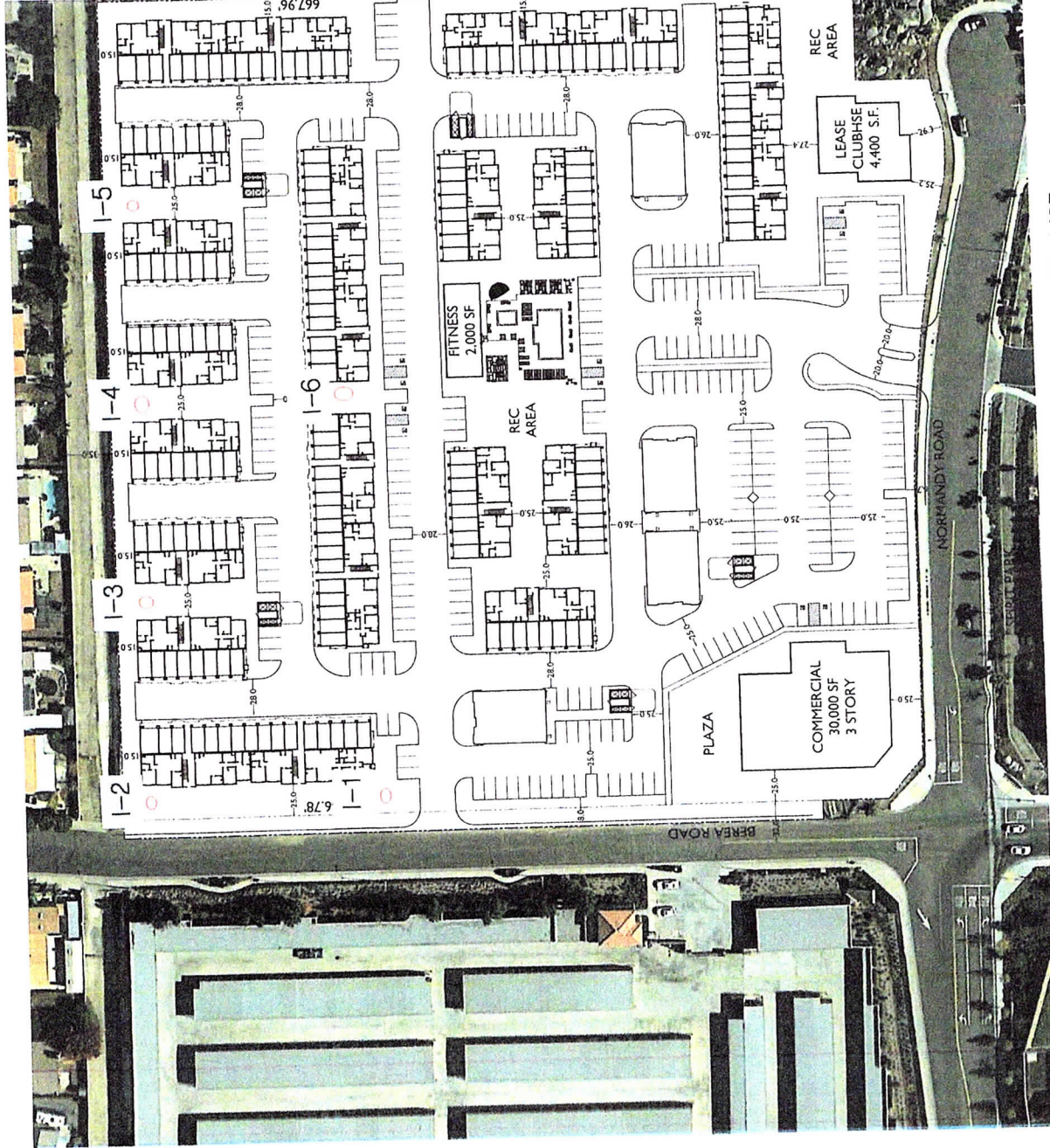
HORIZONTAL MIXED USE WITH WALK-UP TYPE
 APARTMENTS. COMMERCIAL SPACE TO CONSIST OF
 OFFICE SPACE AND CHILD CARE FACILITIES. EMPLOYEES
 AND USERS TO BE DETERMINED PER SCHEMATIC DESIGN.



CONCEPTUAL SITE PLAN

SUMMA ARCHITECTURE
 5256 S. MISSION ROAD STE. 404
 BONSALL, CA. 92003
 760.724.1198

SP



BOULDERS MIXED USE

MENIFEE, CA
 TRADEMARK CONSTRUCTION
 137 E BERNARD CENTER DRIVE
 SAN DIEGO, CA 92127
 (760) 489-9563

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recommendations contained herein are brought to the attention of the architect, engineer, and appropriate jurisdictional agency for the project and incorporated into the plans; and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations contained herein during construction and in the field.

The samples taken and used for testing and the observations made are believed representative; however, soil and geologic conditions can vary significantly between test locations. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the scope of services provided by **South Shore Testing & Environmental**, or its assigns.

The findings of this report are valid as of the present date. However, changes in the condition of a property can occur with the passage of time, whether due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and revision as changed conditions are identified. The firm that performed the geotechnical investigation for this project should be retained to provide testing observation services during construction to maintain continuity of geotechnical interpretation and to check that the recommendations presented herein are implemented during construction of improvements.

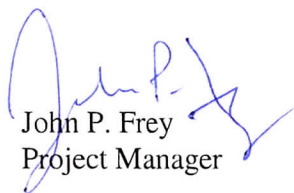
If another geotechnical firm is selected to perform the testing and observation services during construction operations, that firm should prepare a letter indicating their intent to assume the responsibilities of project geotechnical engineer of record. Selection of another firm to perform any of the recommended activities or failure to retain the undersigned to perform the recommended activities wholly absolves **South Shore Testing & Environmental**, the undersigned, and its assigns from any and all liability arising directly or indirectly from any aspects of this project.

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We appreciate the opportunity to be of service. Limitations and conditions contained in reference documents are considered in full force and applicable. If you have any questions, please do not hesitate to call our office.

Respectfully Submitted,

South Shore Testing & Environmental



John P. Frey
Project Manager



William C. Hobbs, RCE 42265
Civil Engineer

ATTACHMENTS

Plate 1 – Infiltration Test Location Map
Appendix A –References
Appendix B – Exploratory Trench Logs
Appendix C - Percolation Test Data

APPENDIX A

References

REFERENCES

CDM Smith, Inc. 2013, "Technical Guidance Document for Water Quality Management Plans" dated June 7, 2013.

County of Riverside GIS Website, 2020.

Department of Water Resources, 1978, "Water Resources Evaluation of the San Jacinto Area", District Report April 1978.

Morton, D.M., 2004, "Preliminary Digital Geologic Map of the Santa Ana 30' x 60' Quadrangle, Southern California (Version 2.0)", U.S. Geological Survey in Cooperation with the California Geologic Survey, Open-File Report 99-172, Scale: 1" = 100,000'.

Morton, D.M., 1991, "Geologic Map of the Romoland 7.5' Quadrangle, Riverside County, California", Scale: 1" = 2,000', U.S.G.S. Open-File Report 90-701.

Riverside County Flood Control and Water Conservation District, 2011, "Design Handbook for Low Impact Development Best Management Practices" dated 9, 2011.

South Shore Testing & Environmental, 2020, "Update to Preliminary Geotechnical Investigation & Assumption of Responsibility, Proposed Multi-Family Residential Development, APN: 339-200-080, 9.92-Acres, NE Corner of Berea and Normandy Roads, City of Menifee, Riverside County, California", Work Order No. 4722001.00U.

Summa Architecture, December 5, 2019, "Conceptual Site Plan, Boulders Mixed Use, Menifee, CA", Sheet SP, 40-Scale.

T.H.E. Soils Company, Inc., December 15, 2003, "Preliminary Geotechnical Investigation, Proposed Residential Development, ±10-Acre Parcel on the NEC of Newport and Berea Roads, Menifee Area, Riverside County, California", Work Order No. 657301.00.

APPENDIX B

Exploratory Trench Logs

LOGGED BY: JPF							METHOD OF EXCAVATION: CASE #580 N BACKHOE EQUIPPED W/ 18" BUCKET ELEVATION: ±			DATE OBSERVED: 1/30/2020 LOCATION: SEE PLATE 1				
<div>DEPTH (FEET)</div> <div>CLASSIFICATION</div> <div>BLOWS/FOOT</div> <div>UNDISTURBED SAMPLE</div> <div>BULK SAMPLE</div> <div>MOISTURE CONTENT(%)</div> <div>INPLACE DRY DENSITY (PCF)</div>							TEST PIT NO. <u>1</u> DESCRIPTION					SOIL TEST		
							<u>UNDOCUMENTED FILL</u> SILTY SAND (SM): DARK BROWN, FINE TO COARSE GRAINED, MINOR GRAVEL, LOOSE POROUS					INFILTRATION TEST		
							<u>OLD ALLUVIAL DEPOSITS</u> SILTY SAND (SM): RED BROWN, FINE TO COARSE GRAINED, ABUNDANT FINES, MINOR PINPOINT PORES IN UPPER 1 -FT, MINOR GRAVEL SIZE, DENSITY INCREASES W/ DEPTH SLIGHTLY MOIST							
5							TOTAL DEPTH=10.2FT NO GROUNDWATER NO CAVING							
10														
15														
20														
25														
30														
35														
40														
JOB NO: 4722002.00							LOG OF TEST PIT					FIGURE: T-1		

LOGGED BY: JPF						METHOD OF EXCAVATION: CASE #580 N BACKHOE EQUIPPED W/ 18" BUCKET ELEVATION: ±		DATE OBSERVED: 1/30/2020 LOCATION: SEE PLATE 1	
<div> <div>CLASSIFICATION</div> <div>BLOWS/FOOT</div> <div>UNDISTURBED SAMPLE</div> <div>BULK SAMPLE</div> <div>MOISTURE CONTENT(%)</div> <div>IN PLACE DRY DENSITY (PCF)</div> </div>						TEST PIT NO. <u>2</u> DESCRIPTION		SOIL TEST	
						<p>UNDOCUMENTED FILL</p> <p>SANDY SILT (ML): DARK BROWN, MINOR SAND, LOOSE, POROUS</p>		INFILTRATION TEST	
						<p>OLD ALLUVIAL DEPOSITS</p> <p>SILTY SAND (SM): REDDISH BROWN, FINE TO COARSE GRAINED, NUMEROUS PINPOINT PORES AND FINE ROOTS IN TOP 1 FT, MINOR GRAVEL SZ, SLIGHTLY MOIST, INCREASING IN DENSITY WITH DEPTH</p>			
						<p>TOTAL DEPTH=10.2FT</p> <p>NO GROUNDWATER</p> <p>NO CAVING</p>			
<div> <div>DEPTH (FEET)</div> <div>0</div> <div>5</div> <div>10</div> <div>15</div> <div>20</div> <div>25</div> <div>30</div> <div>35</div> <div>40</div> </div>									
JOB NO: 4722002.00						LOG OF TEST PIT		FIGURE: T-2	

LOGGED BY: JPF							METHOD OF EXCAVATION: CASE #580 N BACKHOE EQUIPPED W/ 18" BUCKET ELEVATION: ±			DATE OBSERVED: 1/30/2020 LOCATION: SEE PLATE 1	
DEPTH (FEET)	CLASSIFICATION	BLOWS/FOOT	UNDISTURBED SAMPLE	BULK SAMPLE	MOISTURE CONTENT(%)	IN PLACE DRY DENSITY (PCF)	TEST PIT NO. <u>3</u> DESCRIPTION			SOIL TEST	
							<u>UNDOCUMENTED FILL</u>			INFILTRATION TEST	
							<u>ALLUVIAL FAN DEPOSITS</u>				
							SILTY SAND (SM): DARK RED BROWN, FINE TO MEDIUM GRAINED, MINOR COARSE, MODERATELY SORTED, SLIGHTLY MOIST, NUMEROUS PINPOINT PORES IN UPPER 1-2 FT TOTAL DEPTH=3.0FT NO GROUNDWATER NO CAVING				
5											
10											
15											
20											
25											
30											
35											
40											
JOB NO: 4722002.00							LOG OF TEST PIT			FIGURE: T-3	

LOGGED BY: JPF							METHOD OF EXCAVATION: CASE #580 N BACKHOE EQUIPPED W/ 18" BUCKET ELEVATION: ±			DATE OBSERVED: 1/30/2020 LOCATION: SEE PLATE 1	
<div>DEPTH (ft) CLASSIFICATION BLOWS/FOOT UNDISTURBED SAMPLE BULK SAMPLE MOISTURE CONTENT(%) INPLACE DRY DENSITY (PCF)</div>							TEST PIT NO. <u>4</u> DESCRIPTION			SOIL TEST	
							<u>UNDOCUMENTED FILL</u>			INFILTRATION TEST	
							SILTY SAND (SM): DARK BROWN, FINE TO MEDIUM GRAINED, MINOR COARSE, LOOSE, POROUS				
							<u>OLD ALLUVIAL FAN DEPOSITS</u>				
5							SILTY SAND (SM): DARK RED BROWN, FINE TO COARSE GRAINED, MODERATELY SORTED, LOOSE TO MEDIUM DENSE, MINOR GRAVEL SIZE				
10							TOTAL DEPTH 3.0FT NO GROUNDWATER NO CAVING				
15											
20											
25											
30											
35											
40											
JOB NO: 4722002.00							LOG OF TEST PIT			FIGURE: T-4	

LOGGED BY: JPF								METHOD OF EXCAVATION: CASE #580 N BACKHOE EQUIPPED W/ 18" BUCKET ELEVATION: ±								DATE OBSERVED: 1/30/2020 LOCATION: SEE PLATE 1							
DEPTH (FEET)								TEST PIT NO. 5 DESCRIPTION								SOIL TEST							
								UNDOCUMENTED FILL								INFILTRATION TEST							
								SANDY SILT (ML) DARK BROWN, DRY, LOOSE, POROUS, MINOR CONSTRUCTION DEBRIS POROUS															
5								OLD ALLUVIAL FAN DEPOSITS SILTY SAND (SM): DARK RED BROWN, FINE TO COARSE GRAINED, MINOR GRAVEL SIZE, MODERATELY SORTED, SLIGHTLY MOIST, DENSITY INCREASING WITH DEPTH															
								TOTAL DEPTH 3.0FT NO GROUNDWATER NO CAVING															
10																							
15																							
20																							
25																							
30																							
35																							
40																							
JOB NO: 4722002.00								LOG OF TEST PIT								FIGURE: T-5							

LOGGED BY: JPF							METHOD OF EXCAVATION: CASE #580 N BACKHOE EQUIPPED W/ 18" BUCKET ELEVATION: ±			DATE OBSERVED: 1/30/2020 LOCATION: SEE PLATE 1		
DEPTH (FEET)	CLASSIFICATION	BLOWS/FOOT	UNDISTURBED SAMPLE	BULK SAMPLE	MOISTURE CONTENT (%)	IN PLACE DRY DENSITY (PCF)	TEST PIT NO. 6 DESCRIPTION			SOIL TEST		
							<u>UNDOCUMENTED FILL</u> GRAVELLY SANDY SILT (ML): DARK BROWN, SANDY IN PART, DRY, LOOSE, MINOR CONSTRUCTION DEBRIS			INFILTRATION TEST		
5							<u>OLD ALLUVIAL FAN DEPOSITS</u> SILTY SAND (SM): DARK RED BROWN, FINE TO COARSE GRAINED, LOOSE IN UPPER 2-FT, SLIGHTLY MOIST, INCREASING IN DENSITY WITH DEPTH					
10							TOTAL DEPTH 3.0FT NO GROUNDWATER NO CAVING					
15												
20												
25												
30												
35												
40												
JOB NO: 4722002.00							LOG OF TEST PIT			FIGURE: T-6		

APPENDIX C

Percolation Test Results

Appendix 4

Leach Line Percolation Data Sheet

Project <i>Trademark</i>	Job No. <i>472 2002.01</i>
Test Hole No. <i>I-1</i>	Date Excavated: <i>1-30-2020</i>
Depth of Test Hole: <i>36"</i>	Soil Classification <i>SM-ML</i>
Check for Sandy Soil Criteria Tested by: <i>JPF</i>	Date: _____ Presoak: <i>1-30-2020</i>
Actual Percolation Tested by: <i>JPF</i>	Date: <i>1-31-2020</i>

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (Min)	Initial Water Level (Inches)	Final Water Level (Inches)	▲ in Water Level (Inches)
<u>1</u>	<u>8:30</u> <u>8:55</u>	<i>25</i>	<i>6"</i>	<i>0.25</i>	<i>5 3/4</i>
<u>2</u>	_____				

Use Normal Sandy (Circle One) Soil Criteria

Time	Time Interval (Min)	Total Elapsed Time (Min)	Initial Water Level (Inches)	Final Water Level (Inches)	▲ in Water Level (Inches)	Percolation Rate (Min/Inch)
<u>9:48</u> <u>10:18</u>	<i>30</i>	<i>30</i>	<i>6"</i>	<i>1.0</i>	<i>5"</i>	<i>6.0</i>
<u>10:18</u> <u>10:48</u>	<i>30</i>	<i>60</i>	<i>6"</i>	<i>1 1/2</i>	<i>4 1/2</i>	<i>6.7</i>
<u>10:48</u> <u>11:18</u>	<i>30</i>	<i>90</i>	<i>6"</i>	<i>1 3/4</i>	<i>4 1/4</i>	<i>7.1</i>
<u>11:18</u> <u>11:48</u>	<i>30</i>	<i>120</i>	<i>6"</i>	<i>1 3/4</i>	<i>4 1/4</i>	<i>7.1</i>
<u>11:48</u> <u>12:18</u>	<i>30</i>	<i>150</i>	<i>6"</i>	<i>1 3/4</i>	<i>4 1/4</i>	<i>7.1</i>
<u>12:18</u> <u>12:48</u>	<i>30</i>	<i>180</i>	<i>6"</i>	<i>1 3/4</i>	<i>4 1/4</i>	<i>7.1</i>
<u>12:48</u> <u>1:18</u>	<i>30</i>	<i>240</i>	<i>6"</i>	<i>1 3/4</i>	<i>4 1/4</i>	<i>7.1</i>

Appendix 4

Leach Line Percolation Data Sheet

Project <u>Trademark</u>	Job No. <u>472 2002.01</u>
Test Hole No. <u>I-2</u>	Date Excavated: <u>1-30-2020</u>
Depth of Test Hole: <u>36"</u>	Soil Classification <u>SM-ML</u>
Check for Sandy Soil Criteria Tested by: <u>JPF</u>	Date: _____ Presoak: <u>1-30-2020</u>
Actual Percolation Tested by: <u>JPF</u>	Date: <u>1-31-2020</u>

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (Min)	Initial Water Level (Inches)	Final Water Level (Inches)	▲ in Water Level (Inches)
<u>1</u>	<u>8:32</u> <u>8:57</u>	<u>25</u>	<u>6 ²/₁₆</u>	<u>2 ¹/₄</u>	<u>3 ³/₄</u>
<u>2</u>	_____				

Use: Normal Sandy (Circle One) Soil Criteria

Time	Time Interval (Min)	Total Elapsed Time (Min)	Initial Water Level (Inches)	Final Water Level (Inches)	▲ in Water Level (Inches)	Percolation Rate (Min/Inch)
<u>9:51</u> <u>10:21</u>	<u>30</u>	<u>30</u>	<u>6"</u>	<u>2.5</u>	<u>3.5</u>	<u>8.6</u>
<u>10:21</u> <u>10:51</u>	<u>30</u>	<u>60</u>	<u>6"</u>	<u>2.75</u>	<u>3 ¹/₄</u>	<u>9.2</u>
<u>10:51</u> <u>11:21</u>	<u>30</u>	<u>90</u>	<u>6"</u>	<u>3 ⁰/₁₆</u>	<u>3 ⁰/₁₆</u>	<u>10</u>
<u>11:21</u> <u>11:51</u>	<u>30</u>	<u>120</u>	<u>6"</u>	<u>3 ¹/₂</u>	<u>2 ¹/₂</u>	<u>12</u>
<u>11:51</u> <u>12:21</u>	<u>30</u>	<u>150</u>	<u>6"</u>	<u>3 ³/₄</u>	<u>2 ¹/₄</u>	<u>13.3</u>
<u>12:21</u> <u>12:51</u>	<u>30</u>	<u>180</u>	<u>6"</u>	<u>3 ³/₄</u>	<u>2 ¹/₄</u>	<u>13.3</u>
<u>12:51</u> <u>1:21</u>	<u>30</u>	<u>240</u>	<u>6"</u>	<u>3 ³/₄</u>	<u>2 ¹/₄</u>	<u>13.3</u>

Appendix 4

Leach Line Percolation Data Sheet

Project <u>Trademark</u>	Job No. <u>472 2002.01</u>
Test Hole No. <u>I-3</u>	Date Excavated: <u>1-30-2020</u>
Depth of Test Hole: <u>36"</u>	Soil Classification <u>SM-ML</u>
Check for Sandy Soil Criteria Tested by: <u>JPF</u>	Date: _____ Presoak: <u>1-30-2020</u>
Actual Percolation Tested by: <u>JPF</u>	Date: <u>1-31-2020</u>

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (Min)	Initial Water Level (Inches)	Final Water Level (Inches)	▲ in Water Level (Inches)
<u>1</u>	<u>8:34</u> <u>8:59</u>	<u>25</u>	<u>6 9/16</u>	<u>2.75</u>	<u>3 1/4</u>
<u>2</u>	_____				

Use Normal Sandy (Circle One) Soil Criteria

Time	Time Interval (Min)	Total Elapsed Time (Min)	Initial Water Level (Inches)	Final Water Level (Inches)	▲ in Water Level (Inches)	Percolation Rate (Min/Inch)
<u>9:52</u> <u>10:22</u>	<u>30</u>	<u>30</u>	<u>6 9/16</u>	<u>2.5</u>	<u>3 1/2</u>	<u>8.6</u>
<u>10:22</u> <u>10:52</u>	<u>30</u>	<u>60</u>	<u>6 9/16</u>	<u>3.0</u>	<u>3.0</u>	<u>10</u>
<u>10:52</u> <u>11:22</u>	<u>30</u>	<u>90</u>	<u>6 9/16</u>	<u>3.0</u>	<u>3.0</u>	<u>10</u>
<u>11:22</u> <u>11:52</u>	<u>30</u>	<u>120</u>	<u>6 9/16</u>	<u>3 1/4</u>	<u>2 3/4</u>	<u>10.9</u>
<u>11:52</u> <u>12:22</u>	<u>30</u>	<u>150</u>	<u>6 9/16</u>	<u>3 1/4</u>	<u>2 3/4</u>	<u>10.9</u>
<u>12:22</u> <u>12:52</u>	<u>30</u>	<u>180</u>	<u>6 9/16</u>	<u>3 1/4</u>	<u>2 1/2</u>	<u>12</u>
<u>12:52</u> <u>1:22</u>	<u>30</u>	<u>240</u>	<u>6 9/16</u>	<u>3 1/4</u>	<u>2 1/2</u>	<u>12</u>

Appendix 4

Leach Line Percolation Data Sheet

Project <u>Trademark</u>	Job No. <u>472 2002.01</u>
Test Hole No. <u>I-4</u>	Date Excavated: <u>1-30-2020</u>
Depth of Test Hole: <u>36"</u>	Soil Classification <u>SM-ML</u>
Check for Sandy Soil Criteria Tested by: <u>JPF</u>	Date: _____ Presoak: <u>1-30-2020</u>
Actual Percolation Tested by: <u>JPF</u>	Date: <u>1-31-2020</u>

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (Min)	Initial Water Level (Inches)	Final Water Level (Inches)	▲ in Water Level (Inches)
<u>1</u>	<u>8:36</u> <u>9:01</u>	<u>25</u>	<u>6³/₄</u>	<u>2³/₄</u>	<u>3¹/₄</u>
<u>2</u>	_____				

Use: Normal Sandy (Circle One) Soil Criteria

Time	Time Interval (Min)	Total Elapsed Time (Min)	Initial Water Level (Inches)	Final Water Level (Inches)	▲ in Water Level (Inches)	Percolation Rate (Min/Inch)
<u>9:55</u> <u>10:25</u>	<u>30</u>	<u>30</u>	<u>6³/₁₆</u>	<u>3"</u>	<u>3"</u>	<u>10</u>
<u>10:25</u> <u>10:55</u>	<u>30</u>	<u>60</u>	<u>6³/₄</u>	<u>3¹/₂</u>	<u>2¹/₂</u>	<u>12</u>
<u>10:55</u> <u>11:25</u>	<u>30</u>	<u>90</u>	<u>6³/₄</u>	<u>3³/₄</u>	<u>2¹/₄</u>	<u>13.3</u>
<u>11:25</u> <u>11:55</u>	<u>30</u>	<u>120</u>	<u>6"</u>	<u>3³/₄</u>	<u>2¹/₄</u>	<u>13.3</u>
<u>11:55</u> <u>12:25</u>	<u>30</u>	<u>150</u>	<u>6³/₄</u>	<u>4"</u>	<u>2"</u>	<u>15</u>
<u>12:25</u> <u>12:55</u>	<u>30</u>	<u>180</u>	<u>6³/₄</u>	<u>4"</u>	<u>2"</u>	<u>15</u>
<u>12:55</u> <u>1:25</u>	<u>30</u>	<u>240</u>	<u>6³/₄</u>	<u>4"</u>	<u>2"</u>	<u>15</u>

Appendix 4

Leach Line Percolation Data Sheet

Project <u>Trademark</u>	Job No. <u>472 2002.01</u>
Test Hole No. <u>I-5</u>	Date Excavated: <u>1-30-2020</u>
Depth of Test Hole: <u>36"</u>	Soil Classification <u>SM-ML</u>
Check for Sandy Soil Criteria Tested by: <u>JPF</u>	Date: _____ Presoak: <u>1-30-2020</u>
Actual Percolation Tested by: <u>JPF</u>	Date: <u>1-31-2020</u>

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (Min)	Initial Water Level (Inches)	Final Water Level (Inches)	▲ in Water Level (Inches)
<u>1</u>	<u>8:39</u> <u>9:04</u>	<u>25</u>	<u>6 ²/₁₆</u>	<u>1/4</u>	<u>5 ³/₄</u>
<u>2</u>	_____				

Use Normal Sandy (Circle One) Soil Criteria

Time	Time Interval (Min)	Total Elapsed Time (Min)	Initial Water Level (Inches)	Final Water Level (Inches)	▲ in Water Level (Inches)	Percolation Rate (Min/Inch)
<u>11:00</u> <u>11:30</u>	<u>30</u>	<u>30</u>	<u>6"</u>	<u>1/2</u>	<u>5 1/2</u>	<u>5.5</u>
<u>11:30</u> <u>12:00</u>	<u>30</u>	<u>60</u>	<u>6"</u>	<u>1/2</u>	<u>5 1/2</u>	<u>5.5</u>
<u>12:00</u> <u>12:30</u>	<u>30</u>	<u>90</u>	<u>6"</u>	<u>3/4</u>	<u>5 1/4</u>	<u>5.7</u>
<u>12:30</u> <u>1:00</u>	<u>30</u>	<u>120</u>	<u>6"</u>	<u>1"</u>	<u>5"</u>	<u>6"</u>
<u>1:00</u> <u>1:30</u>	<u>30</u>	<u>150</u>	<u>6"</u>	<u>1"</u>	<u>5"</u>	<u>6"</u>
<u>1:30</u> <u>2:00</u>	<u>30</u>	<u>180</u>	<u>6"</u>	<u>1"</u>	<u>5"</u>	<u>6"</u>
<u>2:00</u> <u>2:30</u>	<u>30</u>	<u>240</u>	<u>6"</u>	<u>1"</u>	<u>5"</u>	<u>6"</u>

Appendix 4

Leach Line Percolation Data Sheet

Project <u>Trademark</u>	Job No. <u>472 2002.01</u>
Test Hole No. <u>I-6</u>	Date Excavated: <u>1-30-2020</u>
Depth of Test Hole: <u>36"</u>	Soil Classification <u>SM-ML</u>
Check for Sandy Soil Criteria Tested by: <u>JPF</u>	Date: _____ Presoak: <u>1-30-2020</u>
Actual Percolation Tested by: <u>JPF</u>	Date: <u>1-31-2020</u>

Sandy Soil Criteria Test

Trial No.	Time	Time Interval (Min)	Initial Water Level (Inches)	Final Water Level (Inches)	▲ in Water Level (Inches)
<u>1</u>	<u>8:42</u> <u>9:07</u>	<u>25</u>	<u>6 1/4</u>	<u>1 1/2</u>	<u>4 1/2</u>
<u>2</u>	_____	_____	_____	_____	_____

Use: Normal Sandy (Circle One) Soil Criteria

Time	Time Interval (Min)	Total Elapsed Time (Min)	Initial Water Level (Inches)	Final Water Level (Inches)	▲ in Water Level (Inches)	Percolation Rate (Min/Inch)
<u>11:05</u> <u>11:35</u>	<u>30</u>	<u>30</u>	<u>6"</u>	<u>1 3/4</u>	<u>4 1/4</u>	<u>7.1</u>
<u>11:35</u> <u>12:05</u>	<u>30</u>	<u>60</u>	<u>6"</u>	<u>1 3/4</u>	<u>4 1/4</u>	<u>7.1</u>
<u>12:05</u> <u>12:35</u>	<u>30</u>	<u>90</u>	<u>6"</u>	<u>2"</u>	<u>4"</u>	<u>7.5</u>
<u>12:35</u> <u>1:05</u>	<u>30</u>	<u>120</u>	<u>6"</u>	<u>2"</u>	<u>4"</u>	<u>7.5</u>
<u>1:05</u> <u>1:35</u>	<u>30</u>	<u>150</u>	<u>6"</u>	<u>2"</u>	<u>4"</u>	<u>7.5</u>
<u>1:35</u> <u>2:05</u>	<u>30</u>	<u>180</u>	<u>6"</u>	<u>2"</u>	<u>4"</u>	<u>7.5</u>
<u>2:05</u> <u>2:35</u>	<u>30</u>	<u>240</u>	<u>6"</u>	<u>2"</u>	<u>4"</u>	<u>7.5</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____