APPENDIX 9a

Earth Strata Geotechnical Services, Inc.

Geotechnical, Environmental and Materials Testing Consultants

October 25, 2021

Project No. 213955-12A

Mr. Viraj Patel **c/o Alex Hann** 511 North Main Street Lake Elsinore, CA 92530

Subject:

Infiltration Testing for Water Quality Treatment Areas, Proposed Commercial Development, Assessor Parcel Numbers 1201-311-02, 1201-311-03, 1201-311-04, 1201-311-05, 1201-301-14, 1201-301-15, and 1201-301-19, Located at the Southeast Corner of Palm Avenue and Meines Street, City of Highland, San Bernardino County, California

INTRODUCTION

Earth Strata Geotechnical Services is pleased to present this infiltration feasibility report for the proposed commercial development, located on at the southeast corner of Palm Avenue and Meines Street, Assessor Parcel Numbers 1201-311-02 through 05, 1201-301-14, 1201-301-15, and 1201-301-19, in the City of Highland, San Bernardino 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 southeast corner of Palm Avenue and Meines Street in the City of Highland, San Bernardino County, California. The approximate location of the site is shown on the Vicinity Map, Figure 1.

The subject property is comprised of approximately 1.87 acres of previously developed land. The site has not been graded. Topographic relief at the subject property is relatively low with the terrain being generally flat. Elevations at the site range from approximately 1,190 to 1,193 feet above mean sea level (msl), for a difference of about 3± feet across the entire site. Drainage within the subject property generally flows to the southwest.

The site is currently bordered by commercial development to the north and east, as well as Palm Avenue to the west, and West 5th Street to the south. Most of the vegetation on the site consists of light amounts of annual weeds/grasses.

PROPOSED CONSTRUCTION

Based on the conceptual site plan provided by Empire Design Group, the proposed development as illustrated on the conceptual grading plans will consist of a commercial development complete with interior streets, utilities, parking and an onsite water quality treatment basin.

SUBSURFACE EXPLORATION

Subsurface Exploration

Subsurface exploration within the subject site was performed on October 13, 2021, for the exploratory excavations. A truck mounted hollow-stem-auger drill rig was utilized to drill six (6) borings throughout the site to a maximum depth of 10 feet. The exploratory holes were excavated for geotechnical evaluation purposes with respect to the proposed developments and to interpret whether groundwater or impermeable soil layers were present. An underground utilities clearance was obtained from Underground Service Alert of Southern California, prior to the subsurface exploration. The approximate locations of the exploratory excavations are shown on the attached Infiltration Location Map, Plate 1 and descriptive logs are presented in Appendix A.

Earth materials encountered during exploration were classified and logged in general accordance with the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) of ASTM D 2488. Upon completion of laboratory testing, exploratory logs and sample descriptions may have been reconciled to reflect laboratory test results with regard to ASTM D 2487.

Earth Materials

A general description of the earth materials observed on site is provided below.

Quaternary Gravel (Qg): Quaternary Gravel was encountered directly from the surface to a maximum depth of 15 feet. This bedrock unit consists predominately of interbedded gray to medium brown, fine to medium grained silty sand, fine to coarse grained sandstone, with occasional siltstone and claystone layers.

INFILTRATION TESTING

The double ring infiltrometer test method was utilized to perform a total of two (2) infiltration tests on October 22, 20216 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 the guidelines of the San Bernardino County Local Agency Management Program (LAMP).

The infiltration tests were performed using double ring infiltrometer and Mariotte tubes at a depth of 3 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	6.48	Poorly Graded SAND
DR-2	5	_*	Poorly Graded SAND

^{*} Reliable testing data was unable to be obtained as water infiltrated at too fast a rate to measure

The infiltration test rate was 6.48 inches per hour (in/hr).

CONCLUSIONS AND RECOMMENDATIONS

General

From geotechnical and engineering geologic points of view, the proposed WQMP areas, where tested, is considered suitable for infiltration for the proposed development, provided the following conclusions and recommendations are incorporated into the plans and are implemented during construction.

Groundwater

Groundwater was not observed during our subsurface exploration to a total depth of 10 feet. Potential groundwater impact is considered very low. Local well data indicates regional groundwater highs approximately 50 feet below existing surface, which meets the minimum separation of >10 feet from the bottom of infiltration facility to the groundwater mark.

Geologic/Geotechnical Screening

The proposed WQMP areas (see Plate 1) are located at a lower elevation than the proposed structures in competent native earth materials.

The proposed structures will be supported by compacted fill and competent earth materials, with groundwater at a depth of approximately 50 feet. According to the County of San Bernardino reports, the subject site is located in an area where liquefaction potential is considered low. As such, the potential for earthquake induced liquefaction and lateral spreading beneath the proposed structures is considered low due to the recommended compacted fill, relatively low groundwater level, and the dense nature of the deeper onsite earth materials.

Preliminary laboratory test results indicate onsite earth materials exhibit an expansion potential of **VERY LOW** as classified in accordance with 2019 CBC Section 1803.5.3 and ASTM D4829.

Therefore, infiltration within the proposed WQMP areas will not encroach on any proposed structures and will not increase the risk of geologic hazards.

Recommended Factor of Safety

The recommended factor of safety for the infiltration design is 3.

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 WQMP area can be designed for an infiltration rate of 2.16 inches per hour in the vicinity of DR-1 and DR-2.

GRADING PLAN REVIEW AND CONSTRUCTION SERVICES

This report has been prepared for the exclusive use of **Mr. Viraj Patel** and their authorized representative. It likely does not contain sufficient information for other parties or other uses. Earth Strata 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 not be accorded the opportunity to review the project plans and specifications, we are not responsibility for misinterpretation of our recommendations.

Earth Strata 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 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 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

Stephen M. Poole, PE 40219 President Principal Engineer

SMP/jmr

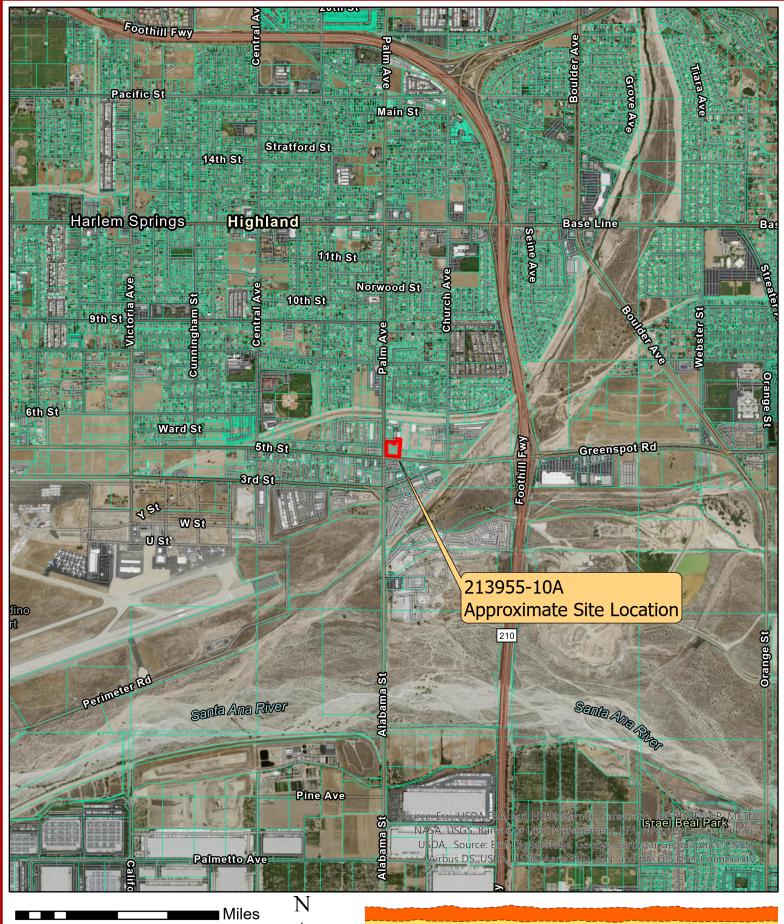
Distribution: (1) Addressee

Attachments: Figure 1 – Vicinity Map (*Rear of Text*)

Appendix A – Exploratory Logs (Rear of Text)
Appendix B – Infiltration Test Sheets (Rear of Text)
Appendix C – Historic Groundwater Data (Rear of Text)

Plate 1 – Infiltration Location Map (*Rear of Text*)

FIGURE 1VICINITY MAP



0 0.1 0.2 0.4 0.6 0.8



Earth Strata Geotechnical Services, Inc.

Geotechnical, Environmental and Materials Testing Consultants

www.ESGSINC.com (951) 397-8315

APPENDIX AEXPLORATORY LOGS

						Geo	otechnical Boring Log B-1
Date: O	ct	ober 13	3, 202	1			Project Name: Palm Avenue, Highland Page: 1 of 1
Project							Logged By: JMR
Drilling							Type of Rig: B-61
Drive W							Drop (in): 30 Hole Diameter (in): 8
Top of Hole Elevation (ft): See Map							Hole Location: See Geotechnical Map
		1					·
		Blow Count Per Foot	Sample Depth	Dry Density (pcf)	(%	Classification Symbol	
(ft)		, Cour Foot	De	ısit	re (assificati Symbol	
oth		N N	əldı	Dei	stu	assi Syn	
Depth (ft)		Blo	Sam	Dry	Moisture (%)	Ü	
0	H						MATERIAL DESCRIPTION Topsoil
U	H	<u> </u>				CNA	
	H	19	2.5'	106.1	1.3	SM	Silty SAND; light brown, dry, loose, fine to coarse sand
		19	2.5	106.1		CD	Quaternary Alluvial Sand and Clay of Valley Areas (Qa)
_						SP-SIV	Poorly-Graded SAND with Silt; light to dark brown, dry, medium dense, medium to co
5 -		48	5'	97.7	2.1		Dense 5 to 7 feet
		50/4"	7.5'	121.6	1.4		Becomes very dense, gravel and cobbles below 7 feet
40	П						
10 -		50/6"	10'	-	4.5		Practical Refusal at 10.5 feet
							Total Depth: 10.5 feet
							No Groundwater
15							
15 -							
20							
20 -							
25							
25 -							
	П						
30							

						Geo	otechnical Boring Log B-2
Date: O	ct	ober 13	3, 202	1			Project Name: Palm Avenue, Highland Page: 1 of 1
Project							Logged By: JMR
Drilling							Type of Rig: B-61
Drive W			-				Drop (in): 30 Hole Diameter (in): 8
Top of I					е Мар		Hole Location: See Geotechnical Map
							·
		Blow Count Per Foot	Sample Depth	Dry Density (pcf)	<u>%</u>	Classification Symbol	
(ft)		Cour Foot	De	ısit	رو (و	assificati Symbol	
ţ		^ C F	ple	Der	stui	ssi Syn	
Depth (ft)		310	am	٦ry	Moisture (%)	Ü	
	H		0)		_		MATERIAL DESCRIPTION
0	H	/					Topsoil
	Ц					SM	Silty SAND; light brown, dry, loose, fine to coarse sand
		30	2.5'	110.0	1.5		Quaternary Alluvial Sand and Clay of Valley Areas (Qa)
						SM	Silty SAND; dark brown, dry, medium dense, medium to coarse sand
5 -						SP	Poorly-Graded SAND; light to dark brown, dry, very dense, coarse sand with gravel
		68/11"	5'	101.4	2.3		
			5-10'				
		50/4"	7.5'	-	1.3		
10 -							Practical Refusal at 10 feet
10							Total Depth: 10 feet
							No Groundwater
4.5							
15 -	П						
	П						
	П						
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						Geo	otechnical Boring Log B-3
Date: O	ct	ober 13	3, 202	1			Project Name: Palm Avenue, Highland Page: 1 of 1
Project							Logged By: JMR
Drilling							Type of Rig: B-61
Drive W		•	•				Drop (in): 30 Hole Diameter (in): 8
Top of I					е Мар		Hole Location: See Geotechnical Map
							·
		Blow Count Per Foot	Sample Depth	Dry Density (pcf)	(%)	Classification Symbol	
Depth (ft)		Cour	De	nsit	Moisture (%)	assificati Symbol	
oth		N F	ıρle	De	istu	assi	
Del		Blo	San	Dry	Mo	D	MATERIAL DESCRIPTION
0	Ħ	_					Topsoil
	Ħ	_				SM	Silty SAND; light brown, dry, loose, fine to coarse sand
		28	2.5'	-	1.1		Quaternary Alluvial Sand and Clay of Valley Areas (Qa)
						SM	Silty SAND; light to dark brown, dry, medium dense, medium to coarse sand
_							Poorly-Graded SAND with Silt; light brown, dry, very dense, coarse sand with gravel an
5 -		65/8"	5'	-	1.3		
							Total Depth: 7 feet
							No Groundwater
40							
10 -	П						
	П						
15							
15 -							
20 -							
20 -							
25 -							
25 -							
30							

						Geo	otechnical Boring Log B-4
Date: O	ct	ober 13	3, 202	1			Project Name: Palm Avenue, Highland Page: 1 of 1
Project							Logged By: JMR
Drilling							Type of Rig: B-61
Drive W	Vei	ight (lb	s): 14	0			Drop (in): 30 Hole Diameter (in): 8
Top of	Но	le Elev	ation	(ft): Se	е Мар		Hole Location: See Geotechnical Map
		er		cf)		_	·
		Blow Count Per Foot	Sample Depth	Dry Density (pcf)	(%	Classification Symbol	
(£		· Cour Foot	De	ısit	re (fica	
oth		w C Fc	əldı	Dei	Moisture (%)	assificati Symbol	
Depth (ft)		Blo	Sam	Dry	Moi	Ö	
	H		0,				MATERIAL DESCRIPTION
0	Н					_	<u>Topsoil</u>
	H					SM	Silty SAND; light brown, dry, loose, fine to coarse sand
		10	2.5'	-	1.2		Quaternary Alluvial Sand and Clay of Valley Areas (Qa)
							Silty SAND; dark brown, dry, loose, medium to coarse sand
5 -						SP-SM	Poorly-Graded SAND with Silt; light brown, dry, very dense, coarse sand with gravel an
		58/11"	5'	-	-		No Recovery at 5 feet
		50/4"	7.5'	-	1.5		Practical Refusal at 8 feet
	Ш						Total Depth: 8 feet
10 -							No Groundwater
10							
4-	П						
15 -	Ħ						
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20 -	Ħ						
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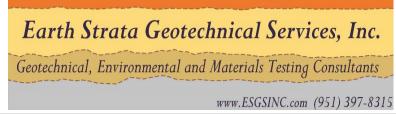
						Geo	otechnical Boring Log B-5
Date: O	ct	ober 13	3, 202	1			Project Name: Palm Avenue, Highland Page: 1 of 1
Project							Logged By: JMR
Drilling							Type of Rig: B-61
Drive W			-				Drop (in): 30 Hole Diameter (in): 8
Top of			-		е Мар		Hole Location: See Geotechnical Map
	П						·
_		Blow Count Per Foot	Sample Depth	Dry Density (pcf)	(%	Classification Symbol	
(ft.)		· Cour Foot	De	nsit	re (assificati Symbol	
th		w C	əldı	Dei	stu	assi Syn	
Depth (ft)		Blo	Sarr	Ory	Moisture (%)	ΰ	
	H		0,		_		MATERIAL DESCRIPTION
0	Н					_	<u>Topsoil</u>
	Н					SM	Silty SAND; light brown, dry, loose, fine to coarse sand
		14	2.5'	-	1.5		Quaternary Alluvial Sand and Clay of Valley Areas (Qa)
							Silty SAND; dark brown, dry, loose, medium to coarse sand
5 -	13332					SP-SM	Poorly-Graded SAND with Silt; light brown, dry, dense, coarse sand with gravel and co
		34	5'	108.4	1.5		
							Becomes very dense at 7 feet
		50/4"	7.5'	-	0.9		Practical Refusal at 8 feet
	Ш						Total Depth: 8 feet
10 -							No Groundwater
10							
45							
15 -							
	П						
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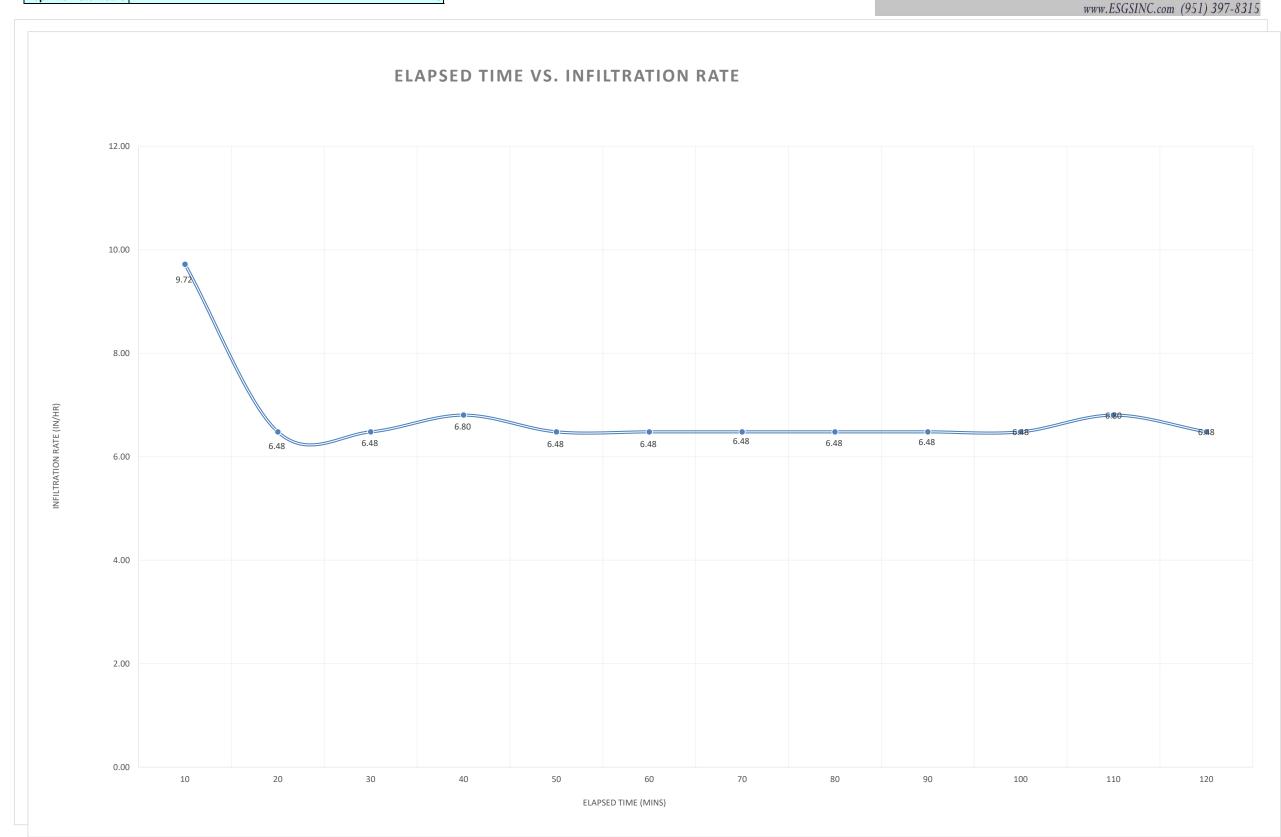
					Geo	otechnical Boring Log B-6							
Date: O	ctober 1	3, 202	1			Project Name: Palm Avenue, Highland	Page: 1 of 1						
Project						Logged By: JMR							
Drilling						Type of Rig: B-61							
Drive W	eight (lb	s): 14	0			Drop (in): 30 Hole Diameter (in): 8							
Top of H	lole Elev	ation	(ft): See	е Мар		Hole Location: See Geotechnical Map							
	e		cf)		_	·							
	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	(%	Classification Symbol								
(L	Cour	De	ısit	re (fica								
Depth (ft)	N F	əldı	Dei	Moisture (%)	assificati Symbol								
Dek	Blo	Sarr	Dry	Moi	Ö								
						MATERIAL DESCRIPTION							
0		0-5'			_	<u>Topsoil</u>							
					SM	Silty SAND; light brown, dry, loose, fine to coarse sand							
	50/6"	2.5'	-	-		Quaternary Alluvial Sand and Clay of Valley Areas (Qa)							
					SM	Silty SAND; reddish brown, dry, very dense, medium to coarse sand							
5 -	/					No Recovery at 2.5 feet							
)	50/4"	5'	108.6	0.9		Practical Refusal at 5.5 feet							
						Total Depth: 5.5 feet							
						No Groundwater							
10													
•													
15 -													
20													
25 -													
23													
30													

APPENDIX B INFILTRATION TEST SHEETS

Test No.	DR-1	Location	S	See Map)		Turf	-Tec Int	t <mark>ernatio</mark>	nal - F	Record	Chart f	or IN10)-W - (1	<mark>2 & 24 In</mark>	<mark>ch Inf</mark> i	Itration Rings)
Project Id	lentification:	Palm and I	Meines - H	ighland			Constants		Area cm2		Liquid Container Number		Marriotte T	ube Volum		Gastachnica	Strata Geotechnical Services, Inc. l, Environmental and Materials Testing Consultants
Test Loca		DR-1					Inner Ring		729		1				3000		i, bivironmeneur and materials resulting Consultations
Liquid Us		TAP WATI		8.0			Annular Rii		2189		2				10000		www.ESGSINC.com (951) 397-8315
Tested By		JMR		Date	10/2	22/2021		Liquid leve					e () Mari	otte Tubes			
Depth to	water table:			Depth of	Test	3		Penetration	Depth of C	Outer Ring		9 cm	Other				
		1	1	1	T					1	1			1			
Trial #	Start / End	Date MM/DD/YY	Time HR:MIN	Time Increment /(Total)	Elapsed Time (Min)	Inner Ring Reading cm	Inner Maroitte	eadings Annular Space Reading cm	Annular Space Marriotte Tube Flow (ml)	Liquid Temp ºF	Inner Infiltration Rate cm/h		Annular	Annular Infiltration Rate In/h	Ground Tem Ground Temp Depth (cm)	Temp at Depth (c)	Remarks Weather conditions Etc
	Start Test	10/22/2021	9:55	0:10													
1	End Test	10/22/2021	10:05	0:10 0:10		5.00	3000	6.00	16,500		24.69	9.72	45.23	17.81			
	Start Test	10/22/2021	10:05	0:10		3.00	3000	0.00	10,000		24.03	5.12	-70.20	.7.01			
2	End Test	10/22/2021	10:15	0:20	20	6.00	2,000	6.00	18,700		16.46	6.48	51.26	20.18			
	Start Test	10/22/2021	10:15	0:10	30												
3	End Test	10/22/2021	10:25	0:30	30	6.00	2000	6.00	18,200		16.46	6.48	49.89	19.64			
	Start Test	10/22/2021	10:25	0:10	40				05.16			0.00	46	44.44			
4	End Test Start Test	10/22/2021	10:35	0:40		6.00	2,100	6.00	38,100		17.28	6.80	104.43	41.11			
	Start Test End Test	10/22/2021	10:35 10:45	0:10 0:50	50	6.00	2,000	6.00	20,800		16.46	6.48	57.01	22.45			
	Start Test	10/22/2021	10:45	0:30		0.00	2,000	0.00	20,000	/	10.40	0.40	37.01	22.40			
6	End Test	10/22/2021	10:55	1:00	60	6.00	2,000	6.00	19,600)	16.46	6.48	53.72	21.15			
	Start Test	10/22/2021	10:55	0:10	70		,		,								
7	End Test	10/22/2021	11:05	1:10		6.00	2,000	6.00	19,600)	16.46	6.48	53.72	21.15			
1	Start Test	10/22/2021	11:05	0:10	80									24.45			
8	End Test	10/22/2021	11:15	1:20		6.00	2,000	6.00	19,600)	16.46	6.48	53.72	21.15			
	Start Test	10/22/2021	11:15	0:10	90	6.00	2,000	6.00	40.000		16.46	6.48	F0 70	21.15			
9	End Test Start Test	10/22/2021 10/22/2021	11:25 11:25	1:30 0:10		6.00	2,000	6.00	19,600)	16.46	0.40	53.72	21.13			
10	End Test	10/22/2021	11:35	1:40	100	6.00	2,000	6.00	19,600)	16.46	6.48	53.72	21.15			
	Start Test	10/22/2021	11:35	0:10		0.00	2,000	0.00				0.10	002				
11	End Test	10/22/2021	11:45	1:50	110	6.00	2,100	6.00	19,500)	17.28	6.80	53.45	21.04			
1	Start Test	10/22/2021	11:45	0:10	120							0.40		04.04			
12	End Test	10/22/2021	11:55	2:00		6.00	2,000	6.00	19,500)	16.46	6.48	53.45	21.04			
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																	T T
																	turf-tec nternational
																	0

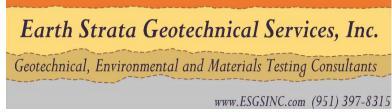
Project Identification:	Palm and N	Meines - Hig	ghland						
Test Location:	DR-1	PR-1							
Liquid Used:	TAP WATE	pH:	8.0						
Tested By:	JMR								
Depth to water table:			0						

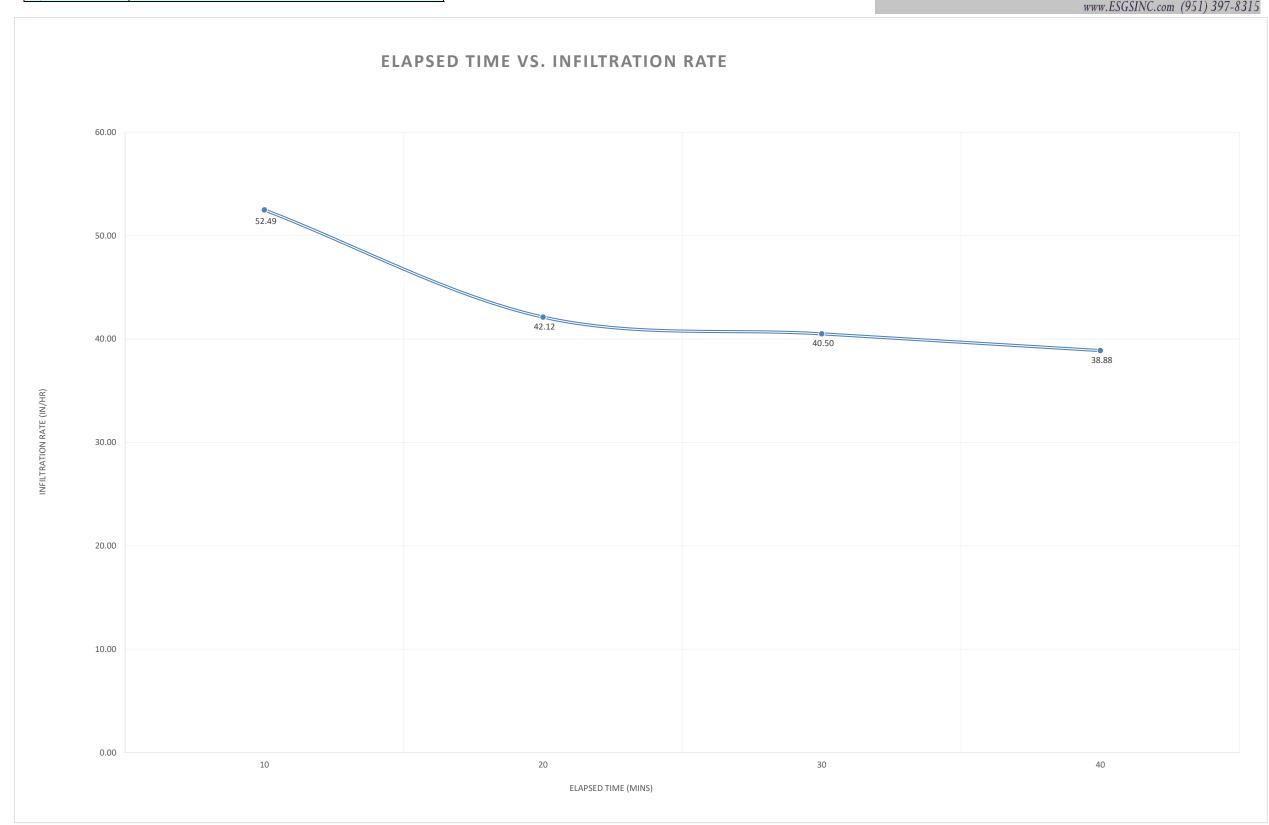




Start 1 End	n: eer table: tart / End rt Test d Test rt Test	Palm and MDR-2 TAP WATE JMR > 30 Feet Date MM/DD/YY 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021	Time HR:MIN 12:20 12:30 12:30 12:40 13:15 13:25	8.0 Date Depth of	10/2 Test Elapsed Time (Min)		Flow Re	ng Liquid level Penetration	729 2189 I maintained Depth of C Annular Space Marriotte Tube Flow	10.0 10.0 (X) Flow	Container Number 1 2 Valve () Inferior	Float Valv	Other es Annular	otte Tubes Annular	Ground Temp	Geotechnica Derature Temp at	Strata Geotechnical Services, Inc. al, Environmental and Materials Testing Consultants www.ESGSINC.com (951) 397-831 Remarks
Trial # Sta Start 1 End Start 2 End Start 3 End Start Start Start	tart / End tart / End rt Test d Test rt Test	Date MM/DD/YY 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021	Time HR:MIN 12:20 12:30 12:30 12:40 13:15 13:25	Time Increment /(Total) 0:10 0:10 0:10 0:20	10/2 Fest Elapsed Time (Min)	22/2021 3 Inner Ring Reading cm	Flow Ro Inner Maroitte Tube Flow	Liquid level Penetration eadings Annular Space	Annular Space Marriotte Tube Flow	(X) Flow outer Ring:	Valve () : Inf	9 cm iltration Rat	Other es Annular	Annular	Ground Temp	Temp at	Remarks
Trial # Sta Start 1 End 7 Start 2 End 7 Start 3 End 7 Start Start Start	tart / End tart / End rt Test d Test rt Test	Date MM/DD/YY 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021	Time HR:MIN 12:20 12:30 12:30 12:40 13:15 13:25	Time Increment /(Total) 0:10 0:10 0:10 0:10 0:20	Elapsed Time (Min)	Inner Ring Reading cm	Flow Ro	Penetration eadings Annular Space	Annular Space Marriotte Tube Flow	uter Ring:	Inf	9 cm iltration Rat	Other es Annular	Annular		Temp at	
Start	rt Test J Test rt Test J Test rt Test J Test rt Test J Test rt Test	Date MM/DD/YY 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021	Time HR:MIN 12:20 12:30 12:30 12:40 13:15 13:25	Time Increment /(Total) 0:10 0:10 0:10 0:10 0:20	Elapsed Time (Min)	Inner Ring Reading cm	Flow Re Inner Maroitte Tube Flow	eadings Annular Space	Annular Space Marriotte Tube Flow	Liquid	Inf Inner Infiltration	iltration Rat	es Annular			Temp at	
Start 1 End	rt Test d Test rt Test d Test rt Test d Test rt Test d Test rt Test	10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021	12:20 12:30 12:30 12:40 13:15 13:25	0:10 0:10 0:10 0:20	Time (Min)	Reading cm	Inner Maroitte Tube Flow	Annular Space	Space Marriotte Tube Flow		Inner Infiltration	Inner	Annular			Temp at	
Start Start 2 End Start St	rt Test d Test rt Test d Test rt Test d Test rt Test d Test rt Test	10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021	12:20 12:30 12:30 12:40 13:15 13:25	0:10 0:10 0:10 0:20	Time (Min)	Reading cm	Maroitte Tube Flow	Space	Space Marriotte Tube Flow		Infiltration				Ground Temp		Weether and the - 5th
1 End 7 Start 2 End 7 Start 3 End 7 Start	d Test rt Test d Test rt Test d Test rt Test d Test	10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021	12:30 12:30 12:40 13:15 13:25	0:10 0:10 0:20	10	6.00			(ml)		Rate cm/h	Rate In/h	Infiltration Rate cm/h	Infiltration Rate In/h		Depth (c)	Weather conditions Etc
1 End 7 Start 2 End 7 Start 3 End 7 Start	d Test rt Test d Test rt Test d Test rt Test d Test	10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021	12:30 12:30 12:40 13:15 13:25	0:10 0:10 0:20	10	6.00											
Start 2 End 7 Start 3 End 7 Start	rt Test d Test rt Test d Test rt Test rt Test	10/22/2021 10/22/2021 10/22/2021 10/22/2021 10/22/2021	12:30 12:40 13:15 13:25	0:10 0:20		0.00	16200	6.00	23,100		133.33	52.49	63.32	24.93			
Start 3 End 7 Start	rt Test d Test rt Test	10/22/2021 10/22/2021 10/22/2021	13:15 13:25	0:20	20												
3 End 7 Start	d Test rt Test	10/22/2021 10/22/2021	13:25	0:10		6.00	13,000	6.00	21,000		107.00	42.12	57.56	22.66			
Start	rt Test	10/22/2021		0:30	30	6.00	12,500	6.00	21,000		102.88	40.50	57.56	22.66			
			13:25	0:30		6.00	12,500	6.00	21,000		102.88	40.50	57.56	22.00			
			13:35	0:40		6.00	12,000	6.00	21,000		98.77	38.88	57.56	22.66			
																	Turf-Tec nternationa
																	Turf-Tec Internationa

Project Identification:	Palm and N	Лeines - Hig	yhland						
Test Location:	DR-2								
Liquid Used:	TAP WATE	pH:	8.0						
Tested By:	JMR								
Depth to water table:	> 30 Feet	30 Feet							





APPENDIX C HISTORIC GROUNDWATER DATA

10/25/21, 10:16 AM WDL Groundwater Data















<u>Data</u>



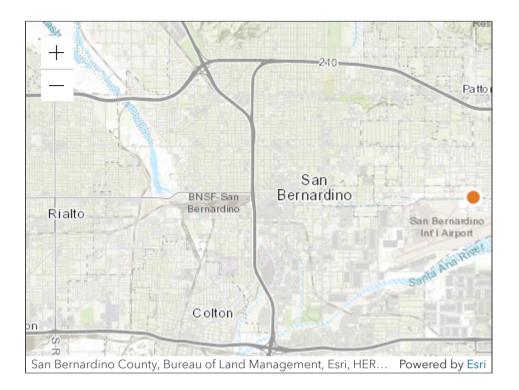


Groundwater Level Report

Station 341070N1172268W001

Station Data Groundwater Level Data

State Well Number:	01S03W05N006S
Local Well Name:	
Site Code:	341070N1172268W001
Latitude (NAD83):	34.107
Longitude (NAD83):	-117.2268
Basin Subbasin Name (Code):	San Bernardino (8-002.06)
Well Use Type:	Unknown
Well Status:	Active
WCR Number:	
Reference Point Elevation (NAVD88 ft):	1145.500
Ground Surface Elevation (NAVD88 ft):	1145.500
Well Depth (feet bgs):	
Perforated Interval Depths (feet bgs):	



WDL Groundwater Data 10/25/21, 10:16 AM











Continuous Data



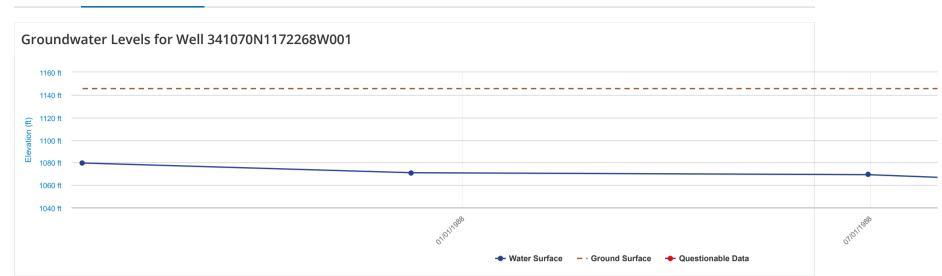


Contact WDL

Groundwater Level Report

Station 341070N1172268W001

Station Data Groundwater Level Data



Download Data

Measurement Date (PST)	Reference Point Elevation	Ground Surface Elevation	Distance from RP to WS	Groundwater Elevation	Ground Surface to Water Surface	Measurement Issue	Collecting Agency	Water Level Measurement Comments
07/15/1987 00:00:00	1145.500	1145.500	65.9	1079.6	65.9		Department of Water Resou	
12/09/1987 00:00:00	1145.500	1145.500	74.51	1070.99	74.51		Department of Water Resou	
06/30/1988 00:00:00	1145.500	1145.500	76.23	1069.27	76.23		Department of Water Resou	
11/23/1988 00:00:00	1145.500	1145.500	87.3	1058.2	87.3		Department of Water Resou	
4 records								



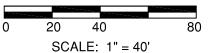
Symbols

- Limits of Report

OR-2

Double Ring Test Location





INFILTRATION MAP

LOCATED ON THE SOUTHWEST CORNER OF PALM AVENUE AND MEINES STREET

CITY OF HIGHLAND, SAN BERNARDINO COUNTY, CALIFORNIA

APN 1201-311-02, 1201-311-03, 1201-311-04, 1201-311-05, 1201-301-14, 1201-301-15, & 1201-301-19

PROJECT	PROJECT PROPOSED COMMERCIAL DEVELOPMENT						
CLIENT	MR. JEAN EDY MATLOCK						
PROJECT NO.	213955-12A						
DATE OCTOBER 2021							
SCALE 1" = 40'							
DWG XREFS							
REVISION							
DRAWN BY	JDG	PLATE	1 OF 1				

Earth Strata Geotechnical Services, Inc.

Geotechnical, Environmental and Materials Testing Consultants

www.ESGSINC.com (951) 397-8315

