Earth Strata Geotechnical Services, Inc. Geotechnical, Environmental and Materials Testing Consultants

Project No. 171857-12A

October 10, 2017

Mr. Greg Koll **KOLL CUSTOM HOMES** P.O. Box 1658 Temecula, CA CA

Subject: Infiltration Testing for Water Quality Treatment Areas, Assessor Parcel Numbers 941-180-032, Located at the Northeast Corner of De Portola Road and Monte de Oro Road, Temecula Area, Riverside County, California

Earth Strata Geotechnical Services is pleased to present this infiltration feasibility report for the proposed residential tract homes, located at the northeast corner of De Portola Road and Monte de Oro Road, Assessor Parcel Numbers 941-180-032, in the Temecula area, Riverside County, California. The purpose of our study was to determine the infiltration rates and physical characteristics of the subsurface earth materials at the approximate depth of the proposed WQMP area within the proposed development. This feasibility report provides the infiltration rates to be used for the design and the development of the water quality management plan, where applicable.

PROPERTY DESCRIPTION

The subject property is located at the northeast corner of De Portola Road and Monte de Oro Road in the Temecula area, Riverside County, California (see Figure 1). The subject property consists of approximately 42.63 acres of undeveloped land. The site has relatively flat terrain in the southern portion of the site and hilly in the northern portion. The property is currently bounded by residential development, as well as vacant property to the south and an orchard to the north. The subject property is underlain by colluvium deposits (Qc) and Pauba Formation (Qpfs).

PROPOSED CONSTRUCTION

Based on plans provided by Ventura Engineering, the proposed development as illustrated on the conceptual grading plans will consist of a winery complete with roads, utilities, driveways, parking, vineyards, and onsite water quality treatment areas.

SUBSURFACE EXPLORATION AND INFILTRATION TESTING

SUBSURFACE EXPLORATION

Subsurface exploration of the subject site consisted of one exploratory boring within each of the proposed basins to depths of 15 feet, conducted on September 18, 2017. Additional borings and test pits associated with the geotechnical investigation were excavated on October 6, October 7, and October 13, 2017. The approximate locations of the exploratory excavations are shown on the attached Infiltration Location Map, Plate 1.

EARTH MATERIALS

The earth materials on the site are primarily comprised of topsoil, colluvium deposits, and sandstone formation deposits. A general description of the dominant earth materials observed on the site is provided below:

- <u>Topsoil</u>: Topsoil / residual soils blanketed most of the proposed basin areas to a depth of approximately 2 feet below existing grade.
- <u>Quaternary Colluvium Deposits (map symbol Qc)</u>: Quaternary Colluvium Deposits; fine to coarse silty sand, with different amounts of silt and clay. The alluvium color varied from light brown to dark brown, slightly moist to moist, loose to medium dense.
- <u>Quaternary Pauba Formation (Qpfs)</u>: The sandstone member of the Pauba Formation was encountered below the loose colluvium deposits. These materials consisted of silty sand with fine to coarse sand.

GROUNDWATER

Groundwater was not observed within the exploratory borings excavated to a depth of 15.5 feet.

INFILTRATION TESTING

The double ring infiltrometer test method was utilized to perform a total of two (2) infiltration tests on October 10, 2017 to evaluate near surface infiltration rates in order to estimate the amount of storm water runoff that can infiltrate into the onsite water quality treatment plan areas. The infiltration tests were performed in general accordance with the requirements of double ring infiltration testing, ASTM D3385 and Appendix A of the Riverside County Flood Control and Water Conservation District.

The infiltration tests were performed using double ring infiltrometer and Mariotte tubes at a depth of 5 feet below existing grades. The locations of the infiltration tests are indicated on the attached Infiltration Location Map, Plate 1. The double ring infiltrometer tests were located by property boundary measurement on the site plan and by using geographic features. Infiltration test data recorded in the field are summarized in the following table and is included within Appendix B including the graph of Infiltration Rate versus Elapsed Time.

INFILTRATION TEST SUMMARY

TEST NUMBER	INFILTRATION HOLE DEPTH (ft.)	INFILTRATION RATE (in/hr)	DESCRIPTION
DR-1	5	4.54	Silty SAND
DR-2	5	1.84	Silty SAND

The infiltration test rates ranged from 1.84 to 4.54 inches per hour (in/hr).

CONCLUSIONS AND RECOMMENDATIONS

Based on the data presented in this report and the recommendations set forth herein, it is the opinion of Earth Strata Geotechnical Services that the water quality treatment areas can be designed for an insitu infiltration rate of 1.8 inches per hour.

GRADING PLAN REVIEW AND CONSTRUCTION SERVICES

This report has been prepared for the exclusive use of **Mr. Greg Koll** and their authorized representative. It likely does not contain sufficient information for other parties or other uses. Earth Strata Geotechnical Services should be engaged to review the final design plans and specifications prior to construction. This is to verify that the recommendations contained in this report have been properly incorporated into the project plans and specifications. Should Earth Strata Geotechnical Services not be accorded the opportunity to review the project plans and specifications, we are not responsibility for misinterpretation of our recommendations.

Earth Strata Geotechnical Services should be retained to provide observations during construction to validate this report. In order to allow for design changes in the event that the subsurface conditions differ from those anticipated prior to construction.

Earth Strata Geotechnical Services should review any changes in the project and modify and approve in writing the conclusions and recommendations of this report. This report and the drawings contained within are intended for design input purposes only and are not intended to act as construction drawings or specifications. In the event that conditions encountered during grading or construction operations appear to be different than those indicated in this report, this office should be notified immediately, as revisions may be required.

REPORT LIMITATIONS

Our services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable soils engineers and geologists, practicing at the time and location this report was prepared. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

Earth materials vary in type, strength, and other geotechnical properties between points of observation and exploration. Groundwater and moisture conditions can also vary due to natural processes or the works of man on this or adjacent properties. As a result, we do not and cannot have complete knowledge of the subsurface conditions beneath the subject property. No practical study can completely eliminate uncertainty with regard to the anticipated geotechnical conditions in connection with a subject property.

The conclusions and recommendations within this report are based upon the findings at the points of observation and are subject to confirmation by Earth Strata Geotechnical Services during construction. This report is considered valid for a period of one year from the time the report was issued.

This report was prepared with the understanding that it is the responsibility of the owner or their representative, to ensure that the conclusions and recommendations contained herein are brought to the attention of the other project consultants and are incorporated into the plans and specifications. The owners' contractor should properly implement the conclusions and recommendations during grading and construction, and notify the owner if they consider any of the recommendations presented herein to be unsafe or unsuitable.

Respectfully submitted,

EARTH STRATA GEOTECHNICAL SERVICES

REGIST

ROFESSION

No. 402

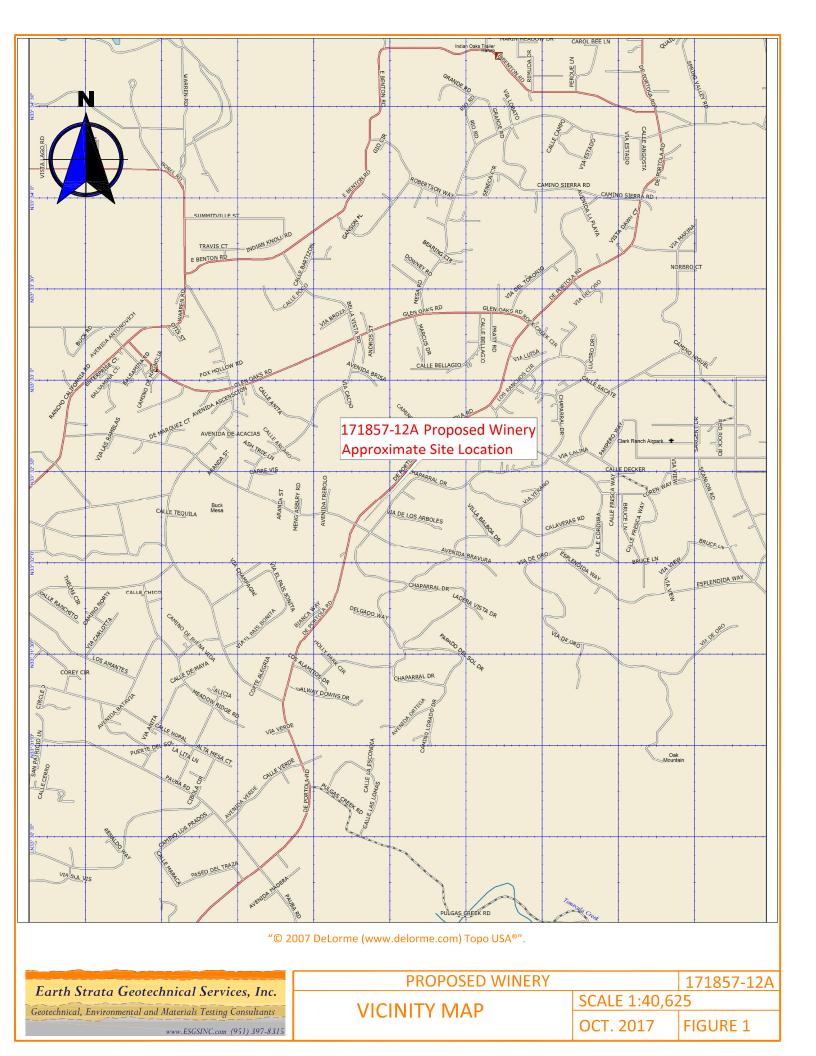


Stephen M. Poole, PE 40219 President Principal Engineer

SMP/jf

Distribution: (1) Addressee

Attachments: Figure 1 – Vicinity Map (*Rear of Text*) Appendix A – Exploratory Logs (*Rear of Text*) Appendix B – Infiltration Test Sheets (*Rear of Text*) Plate 1 – Infiltration Location Map (*Rear of Text*)



APPENDIX A EXPLORATORY LOGS

					Geo	technical Test Pit Log TP-1						
Date: Oc	tober 5,	2017				Project Name: Monte de Oro and De Portola Winery Page: 1 of 1						
Project N						Logged By: JF						
Drilling (Type of Rig: Backhoe						
Drive W		-				Drop (in): 30 Hole Diameter (in): 8						
Top of H	1 1	ation (e Map	1	Hole Location: See Geotechnical Map						
Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION						
0		0-5]				Topsoil						
					SM	Silty SAND; dark brown, dry to slightly moist, medium dense, fine to coarse						
						sand with clay						
						Quaternary Pauba Formation (Qps)						
						Silty SANDSTONE; yellowish brown, slightly moist, dense, fine to coarse sand with						
5 -						trace clay						
						Practical Refusal at 5 feet						
						Total Depth: 5 feet						
						No Groundwater						
10												
10 -												
45												
15 -												
20												
20 -												
25 -												
	1											
30												
	42184	1 Rem	ningto	n Ave	nue, T	Temecula, CA 92590 WWW.ESGSINC.com (951) 397-8315						

					Geo	technical Test Pit Log TP-2
Date: Oc						Project Name: Monte de Oro and De Portola Winery Page: 1 of 1
Project N						Logged By: JF
Drilling (-			Type of Rig: Backhoe
Drive W		-				Drop (in): 30 Hole Diameter (in): 8
Top of H	ole Eleva	ation (e Map		Hole Location: See Geotechnical Map
Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						Topsoil
-					SC	Clayey SAND; dark brown, slightly moist, dense, fine to coarse sand
						Quaternary Pauba Formatin (Qps)
					SC	Clayey SAND; dark brown, slgihtly moist, dense, fien to coarse sand
					50	Practical Refusal at 4 feet
5 -						Total Depth: 4 feet
						No Groundwater
						No Groundwater
10 -						
20 -						
25 -						
	42184	l Rem	ningto	n Ave	nue, T	Temecula, CA 92590 Geotechnical, Environmental and Materials Testing Consultants www.ESGSINC.com (951) 397-8315

					Geo	technical Test Pit Log TP-3	
Date: Oc						Project Name: Monte de Oro and De Portola Winery	Page: 1 of 1
Project N						Logged By: JF	
Drilling (Type of Rig: Backhoe	
Drive W	<u> </u>					Drop (in): 30 Hole Diameter (in): 8	
Top of H	T T	ation		e Map	1	Hole Location: See Geotechnical Map	
t)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	(%)	Classification Symbol		
Depth (ft)	v Cour Foot	ple D	Dens	Moisture (%)	assificat Symbol		
Dep	Blov	Sam	Dry	Moi	Ü	MATERIAL DESCRIPTION	
0						Topsoil	
					SC	Clayey SAND; dark brown, slightly moist, dense, fine to coarse sand	
_						Quaternary Pauba Formatin (Qps)	
-					SC	Clayey SAND; dark brown, sigihtly moist, dense, fine to coarse sand	
						Practical Refusal at 4.5 feet	
5 -						Total Depth: 4.5 feet	
						No Groundwater	
10 -							
10							
15 -							
15							
20 -							
20							
25 -							
25							
[
[
30							
	42184	Ren	ningto	n Ave	nue, T	Temecula, CA 92590 WWW.ESGSINC.	

						Geo	otechnical Boring Log B-1
Date: C	Oct	ober 6,	2017				Project Name: Monte de Oro and De Portola Winery Page: 1 of 1
-				57-10A			Logged By: JF
Drilling			-	-			Type of Rig: B-61
Drive V			-				Drop (in): 30 Hole Diameter (in): 8
Top of	Ho		ation		e Map		Hole Location: See Geotechnical Map
Depth (ft)		Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0							Topsoil
						SC	Clayey SAND; dark brown, slightly moist, medium dense, fine to coarse sand
		27	2.5'	93.1	5.8		Quaternary Pauba Formation (Qps) Silty SANDSTONE; dark yellowish brown, dry, very dense, fine to coarse sand with trace clay
5		57	5'	113.9	10.0		
		59	7.5'	111.3	5.5		
10		78/10.5"	10'	107.4	93		Dark yellowish brown below 10 feet
		<u> </u>					
	Н						Total Depth: 12.5 feet
	Н						No Groundwater
	H						
15	Π						
20	Π						
20	Π						
	Ц						
	Ц						
25	$\left \right $						
	H						
	Н						
	Н						
30	Н						
30							
		42184	4 Ren	ningto	n Ave	nue, T	Temecula, CA 92590 WWW.ESGSINC.com (951) 397-8315

					Geo	otechnical Boring Log B-2							
Date: O	ctober	7, 201	7			Project Name: Monte de Oro and De Portola Winery Page: 1 of 1							
Project	Numb	er: 171	857-10A	l l		Logged By: JF							
Drilling	-	-	-			Type of Rig: B-61							
Drive W	/eight (lbs): 1	.40			Drop (in): 30 Hole Diameter (in): 8							
Top of H	Hole El	evatio		e Map		Hole Location: See Geotechnical Map							
Depth (ft)	Blow Count Per	Samole Denth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION							
0						Topsoil							
	\square				SM	Silty SAND; light brown, loose, dry, fine to coarse sand							
	23	2.5	104.6	3.3		Quaternary Pauba Formation (Qps)							
					SM	Silty SAND; dark orange brown, slightly moist, medium dense, fine to coarse							
						sand							
5 -	18	5'	97.1	4.6									
	25	7.5'	108.8	7.9	SP-SC	Poorly-Graded SAND with Clay; dark orange brown, slightly moist, medium							
						dense, fine to coarse sand							
10 -	34	10'	105.9	8.2		Dense below 10 feet							
15 -													
	51	15'	116.9	7.4		Very dense below 15 feet							
20 -													
20	61	20'	113.2	8.2									
						Total Depth: 21.5 feet							
	Π					No Groundwater							
	Π												
25 -	Π												
	H												
	H												
	H												
30	H—		1										
	421	84 Re	mingto	on Ave	nue, T	Temecula, CA 92590 <i>Earth Strata Geotechnical Services, Inc.</i> <i>Geotechnical, Environmental and Materials Testing Consultants</i> <i>www.ESGSINC.com</i> (951) 397-8315							

						Geo	otechnical Boring Log B-3
Date: C							Project Name: Monte de Oro and De Portola Winery Page: 1 of 1
Project							Logged By: JF
Drilling		-	-	-			Type of Rig: B-61
Drive V			-				Drop (in): 30 Hole Diameter (in): 8
Top of			ation		e Map		Hole Location: See Geotechnical Map
Depth (ft)		Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0							Topsoil
		$\overline{}$				SM	Silty SAND; light brown, dry, loose, fine to coarse sand
		36	2.5'	106.3	3.2		Quaternary Pauba Formation (Qps)
						SM	Silty SAND; light brown, dry, dense, fine to coarse sand with trace clay
5		62	5'	109.4	3.4		Very dense below 5 feet
		38	7.5'	106.8	4.7		Dark orange brown, slightly moist, dense below 7.5 feet
10 ·		35	10'	99.9	5.4		
	H						
	H						
	Η						
15 ·		69	15'	105.7	6.5		Very dense below 15 feet
		/					
							Total Depth: 16.5 feet No Groundwater
20 ·							
25 ·							
	H						
30	H						
	<u> </u>					1	
		42184	4 Ren	ningto	n Ave	nue, T	Temecula, CA 92590 WWW.ESGSINC.com (951) 397-8315

						Geo	otechnical Boring Log B-4
Date: C							Project Name: Monte de Oro and De Portola Winery Page: 1 of 1
Project							Logged By: JF
Drilling				-			Type of Rig: B-61
Drive V			-				Drop (in): 30 Hole Diameter (in): 8
Top of	TT		ation	(ft): See	e Map		Hole Location: See Geotechnical Map
Depth (ft)		Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0							<u>Topsoil</u>
	Ш					SM	Silty SAND; light brown, dry, loose, fine to coarse sand with trace clay
		23	2.5'	100.8	2.5		Quaternary Pauba Formation (Qps)
							Silty SAND; light brown, dry, medium dense, fine to coarse sand with trace clay
▎╴	Π						
5		41	5'	114.3	4.7		Silty SANDSTONE; medium brown, dry, dense, fine to coarse sand with clay
		40	7.5'	107.0	4.5		
10		52	10'	103.4	7.2		
	H	97/11"	12.5'	107.0	4.1		Deerly Creded CAND with Site readium brown dry years dance fire with econom
		57/11	12.5	107.0	4.1	3P-3IVI	Poorly-Graded SAND with Silt; medium brown, dry, very dense, fine with coarse sand with trace gravel
							Total Depth: 14 feet
15	╂						No Groundwater
	H						No Groundwater
	H						
	Н						
	Н						
20	╂┨						
	Н						
	Н						
	Н						
	Н						
25	Ц						
	Ц						
	Ц						
	Ц						
	Ц						
30							
		42184	1 Ren	ningto	n Ave	nue, T	Temecula, CA 92590 WWW.ESGSINC.com (951) 397-8315

						Geo	otechnical Boring Log B-5
Date: C							Project Name: Monte de Oro and De Portola Winery Page: 1 of 1
Project							Logged By: JF
Drilling			-				Type of Rig: B-61
Drive V		<u> </u>					Drop (in): 30 Hole Diameter (in): 8
Top of	но		ation		e Map		Hole Location: See Geotechnical Map
Depth (ft)		Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0							Topsoil
						SM	Silty SAND; light brown, dry, loose, fine to coarse sand with trace clay
		34	2.5'	105.1	2.5		Quaternary Pauba Formation (Qps)
							Silty SAND; light brown, dry, dense, fine to coarse sand with trace clay
_							
5		33	5'	108.8	3.6		
		13	7.5'	102.4	4.6		Medium dense below 7 feet
10							
10		23	10'	93.5	2.1		
		27	12.5'	99.8	4.1	SP-SM	Poorly-Graded SAND with Silt; medium brown, dry, very dense, fine with coarse
							sand with trace gravel
45							Total Depth: 14 feet
15		,					No Groundwater
20	Π						
20							
	Π						
	Π						
	Π						
25	Π						
25	Π						
	Π						
	Π						
	П						
30	Π						
		42184	4 Ren	ningto	n Ave	nue, T	Temecula, CA 92590 Earth Strata Geotechnical Services, Inc. Geotechnical, Environmental and Materials Testing Consultants www.ESGSINC.com (951) 397-8315

					Geot	echnical Boring Log MW-1
Date: Se	ptember	[.] 18, 2	017			Project Name: De Portola Winery Page: 1 of 1
Project I				1		Logged By: TJ
Drilling			ing It			Type of Rig: Simco 2800
Drive W						Drop (in): - Hole Diameter (in): 8
Top of H		ation (e Map		Hole Location: See Geotechnical Map
Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						Topsoil:
						Silty SAND; light brown, loose, dry, fine to medium sand
						Quaternary Colluvium Deposits (Qc):
					SM	Silty SAND; strong brown, slightly moist, medium dense, fine to medium sand
-					5101	Sitty SAND, strong brown, signify moist, medium dense, me to medium sand
5 -						Quaternary Pauba Formation (Qpfs): Silty SANDSTONE; brown, medium dense, slightly moist, fine to coarse sand
-						Sitty SANDSTONE, Brown, medium dense, slightly moist, me to coarse sand
╞						
-	_					
10 -	-					
15 -						
						Total Depth: 15.5 feet
						No Groundwater
20 -						
╞	_					
∥ ⊦						
25 -						
-						
30						
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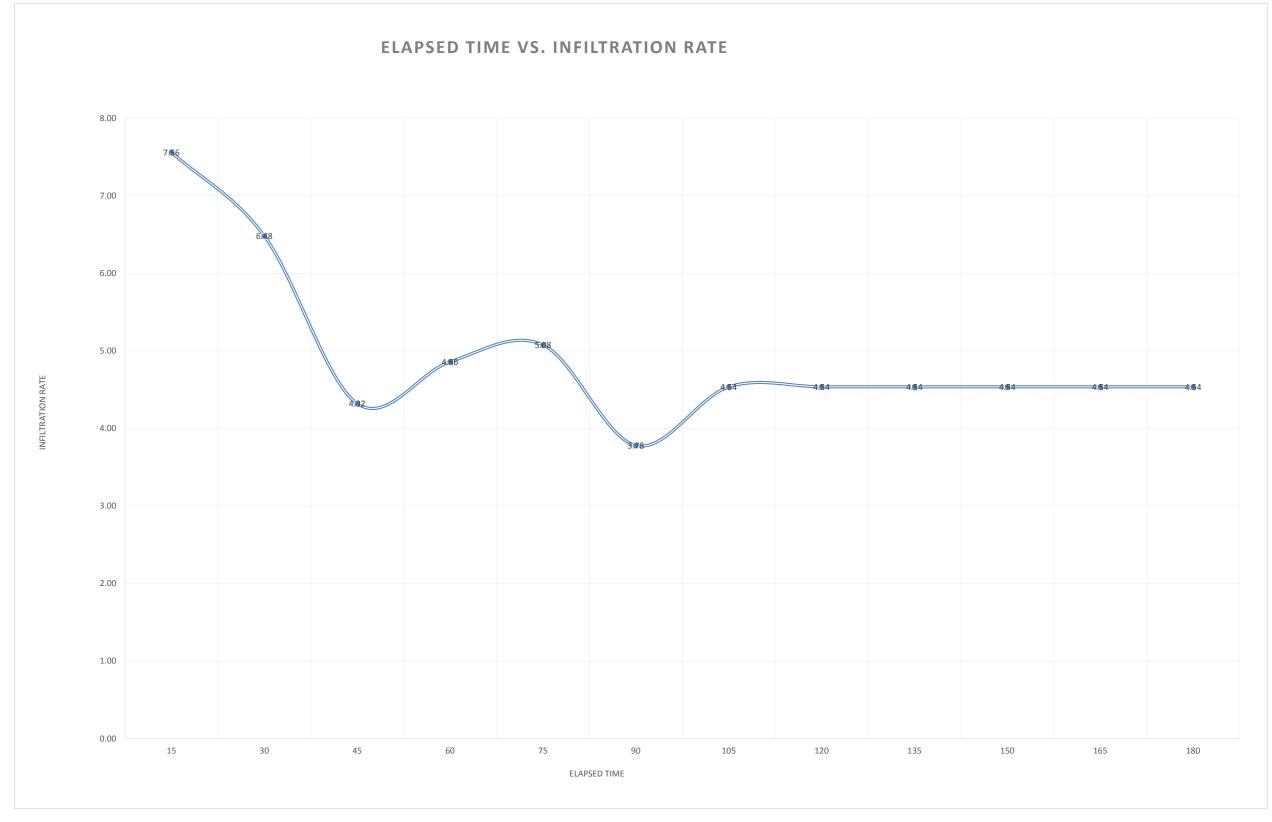
APPENDIX B

INFILTRATION TEST SHEETS

Test No.	DR-1	Location		See Map			Tur	<mark>f-Tec In</mark>	ternatio	onal - I	Record	Chart f	or IN10	<mark>-W - (1</mark> :	<mark>2 & 24 In</mark>	<mark>ch Inf</mark> i	Itration Rings)
	entification:		A				Constants		Area cm2	(cm)	Container Number		Marriotte T	ube Volum			Strata Geotechnical Services, Inc. I, Environmental and Materials Testing Consultants
Test Loca		DR-1					Inner Ring		729						3000		
Liquid Us Tested By		TAP WATE JM	рн:	8.0 Date			Annular Ri		2189 I maintaineo			Float Valve	() Mario	tte Tubes	10000		www.ESGSINC.com (951) 397-8315
	water table:	> 30 Feet		Depth of Tes	st	5 feet			Depth of O				Other				
			1	· ·		•		•			1		•				
								eadings	Annular	$\frac{1}{2}$	In	filtration Rate	es		Ground Tem	perature	Remarks
Trial #	Start / End	Date MM/DD/YY	Time HR:MIN	Time Increment /(Total)	Elapsed Time (Min)	Inner Ring Reading cm	Inner Maroitte Tube Flow (ml)	Annular Space Reading cm	Space Marriotte	Liquid Temp ⁰F	Inner Infiltration Rate cm/h	Inner Infiltration Rate In/h	Annular Infiltration Rate cm/h	Annular Infiltration Rate in/h	Ground Temp Depth (cm)		Weather conditions Etc
	Start Test	10/7/2017	9:55		15												
	End Test Start Test	10/7/2017 10/7/2017	10:10 10:10	0:15	13	6.00	3500	6.00	10500		19.20	7.56	19.19	7.55			
	End Test	10/7/2017	10:10	0:15	30	6.00	3000	6.00	9000		16.46	6.48	16.45	6.47			
	Start Test	10/7/2017	10:25	0:15	45												
	End Test Start Test	10/7/2017 10/7/2017	<u>10:40</u> 10:40	0 0:45 0:15		6.00	2000	6.00	6000		10.97	4.32	10.96	4.32			
4	End Test	10/7/2017	10:55	1:00	60	6.00	2250	6.00	6500		12.35	4.86	11.88	4.68			
	Start Test End Test	10/7/2017 10/7/2017	10:55 11:10	0:15 0 1:15	75	6.00	2350	6.00	7000		12.89	5.08	12.79	5.04			
	Start Test	10/7/2017	11:10		00	0.00	2330	0.00	7000		12.09	5.00	12.19	5.04			
	End Test	10/7/2017	11:25	1:30	90	6.00	1750	6.00	5000		9.60	3.78	9.14	3.60			
	Start Test End Test	10/7/2017 10/7/2017	11:25 11:40	0:15 0 1:45	105	6.00	2100	6.00	7000		11.52	4.54	12.79	5.04			
	Start Test	10/7/2017	11:40	0:15	120												
	End Test Start Test	10/7/2017 10/7/2017	<u>11:55</u> 11:55	2:00 0:15		6.00	2100	6.00	7000		11.52	4.54	12.79	5.04			
	End Test	10/7/2017	12:10	2:15	135	6.00	2100	6.00	6500		11.52	4.54	11.88	4.68			
	Start Test	10/7/2017	12:10		150	00.0	2100	6.00	6500		11.50	4.54	11.00	4.68			
	End Test Start Test	10/7/2017 10/7/2017	12:25 12:25	2:30 0:15	405	6.00	2100	0.00	6500		11.52	4.34	11.88	4.00			
	End Test	10/7/2017	12:40	2:45	165	6.00	2100	6.00	6500		11.52	4.54	11.88	4.68			
12	Start Test End Test	10/7/2017	12:40 12:55	0 0:15	180	6.00	2100	6.00	6500		11.52	4.54	11.88	4.68			
											-						
											-						
									-		-						
																	<u>т</u> т 🛯
																	turf-tec nternational
											-						

Project Identification:	171857-12	A	
Test Location:	DR-1		
Liquid Used:	TAP WATE	pH:	8.0
Tested By:	JM		
Depth to water table:	> 30 Feet		

Earth Strata Geotechnical Services, Inc. Geotechnical, Environmental and Materials Testing Consultants

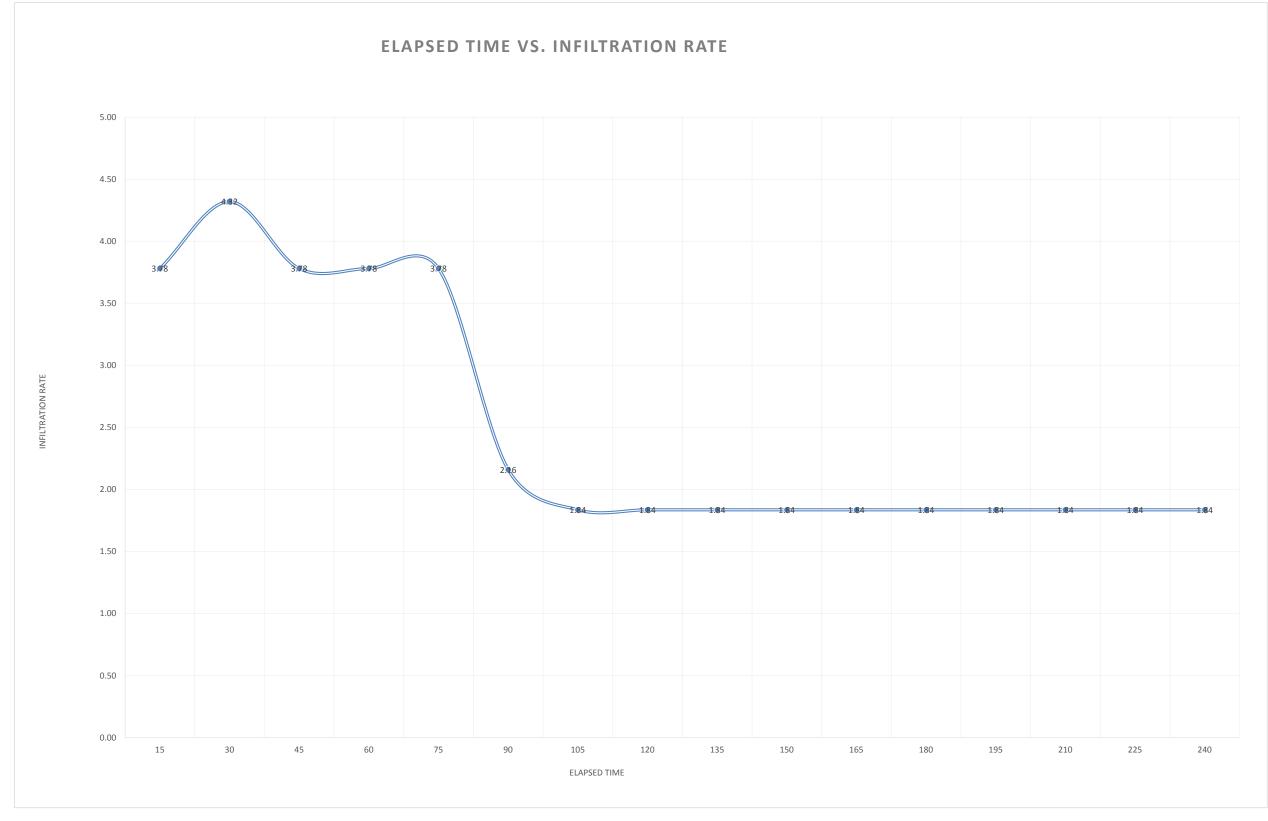


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Test No.	DR-2	Location		See Map	1		Tur	<mark>f-Tec In</mark>	ternatio	onal - I	Record	Chart f	or IN10	-W - (1	<mark>2 & 24 In</mark>	ch Infi	Itration Rings)
Project Id	entification:	171857-12	A				Constants		Area cm2	Depth of Liquid (cm)	Liquid Container Number		Marriotte 1	ube Volum	le		Strata Geotechnical Services, Inc.
Test Loca	tion:	DR-2					Inner Ring		729						3000	Geotechnica	ii, Environmentai and Materiais Testing Consultants
Liquid Us		TAP WATE	•	8.0)		Annular Ri		2189						10000		www.ESGSINC.com (951) 397-8315
Tested By		JM		Date	Ļ			Liquid leve				oat Valve () Mariotte T	ubes			
Depth to v	water table:	> 30 Feet		Depth of Te	st	5 feet		Penetration	Depth of O	uter Ring		9 cm	Other				
							Flow R	eadings			In	iltration Rat	es		Ground Tem	perature	Remarks
Trial #	Start / End	Date MM/DD/YY	Time HR:MIN	Time Increment /(Total)	Elapsed Time (Min)	Inner Ring Reading cm	Inner Maroitte Tube Flow (ml)	Annular Space Reading cm	Annular Space Marriotte Tube Flow (ml)	Liquid Temp ºF	Inner Infiltration Rate cm/h	Inner Infiltration Rate In/h	Annular Infiltration Rate cm/h	Annular Infiltration Rate in/h	Ground Temp Depth (cm)		Weather conditions Etc
	Start Test	10/9/2017	8:15	0:15	15	5.00		5.00									
	End Test	10/9/2017	8:30	0:15	15	5.00	1750		5500		9.60	3.78	10.05	3.96			
l –	Start Test End Test	10/9/2017 10/9/2017	8:30 <u>8:45</u>	0:15		5.00 6.00	2000	5.00 5.00	6000		10.97	4.32	10.96	4.32			
	Start Test	10/9/2017	8:45	0:30		5.00	2000	5.00			10.97	7.52	10.90	7.52			
	End Test	10/9/2017	9:00	0:45	45	5.00	1750		6000		9.60	3.78	10.96	4.32			
	Start Test End Test	10/9/2017 10/9/2017	9:00 9:15	0:15		5.00 5.00	1750	5.00 5.00	5500		9.60	3.78	10.05	3.96			
	Start Test	10/9/2017	9:15	0:15	75	5.00		5.00									
	End Test Start Test	10/9/2017 10/9/2017	9:30 9:30	1:15 0:15	5	5.00 5.00	1750	5.00 5.00			9.60	3.78	10.05	3.96			
-	End Test	10/9/2017	9:30 9:45	1:30		5.00	1000				5.49	2.16	5.48	2.16			
-	Start Test	10/9/2017	9:45	0:15		5.00 5.00	050	5.00	0500		4.00	1 0 4	4 57	1.80			
	End Test Start Test	10/9/2017 10/9/2017	10:00 10:00	1:45 0:15		5.00	850	5.00 5.00	2500		4.66	1.84	4.57	1.00			
8	End Test	10/9/2017	10:15	2:00	120	5.00	850	5.00	2500		4.66	1.84	4.57	1.80			
-	Start Test End Test	10/9/2017 10/9/2017	10:15 10:30	0:15		5.00 5.00	850	5.00 5.00	2500		4.66	1.84	4.57	1.80			
	Start Test	10/9/2017	10:30	0:15		5.00		5.00	2000		4.00						
	End Test	10/9/2017	10:45	2:30)	5.00	850		2500		4.66	1.84	4.57	1.80			
-	Start Test End Test	10/9/2017 10/9/2017	10:45 11:00	0:15		5.00 5.00	850	5.00 5.00	2500		4.66	1.84	4.57	1.80			
l –	Start Test	10/9/2017	11:00	0:15		5.00	0.50	5.00	0.500		4.00	4.04		4.00			
-	End Test Start Test	10/9/2017 10/9/2017	11:15 11:15	3:00 0:15		5.00 5.00	850	5.00 5.00	2500		4.66	1.84	4.57	1.80			
13	End Test	10/9/2017	11:30	3:15	195	5.00	850	5.00	2500		4.66	1.84	4.57	1.80			
	Start Test End Test	10/9/2017 10/9/2017	11:30 11:45	0:15		5.00 5.00		5.00 5.00			4.66	1.84	4.57	1.80			
	Start Test	10/9/2017	11:45			5.00	830	5.00			4.00						
	End Test	10/9/2017	12:00	3:45	225	5.00		5.00	2500		4.66	1.84	4.57	1.80			
	Start Test End Test	10/9/2017 10/9/2017	12:00 12:15	0:15		5.00 5.00		5.00			4.66	1.84	4.57	1.80			
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																	T. T.
																	turf-tec nternational

Project Identification:	171857-12A							
Test Location:	DR-2							
Liquid Used:	TAP WATE	pH:	8.0					
Tested By:	JM							
Depth to water table:	> 30 Feet							

Earth Strata Geotechnical Services, Inc. Geotechnical, Environmental and Materials Testing Consultants



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