SALEM
engineering group, inc.

4729 W. Jacquelyn Avenue
Fresno, California
(559) 271-9700 Office
(559) 273-0827 Fax

February 15, 2017 **Job No. 1-216-0670**

Mr. Jeff Hornacek (209) 405-0617 Phone
Yosemite Mountain Builders, Inc. yosemitebuilder@gmail.com Email
7509 Yosemite Park Way
Yosemite National Park, CA 95389

SUBJECT: **ADDITIONAL SOIL PROFILE LOGS AND PERCOLATION TESTS RESULTS /ADDENDUM #1**
PROPOSED ON-SITE SEPTIC SYSTEM
7548 HENNESS RIDGE DRIVE
YOSEMITE NP, MARIPOSA COUNTY, CALIFORNIA 95389

Dear Mr. Hornacek:

PROJECT UNDERSTANDING AND BACKGROUND

In accordance with your request, we have provided this letter to update our Geotechnical Engineering Investigation Report (SALEM Project No. 1-216-0679, dated July 07, 2016) for the site of approximately 7 acres of undeveloped land located south / southeast of the intersection of Henness Ridge Road and Henness Ridge Drive, and assigned an address of 7548 Henness Ridge Drive. The property is located within the community of Yosemite West, within the borders of Yosemite National Park, Mariposa County, California. The project site is located within forested, mountainous terrain. Preliminary planning indicates the property will be developed with several cabins/outbuildings, building structures, and single-family residences.

At the time of our initial field investigation conducted June 16th and 17th 2016, the proposed effluent disposal area was investigated using eight (8) test pits and four (4) percolation tests were conducted. Since that initial investigation, a community well has been installed in the central portion of the site and several seasonal water courses were observed, thus relegating several test pit and percolation tests irrelevant due to minimum setback distances. Consequently, an additional investigation was required to verify new areas to support the on-site effluent disposal field. An additional investigation was conducted on December 22nd and 23rd, 2016, observing an additional four (4) test pits (TP-9 through TP-12) and an additional five (5) percolation tests (P-5 through P-9). The locations of the test pits and percolation tests are provided on the Site Plan, attached at the end of this letter.

The site was revisited by our representative on December 22nd and 23rd, 2016 along with a representative of Mariposa County who advised and found that, due to varying depths to bedrock and percolation rates faster than 5 minutes per inch, a pre-treatment system should be used and therefore, shallow percolation testing was recommended.

FIELD SERVICES

On December 22nd and 23rd, 2016, SALEM observed the soil conditions within four (4) test pits and conducted five (5) percolation tests. The excavations were performed with a backhoe using a 2-foot wide bucket to depths of 3.5 to 10 feet below existing ground surface (bgs). The location of the test pits and percolation tests are

indicated on the Site Map, Figure 2. The field investigation was carried out/planned according to a site plan relevant at the time of exploration. The current Site Plan (Figure 2), as well as the test pit logs and percolation test data is included at the end of this report.

SURFACE AND SUBSURFACE CONDITIONS

Surface Conditions

The project site is located immediately south / southeast of the intersection of Henness Ridge Road and Henness Ridge Drive, and has been assigned an address of 7548 Henness Drive Circle. The site is generally bounded by a low density rural residential subdivision to the north and west, undeveloped forested land to the east, and a condominium / multi-family development immediately south with additional single family rural residential / vacation rental, and lodging development further south.

At the time of the field reconnaissance, the site consisted primarily of conifer forest and mountain terrain with various rock outcroppings. The general site topography is dominated by a gentle northwest to southeast trending swale sloping to the north with elevations varying from 6,050 feet to 6,125 feet above mean sea elevation. The excavated test pits and related percolation testing were conducted in areas that were observed to be gently sloping.

Earth Materials

The onsite residual soils were observed to consist primarily of a mixture of silty sands and sands as a surface mantle that graded downward into medium to coarse grained sands of decomposed granite. Based on the site exploration, the residual soil cover mantle ranged between 4 and 13 feet in thickness. The above is a general description of the earth material profile. A more detailed representation of the stratigraphy at the specific exploration locations is provided on the attached soil profile test pit logs.

Groundwater

Evidence of seasonal high groundwater (mottling, gleying, etc.) was generally not encountered within the depth of exploration, 10 feet bgs. However, subsurface water runoff can be attributed to seasonal rainfall, snowmelt, etc. During our investigation on December 22nd and 23rd subsurface water was not encountered. The surrounding area should be further investigated if subsurface water is encountered.

PERCOLATION TESTING AND INFILTRATION RATES

On December 22nd and 23rd, 2016, SALEM observed the soil conditions within four (4) test pits and conducted five (5) percolation tests. The purpose of the soil profile test pits was to visually classify and record a continuous log of the native soils encountered. Utilizing the soil profile, five (5) locations were selected to perform percolation testing. In general, due to varying site conditions, the percolation tests were performed at locations throughout the site between depths of 1.7, 2.2, 2.3, 4.3, and 4.9 feet, as advised by Mariposa County Environmental Health Department personnel. The testing and profile boring were conducted in accordance with guidelines established by the U.S. EPA Method of Septic Tank Practices, as well as Mariposa County Environmental Health Department requirements. The approximate location of the percolation tests and profile boring are shown on the attached Site Plan, Figure 2.

Four (4) Test Pits were excavated with a backhoe for means of profiling the subsurface stratigraphy and observing bedrock depths, restrictive layers, and the presence of subsurface water. The test pits generally encountered refusal due to slightly weathered granitic bedrock at depths ranging from 3.5 to a maximum depth of 10 feet below existing grade, at which point the backhoe encountered practical refusal due to competent bedrock. The percolation tests were constructed within test pits at depths indicated in the following Table. The holes were pre-saturated a minimum of 24 hours before percolation testing commenced. Percolation rates were measured by filling the test hole with clean water and measuring the water drops at a certain time intervals.

The percolation rate data are presented in tabular format at the end of this Report. The difference in the percolation rates are reflected by the varied consistency of soil materials. The test results are shown on the table below. A representative of Mariposa County who was present on-site during test pit excavation and percolation test set-up, advised that, due to varying depths to bedrock and percolation rates faster than 5 minutes per inch (per previous testing), a pre-treatment system should be used and therefore, shallow percolation testing was recommended.

PERCOLATION TEST RESULTS

Test No.	Depth (feet)	ULTIMATE* Percolation Rate (min/inch)	Absorption Capacity (gallon/square foot/day)	Soil Type
P-5	4.3	5.6	32.0	Silty SAND (SM)
P-6	2.3	1.7	107.3	Silty SAND (SM)
P-7	4.9	2.1	87.8	Silty SAND (SM)
P-8	2.2	2.2	80.0	Silty SAND (SM)
P-9	1.7	1.5	117.6	Silty SAND (SM)

*Appropriate safety factor not applied

The soil absorption or percolation rates are based on tests conducted with clear water. The percolation rates may vary with time as a result of soil clogging from water impurities. The percolation rates will deteriorate over time due to the soil conditions and a minimum factor of safety should be applied. The percolation rate may become slower if the subgrade soil is wet or saturated due to shallow groundwater or prolonged rainfall. The owner or civil engineer may elect to use a lower factor of safety for the design; however, more frequent maintenance will be expected. The soils may also become less permeable to impermeable if the soil is compacted.

It should be noted that when performing percolation testing services in relatively small excavations, that the testing may not fully model the actual full-scale, long term performance of a given site. This is particularly true where percolation test data is to be used in the design of large infiltration system such as may be proposed for the site. The measured percolation rate includes dispersion of the water at the sidewalls of the boring as well as into the underlying soils. The measured percolation rate should be reduced using a Reduction Factor to account for the discharge of water from both the sides and bottom of the borehole (i.e. non-vertical flow).

Subsurface conditions, including percolation rates, can change over time as fine-grained soils migrate. It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering

developments. We emphasize that this report is valid for the project outlined above and should not be used for any other sites.

LIMITATIONS

The scope of our services did not include a groundwater study and was limited to the performance of percolation testing and soil profile description, and the submitted data only. Our services did not include those associated with septic system design. Neither did services include an Environmental Site Assessment for the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere; or the presence of wetlands.

Any statements, or absence of statements, in this report or on any test-pit logs regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes and are not intended to convey engineering judgment regarding potential hazardous and/or toxic assessment. The geotechnical engineering information presented herein is based upon professional interpretation utilizing standard engineering practices. The work conducted through the course of this investigation, including the preparation of this report, has been performed in accordance with the generally accepted standards of geotechnical engineering practice, which existed in the geographic area at the time the report was written. No other warranty, express or implied, is made.

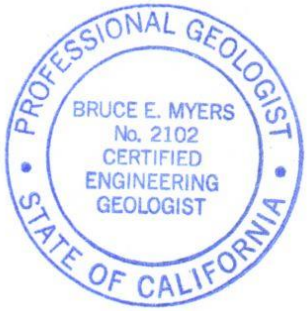
Subsurface conditions, including percolation rates, can change over time as fine-grained soils migrate. It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering developments. We emphasize that this report is valid for the project outlined above and should not be used for any other sites.

Respectfully Submitted,

SALEM ENGINEERING GROUP, INC.

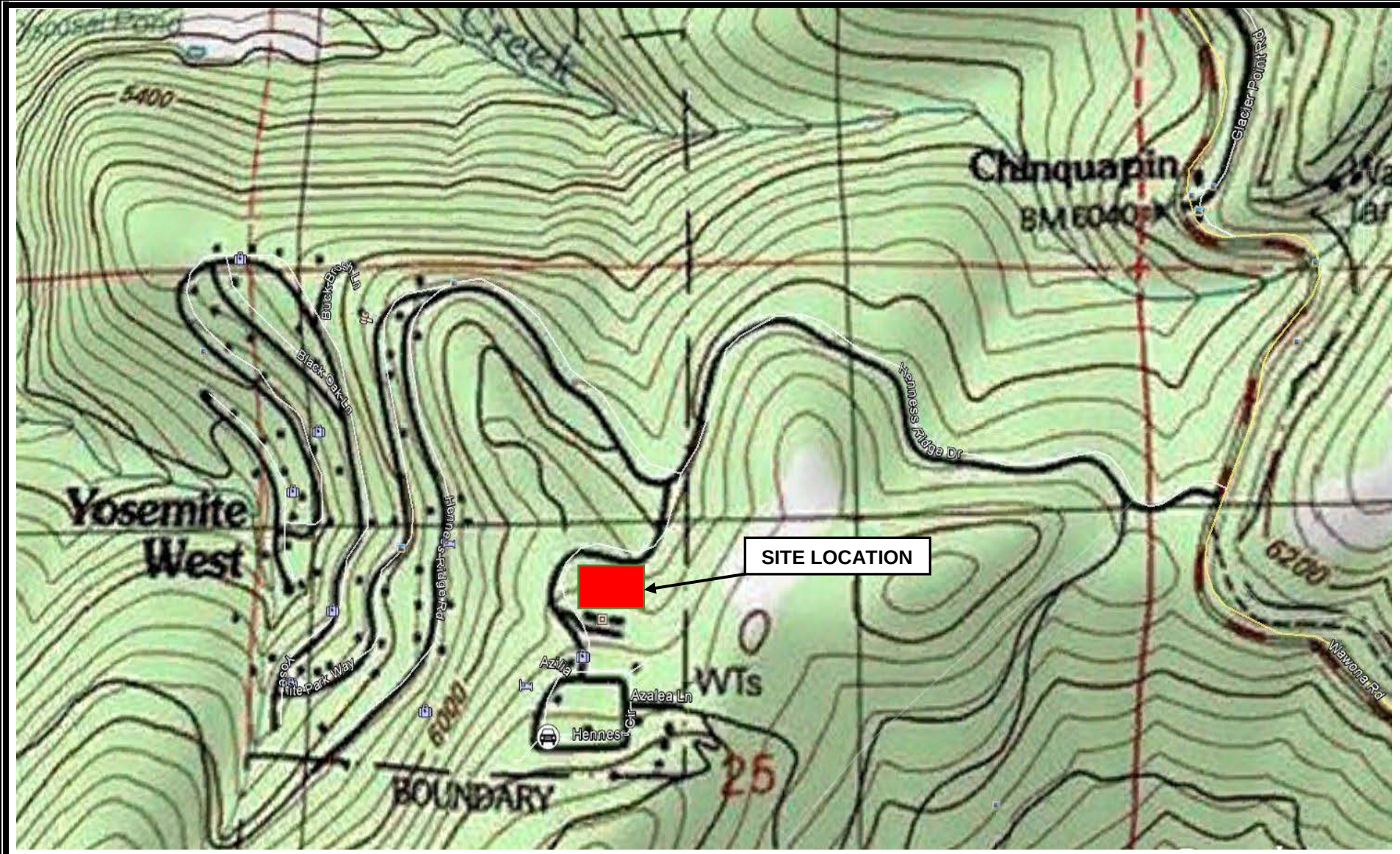
Shaun Reich, EIT
Geotechnical Project Engineer
Central / Northern California

Bruce E. Myers, GE, CEG
Senior Engineer / Eng. Geologist
PE 62067 / CEG 2102



R. Sammy Salem, MS, PE, GE
RCE 52762 / RGE 2549
Principal Managing Engineer

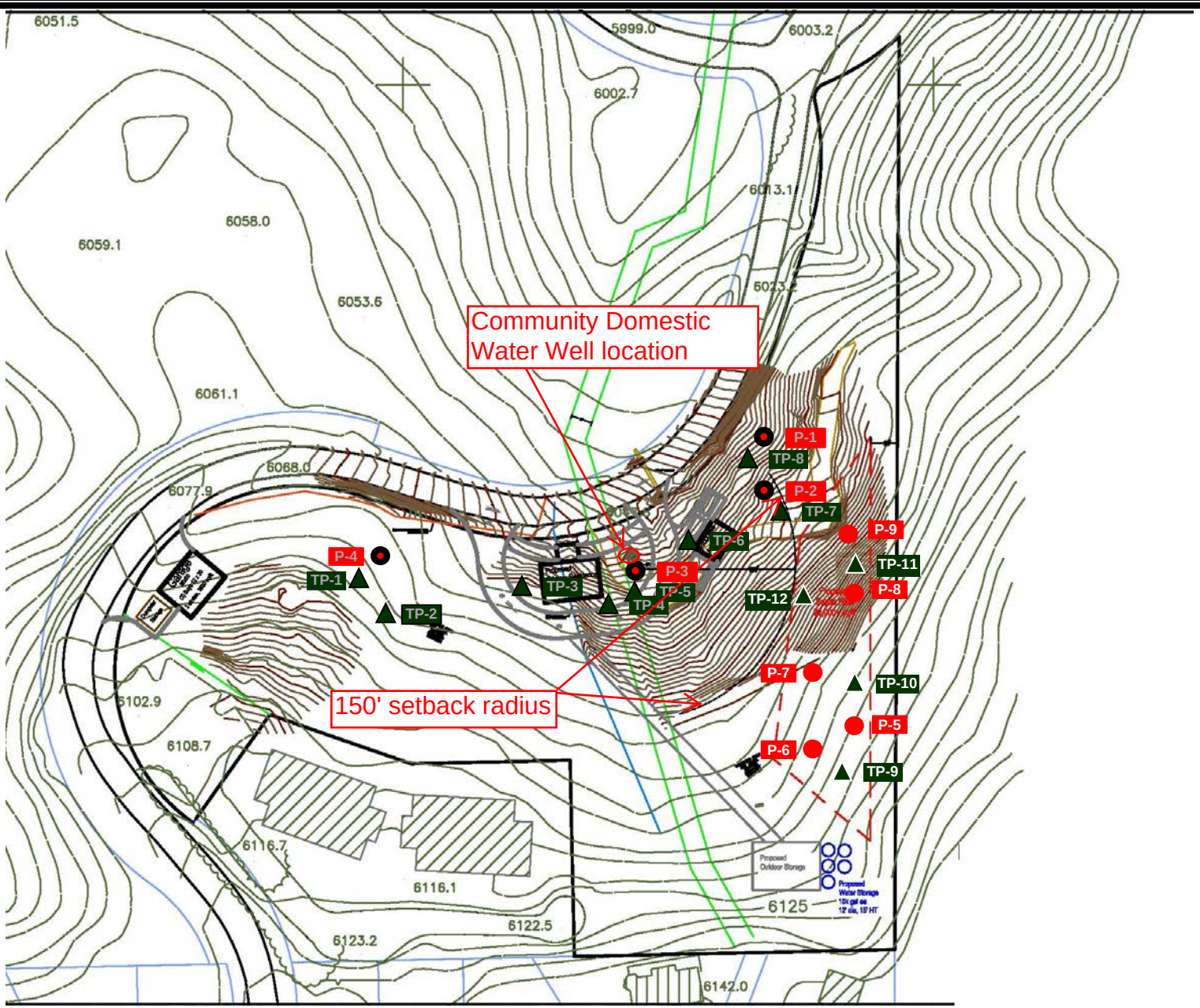
Attachments: Vicinity Map, Figure 1
Site Plan, Figure 2
Test Pit Logs; TP-9 through TP-12
Percolation Test Results; P-5 through P-9
Discussion regarding equivalent rate calculation



Source Image: U.S. Geological Survey, EL Capitan, Calif. 7.5' Quadrangle.

VICINITY MAP **PRELIMINARY ON-SITE SEPTIC FEASIBILITY STUDY** **Addendum #1** **Proposed Scenic Wonders** **7548 Henness Circle** **Yosemite West, California 95389**	SCALE: NOT TO SCALE DRAWN BY: SR PROJECT NO. 1-216-0670	DATE: 02/2017 APPROVED BY: SR FIGURE NO. 1

SALEM engineering group, inc.



SITE PLAN

PRELIMINARY ON-SITE SEPTIC FEASIBILITY STUDY
Addendum #1
Proposed "Scenic Wonders"
7548 Henness Circle
Yosemite West, California 95389

SCALE:	DATE:
NOT TO SCALE	02/2017
DRAWN BY:	APPROVED BY:
AW	SR
PROJECT NO.	FIGURE NO.
1-216-0670	2

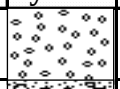
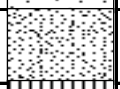
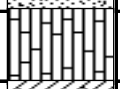
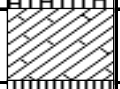
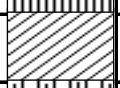
LEGEND:

- TP-9 — Soil Profile Pit Location
- P-5 — Percolation Location
- TP-1 — Prev. Soil Profile Pit Loc.
- P-1 — Previous Perc. Loc.

All Locations Approximate

SALEM engineering group, inc.

Unified Soil Classification System

Major Divisions			Letter	Symbol	Description
Coarse-grained Soils More than ½ retained on the No. 200 Sieve	**Gravels** More than ½ coarse fraction retained on the No. 4 sieve	Clean Gravels	GW		Well-graded gravels and gravel-sand mixtures, little or no fines.
			GP		Poorly-graded gravels and gravel-sand mixtures, little or no fines.
		Gravels With Fines	GM		Silty gravels, gravel-sand-silt mixtures.
			GC		Clayey gravels, gravel-sand-clay mixtures.
	Sands More than ½ passing through the No. 4 sieve	Clean Sands	SW		Well-graded sands and gravelly sands, little or no fines.
			SP		Poorly-graded sands and gravelly sands, little or no fines.
		Sands With Fines	SM		Silty sands, sand-silt mixtures
			SC		Clayey sands, sandy-clay mixtures.
Fine-grained Soils More than ½ passing through the No. 200 Sieve	**Silts and Clays** Liquid Limit less than 50%		ML		Inorganic silts, very fine sands, rock flour, silty or clayey fine sands.
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL		Organic clays of medium to high plasticity.
	Silts and Clays Liquid Limit greater than 50%		MH		Inorganic silts, micaceous or diatomaceous fines sands or silts, elastic silts.
			CH		Inorganic clays of high plasticity, fat clays.
			OH		Organic clays of medium to high plasticity.
Highly Organic Soils			PT		Peat, muck, and other highly organic soils.

Consistency Classification

Granular Soils			***Cohesive Soils***		
Description - Blows Per Foot (Corrected)			Description - Blows Per Foot (Corrected)		
	MCS	SPT		MCS	SPT
Very loose	<5	<4	Very soft	<3	<2
Loose	5 – 15	4 – 10	Soft	3 – 5	2 – 4
Medium dense	16 – 40	11 – 30	Firm	6 – 10	5 – 8
Dense	41 – 65	31 – 50	Stiff	11 – 20	9 – 15
Very dense	>65	>50	Very Stiff	21 – 40	16 – 30
			Hard	>40	>30

MCS = Modified California Sampler

SPT = Standard Penetration Test Sampler

Test Pit No. TP-9

Project: Scenic Wonders On-Site Septic System
Client: Yosemite Mountain Builders Inc.
Location: S. of Henness Ridge Drive & Henness Circle, Yosemite West, CA
Grnd. Surf. Elev. (Ft. MSL) N/A

Project No: 1-216-0670
Figure No.: A-9
Logged By: JRM/JH
Initial: None
At Completion: None
Depth to Water>

SUBSURFACE PROFILE			SAMPLE						
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture Content (%)	Sampler Type	Penetration	Blow Count	Penetration Test (20 40 60 80)	Water Level
0		Ground Surface							
		Silty SAND (SM) Brown; moist; medium to fine-grained.							
5		**SAND with Silt (SP-SM)** Brown; moist; medium to fine-grained.							
		Refusal @ 8 Feet Due to Bedrock							
10									

Excavation Method: 24 Inches Excavator Bucket
Excavation Date: 12/22/2016
Equipment: JCB eco
Pit Size: 2' x 8' x 8'
Operator:
Sheet: 1 of 1

SALEM

Test Pit No. TP-10

Project: Scenic Wonders On-Site Septic System
Client: Yosemite Mountain Builders Inc.
Location: S. of Henness Ridge Drive & Henness Circle, Yosemite West, CA
Grnd. Surf. Elev. (Ft. MSL) N/A

Project No: 1-216-0670
Figure No.: A-10
Logged By: JRM/JH
Initial: None
At Completion: None
Depth to Water>

SUBSURFACE PROFILE			SAMPLE						
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture Content (%)	Sampler Type	Penetration	Blow Count	Penetration Test (20 40 60 80)	Water Level
0		Ground Surface							
		Silty SAND (SM) Brown; moist; medium to fine-grained; with some organics.							
5		Refusal @ 4.5 Feet Due to Bedrock							
10									

Excavation Method: 24 Inches Excavator Bucket
Excavation Date: 12/22/2016
Equipment: JCB eco
Pit Size: 2' x 8' x 4.5'
Operator:
Sheet: 1 of 1

SALEM

Test Pit No. TP-11

Project: Scenic Wonders On-Site Septic System
Client: Yosemite Mountain Builders Inc.
Location: S. of Henness Ridge Drive & Henness Circle, Yosemite West, CA
Grnd. Surf. Elev. (Ft. MSL) N/A

Project No: 1-216-0670
Figure No.: A-11
Logged By: JRM/JH
Initial: None
At Completion: None
Depth to Water>

SUBSURFACE PROFILE			SAMPLE						
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture Content (%)	Sampler Type	Penetration	Blow Count	Penetration Test (20 40 60 80)	Water Level
0		Ground Surface							
		Silty SAND (SM) Brown; moist; medium to fine-grained; with some organics.							
		Refusal @ 3.5 Feet Due to Bedrock							
5									
10									

Excavation Method: 24 Inches Excavator Bucket
Excavation Date: 12/22/2016
Equipment: JCB eco
Pit Size: 2' x 8' x 3.5'
Operator:
Sheet: 1 of 1

SALEM

Test Pit No. TP-12

Project: Scenic Wonders
Client: Yosemite Mountain Builders Inc.
Location: S. of Henness Ridge Drive & Henness Circle, Yosemite West, CA
Grnd. Surf. Elev. (Ft. MSL) N/A

Project No: 1-216-0670
Figure No.: A-12
Logged By: JRM/JH
Initial: None
Depth to Water>
At Completion: None

SUBSURFACE PROFILE			SAMPLE						
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture Content (%)	Sampler Type	Penetration	Blow Count	Penetration Test (20 40 60 80)	Water Level
0		Ground Surface							
		Silty SAND (SM) Brown; moist; medium to fine-grained; with some organics.							
5		**SAND with Silt (SP-SM)** Light brown with oxidation; moist; medium to fine-grained.							
10		Refusal @ 10 Feet Due to Bedrock							
15									

Excavation Method: 24 Inches Excavator Bucket
Excavation Date: 12/22/2016
Equipment: JCB eco
Pit Size: 2' x 8' x 10'
Operator:
Sheet: 1 of 1

SALEM

Percolation Test Worksheet

Project: **Proposed Scenic Wonders**
Henness Ridge Dr.
Yosemite West, CA

Job No.: **1-216-0670**
Date Drilled: **12/22/2016**
Soil Classification: **Silty SAND (SM)**

Vol. in 1" Wtr Col. (in^3): **50.3**

Hole Dia.: 8 in.
Pipe Dia.: 3 in.
Gravel pack porosity: 0.4
Gravel Correc Factor: 0.5
Pipe stickup: n/a ft ##

Test Hole No.: **P-5**
Tested By: **JH**
Test Depth: **4.25** ft.

Presoaking Date: **12/22/2016**
Test Date: **12/23/2016**

Time Start	Time Finish	Depth of Test Hole (ft)#	Refill-Yes or No	Elapsed Time (hrs:min)	Initial Water Level# (ft)	Final Water Level# (ft)	Δ Water Level (in.)	Δ Min.	Meas. Perc Rate (min/in)	Grvl Pack Corr. Rate (min/in)	6" Dia. x 6" Water Equiv. MPI:	Avg. Ht. of Water Column** (in.)	Wetted Surf. Area of Column (in^2)	Absorp. Rate (gpd/ft^2)
9:04	9:07	5.05	Y	0:03	4.26	4.85	7.08	3	0.4	0.9	0.7	5.9	200	258.5
9:09	9:14	5.05	Y	0:05	4.45	4.67	2.64	5	1.9	3.9	3.1	5.9	198	58.3
9:16	9:21	5.05	Y	0:05	4.43	4.65	2.64	5	1.9	3.9	3.2	6.1	204	56.5
9:23	9:28	5.05	Y	0:05	4.38	4.62	2.88	5	1.7	3.6	3.1	6.6	216	58.2
9:29	9:34	5.05	Y	0:05	4.30	4.47	2.04	5	2.5	5.1	5.1	8.0	251	35.6
9:36	9:41	5.05	Y	0:05	4.35	4.59	2.88	5	1.7	3.6	3.2	7.0	225	55.9
9:42	9:52	5.05	Y	0:10	4.31	4.65	4.08	10	2.5	5.1	4.5	6.8	222	40.1
9:53	10:03	5.05	Y	0:10	4.29	4.54	3.00	10	3.3	6.9	6.6	7.6	242	27.1
10:03	10:13	5.05	Y	0:10	4.28	4.55	3.24	10	3.1	6.4	6.1	7.6	242	29.3
10:13	10:23	5.05	Y	0:10	4.27	4.56	3.48	10	2.9	5.9	5.7	7.6	242	31.5
												Absorption Rate*		32.0
												6" Dia. Borehole with 6" of Water Equivalent MPI(1):		**5.6**

reference height measurement

(+ or - from grade)

** Top of water to base of hole (below approximately 2" of gravel)

* last 4 readings

Note: [1] For Correction Explanation see attached "Notes"

SALEM engineering group, inc.

Percolation Test Worksheet

Project: Proposed Scenic Wonders
Henness Ridge Dr.
Yosemite West, CA

Job No.: 1-216-0670
Date Drilled: 12/22/2016
Soil Classification: Silty SAND (SM)

Vol. in 1" Wtr Col. (in^3): 50.3

Hole Dia.: 8 in.
Pipe Dia.: 3 in.
Gravel pack porosity: 0.4
Gravel Correc Factor: 0.5
Pipe stickup: n/a ft ##

Test Hole No.: P-6
Tested By: JRM
Test Depth: 2.25 ft.

Presoaking Date: 12/22/2016
Test Date: 12/23/2016

Time Start	Time Finish	Depth of Test Hole (ft)#	Refill-Yes or No	Elapsed Time (hrs:min)	Initial Water Level# (ft)	Final Water Level# (ft)	Δ Water Level (in.)	Δ Min.	Meas. Perc Rate (min/in)	Grvl Pack Corr. Rate (min/in)	6" Dia. x 6" Water Equiv. MPI:	Avg. Ht. of Water Column** (in.)	Wetted Surf. Area of Column (in^2)	Absorp. Rate (gpd/ft^2)
8:47	8:50	4.07	Y	0:03	3.48	4.00	6.24	3	0.5	1.0	0.6	4.0	150	303.5
8:50	8:53	4.07	Y	0:03	3.25	3.73	5.76	3	0.5	1.1	1.0	7.0	225	186.3
8:53	8:56	4.07	Y	0:03	3.36	3.93	6.84	3	0.4	0.9	0.6	5.1	178	279.3
8:56	8:59	4.07	Y	0:03	3.27	3.62	4.20	3	0.7	1.5	1.4	7.5	239	128.2
8:59	9:02	4.07	Y	0:03	3.36	3.82	5.52	3	0.5	1.1	0.9	5.8	195	206.2
9:04	9:06	4.07	Y	0:02	3.29	3.63	4.08	2	0.5	1.0	0.9	7.3	234	190.3
9:06	9:09	4.07	Y	0:03	3.31	3.74	5.16	3	0.6	1.2	1.0	6.5	215	175.1
9:09	9:12	4.07	Y	0:03	3.35	3.71	4.32	3	0.7	1.4	1.2	6.5	213	147.7
9:12	9:15	4.07	Y	0:03	3.30	3.61	3.72	3	0.8	1.7	1.6	7.4	236	115.0
9:15	9:18	4.07	Y	0:03	3.24	3.58	4.08	3	0.7	1.5	1.5	7.9	249	119.2
9:18	9:21	4.07	N	0:03	3.58	3.88	3.60	3	0.8	1.7	1.0	4.1	153	171.6
9:21	9:24	4.07	Y	0:03	3.34	3.69	4.20	3	0.7	1.5	1.3	6.7	218	140.6
9:24	9:27	4.07	Y	0:03	3.19	3.49	3.60	3	0.8	1.7	1.9	8.8	270	97.0
9:27	9:30	4.07	N	0:03	3.49	3.85	4.32	3	0.7	1.4	1.0	4.8	171	184.2
9:30	9:33	4.07	Y	0:03	3.33	3.60	3.24	3	0.9	1.9	1.8	7.3	233	101.4
9:33	9:36	4.07	Y	0:03	3.28	3.47	2.28	3	1.3	2.7	2.8	8.3	260	63.9
9:36	9:39	4.07	N	0:03	3.47	3.72	3.00	3	1.0	2.1	1.6	5.7	194	112.9
9:39	9:42	4.07	Y	0:03	3.33	3.62	3.48	3	0.9	1.8	1.6	7.1	230	110.4
9:42	9:45	4.07	Y	0:03	3.30	3.55	3.00	3	1.0	2.1	2.0	7.7	245	89.3
9:45	9:48	4.07	N	0:03	3.55	3.78	2.76	3	1.1	2.2	1.5	4.9	172	116.6
												Absorption Rate*		107.3
												6" Dia. Borehole with 6" of Water Equivalent MPI(1):		**1.7**

reference height measurement

(+ or - from grade)

** Top of water to base of hole (below approximately 2" of gravel)

* last 4 readings

Note: [1] For Correction Explanation see attached "Notes"

SALEM engineering group, inc.

Percolation Test Worksheet

Project: Proposed Scenic Wonders
Henness Ridge Dr.
Yosemite West, CA

Job No.: 1-216-0670
Date Drilled: 12/22/2016
Soil Classification: Silty SAND (SM)

Vol. in 1" Wtr Col. (in^3): 50.3

Hole Dia.: 8 in.
Pipe Dia.: 3 in.
Gravel pack porosity: 0.4
Gravel Correc Factor: 0.5
Pipe stickup: n/a ft ##

Test Hole No.: P-7
Tested By: JRM
Test Depth: 4.93 ft.

Presoaking Date: 12/22/2016
Test Date: 12/23/2016

Time Start	Time Finish	Depth of Test Hole (ft)#	Refill-Yes or No	Elapsed Time (hrs:min)	Initial Water Level# (ft)	Final Water Level# (ft)	Δ Water Level (in.)	Δ Min.	Meas. Perc Rate (min/in)	Grvl Pack Corr. Rate (min/in)	6" Dia. x 6" Water Equiv. MPI:	Avg. Ht. of Water Column** (in.)	Wetted Surf. Area of Column (in^2)	Absorp. Rate (gpd/ft^2)
8:49	8:52	3.84	Y	0:03	3.15	3.56	4.92	3	0.6	1.3	1.0	5.8	197	182.4
8:52	8:55	3.84	N	0:03	3.56	3.73	2.04	3	1.5	3.0	1.3	2.3	109	136.3
8:55	8:58	3.84	Y	0:03	3.03	3.39	4.32	3	0.7	1.4	1.4	7.6	240	131.0
8:58	9:01	3.84	N	0:03	3.39	3.59	2.40	3	1.3	2.6	1.6	4.2	156	112.2
9:01	9:04	3.84	Y	0:03	3.09	3.38	3.48	3	0.9	1.8	1.7	7.3	233	108.9
9:04	9:07	3.84	N	0:03	3.38	3.58	2.40	3	1.3	2.6	1.6	4.3	159	110.1
9:07	9:11	3.84	Y	0:04	3.06	3.36	3.60	4	1.1	2.3	2.2	7.6	240	81.9
9:11	9:14	3.84	N	0:03	3.36	3.52	1.92	3	1.6	3.2	2.2	4.8	171	81.8
9:16	9:19	3.84	Y	0:03	2.88	3.08	2.40	3	1.3	2.6	3.2	10.3	310	56.5
9:19	9:22	3.84	N	0:03	3.08	3.39	3.72	3	0.8	1.7	1.5	7.3	233	116.4
9:22	9:25	3.84	N	0:03	3.39	3.56	2.04	3	1.5	3.0	1.9	4.4	160	92.7
9:25	9:28	3.84	Y	0:03	2.92	3.12	2.40	3	1.3	2.6	3.1	9.8	298	58.8
9:28	9:31	3.84	N	0:03	3.12	3.41	3.48	3	0.9	1.8	1.6	6.9	224	113.3
9:31	9:34	3.84	Y	0:03	2.96	3.20	2.88	3	1.0	2.2	2.4	9.1	279	75.1
9:34	9:37	3.84	N	0:03	3.20	3.38	2.16	3	1.4	2.9	2.5	6.6	216	72.8
9:37	9:40	3.84	N	0:03	3.38	3.57	2.28	3	1.3	2.7	1.7	4.4	160	103.6
9:40	9:43	3.84	Y	0:03	2.97	3.20	2.76	3	1.1	2.2	2.5	9.1	278	72.3
9:43	9:46	3.84	N	0:03	3.20	3.42	2.64	3	1.1	2.3	2.0	6.4	210	91.5
9:46	9:49	3.84	Y	0:03	2.93	3.18	3.00	3	1.0	2.1	2.4	9.4	287	76.1
9:49	9:52	3.84	N	0:03	3.18	3.38	2.40	3	1.3	2.6	2.3	6.7	219	79.8
9:52	9:55	3.84	N	0:03	3.38	3.57	2.28	3	1.3	2.7	1.7	4.4	160	103.6
												Absorption Rate*		87.8
												6" Dia. Borehole with 6" of Water Equivalent MPI(1):		**2.1**

reference height measurement

(+ or - from grade)

** Top of water to base of hole (below approximately 2" of gravel)

* last 4 readings

Note: [1] For Correction Explanation see attached "Notes"

SALEM engineering group, inc.

Percolation Test Worksheet

Project: **Proposed Scenic Wonders**
Henness Ridge Dr.
Yosemite West, CA

Job No.: **1-216-0670**
Date Drilled: **12/22/2016**
Soil Classification: **Silty SAND (SM)**

Vol. in 1" Wtr Col. (in^3): **50.3**

Hole Dia.: 8 in.
Pipe Dia.: 3 in.
Gravel pack porosity: 0.4
Gravel Correc Factor: 0.5
Pipe stickup: n/a ft ##

Test Hole No.: **P-8**
Tested By: **JH**
Test Depth: **2.15** ft.

Presoaking Date: **12/22/2016**
Test Date: **12/23/2016**

Time Start	Time Finish	Depth of Test Hole (ft)#	Refill- Yes or No	Elapsed Time (hrs:min)	Initial Water Level# (ft)	Final Water Level# (ft)	Δ Water Level (in.)	Δ Min.	Meas. Perc Rate (min/in)	Grvl Pack Corr. Rate (min/in)	6" Dia. x 6" Water Equiv. MPI:	Avg. Ht. of Water Column** (in.)	Wetted Surf. Area of Column (in^2)	Absorp. Rate (gpd/ft^2)
9:01	9:04	2.45	Y	0:03	1.40	2.20	9.60	3	0.3	0.6	0.6	7.8	246	284.0
9:07	9:10	2.45	Y	0:03	1.80	2.19	4.68	3	0.6	1.3	1.0	5.5	187	181.8
9:14	9:19	2.45	Y	0:05	1.80	2.27	5.64	5	0.9	1.8	1.3	5.0	175	140.5
9:20	9:25	2.45	Y	0:05	1.85	2.20	4.20	5	1.2	2.5	1.7	5.1	178	102.9
9:26	9:31	2.45	Y	0:05	2.04	2.33	3.48	5	1.4	3.0	1.5	3.2	130	116.8
9:33	9:38	2.45	Y	0:05	2.10	2.39	3.48	5	1.4	3.0	1.3	2.5	112	135.7
9:39	9:49	2.45	Y	0:10	2.22	2.45	2.76	10	3.6	7.5	2.5	1.4	85	71.0
9:50	9:56	2.45	Y	0:06	2.04	2.29	3.00	6	2.0	4.1	2.2	3.4	136	80.2
9:57	10:02	2.45	Y	0:05	1.98	2.23	3.00	5	1.7	3.4	2.1	4.1	154	85.0
10:04	10:10	2.45	Y	0:06	1.85	2.15	3.60	6	1.7	3.4	2.6	5.4	186	70.5
10:11	10:16	2.45	Y	0:05	1.94	2.20	3.12	5	1.6	3.3	2.2	4.6	165	82.7
10:17	10:22	2.45	Y	0:05	1.75	2.08	3.96	5	1.3	2.6	2.2	6.4	212	81.8

Absorption Rate*	80.0
6" Dia. Borehole with 6" of Water Equivalent MPI(1):	**2.2**

reference height measurement

(+ or - from grade)

** Top of water to base of hole (below approximately 2" of gravel)

* last 4 readings

Note: [1] For Correction Explanation see attached "Notes"

SALEM engineering group, inc.

Percolation Test Worksheet

Project: Proposed Scenic Wonders
Henness Ridge Dr.
Yosemite West, CA

Job No.: 1-216-0670
Date Drilled: 12/22/2016
Soil Classification: Silty SAND (SM)

Vol. in 1" Wtr Col. (in^3): 50.3

Hole Dia.: 8 in.
Pipe Dia.: 3 in.
Gravel pack porosity: 0.4
Gravel Correc Factor: 0.5
Pipe stickup: n/a ft ##

Test Hole No.: P-9
Tested By: JRM
Test Depth: 1.7 ft.

Presoaking Date: 12/22/2016
Test Date: 12/23/2016

Time Start	Time Finish	Depth of Test Hole (ft)#	Refill-Yes or No	Elapsed Time (hrs:min)	Initial Water Level# (ft)	Final Water Level# (ft)	Δ Water Level (in.)	Δ Min.	Meas. Perc Rate (min/in)	Grvl Pack Corr. Rate (min/in)	6" Dia. x 6" Water Equiv. MPI:	Avg. Ht. of Water Column** (in.)	Wetted Surf. Area of Column (in^2)	Absorp. Rate (gpd/ft^2)
8:20	8:25	2.63	Y	0:05	2.13	2.63	6.00	5	0.8	1.7	0.9	3.0	126	208.7
8:25	8:27	2.63	Y	0:02	2.13	2.29	2.00	2	1.0	2.1	1.4	5.0	176	124.2
8:29	8:31	2.63	Y	0:02	2.00	2.08	1.00	2	2.0	4.1	3.7	7.0	226	48.3
8:31	8:33	2.63	N	0:02	2.08	2.29	2.50	2	0.8	1.7	1.2	5.3	182	149.9
8:34	8:36	2.63	Y	0:02	2.13	2.38	3.00	2	0.7	1.4	0.9	4.5	163	200.7
8:37	8:39	2.63	Y	0:02	2.13	2.25	1.50	2	1.3	2.8	2.0	5.3	182	90.0
8:39	8:41	2.63	N	0:02	2.25	2.46	2.50	2	0.8	1.7	0.9	3.3	132	207.1
8:41	8:43	2.63	Y	0:02	2.13	2.25	1.50	2	1.3	2.8	2.0	5.3	182	90.0
8:43	8:45	2.63	N	0:02	2.25	2.46	2.50	2	0.8	1.7	0.9	3.3	132	207.1
8:45	8:47	2.63	Y	0:02	2.13	2.25	1.50	2	1.3	2.8	2.0	5.3	182	90.0
8:47	8:49	2.63	N	0:02	2.25	2.38	1.50	2	1.3	2.8	1.6	3.8	145	113.4
8:49	8:51	2.63	Y	0:02	2.08	2.21	1.50	2	1.3	2.8	2.1	5.8	195	84.2
8:51	8:53	2.63	N	0:02	2.21	2.33	1.50	2	1.3	2.8	1.7	4.3	157	104.4
8:53	8:55	2.63	N	0:02	2.33	2.46	1.50	2	1.3	2.8	1.3	2.8	119	137.3
8:55	8:57	2.63	Y	0:02	2.04	2.19	1.75	2	1.1	2.4	1.9	6.1	204	93.7
8:57	8:59	2.63	N	0:02	2.19	2.38	2.25	2	0.9	1.8	1.1	4.1	154	159.7
8:59	9:01	2.63	N	0:02	2.38	2.48	1.25	2	1.6	3.3	1.4	2.4	110	124.2
9:01	9:03	2.63	Y	0:02	2.08	2.21	1.50	2	1.3	2.8	2.1	5.8	195	84.2
9:03	9:05	2.63	N	0:02	2.21	2.33	1.50	2	1.3	2.8	1.7	4.3	157	104.4
9:05	9:07	2.63	Y	0:02	1.92	2.08	2.00	2	1.0	2.1	2.0	7.5	239	91.5
9:07	9:09	2.63	N	0:02	2.08	2.29	2.50	2	0.8	1.7	1.2	5.3	182	149.9
9:09	9:11	2.63	N	0:02	2.29	2.42	1.50	2	1.3	2.8	1.4	3.3	132	124.2
9:11	9:13	2.63	Y	0:02	2.08	2.21	1.50	2	1.3	2.8	2.1	5.8	195	84.2
9:13	9:15	2.63	N	0:02	2.21	2.38	2.00	2	1.0	2.1	1.2	4.0	151	144.9
9:15	9:17	2.63	Y	0:02	2.08	2.19	1.25	2	1.6	3.3	2.6	5.9	198	69.0
9:17	9:19	2.63	N	0:02	2.19	2.31	1.50	2	1.3	2.8	1.8	4.5	163	100.3
9:19	9:21	2.63	Y	0:02	2.04	2.15	1.25	2	1.6	3.3	2.8	6.4	210	64.9
9:21	9:23	2.63	N	0:02	2.15	2.31	2.00	2	1.0	2.1	1.4	4.8	170	128.8
9:23	9:25	2.63	N	0:02	2.31	2.48	2.00	2	1.0	2.1	1.0	2.8	119	183.1
9:25	9:27	2.63	Y	0:02	2.17	2.29	1.50	2	1.3	2.8	1.9	4.8	170	96.6
9:27	9:29	2.63	N	0:02	2.29	2.44	1.75	2	1.1	2.4	1.2	3.1	129	148.5
9:29	9:31	2.63	Y	0:02	2.13	2.25	1.50	2	1.3	2.8	2.0	5.3	182	90.0
9:31	9:33	2.63	N	0:02	2.25	2.40	1.75	2	1.1	2.4	1.3	3.6	141	135.3
												Absorption Rate*		117.6
												6" Dia. Borehole with 6" of Water Equivalent MPI[(1)]:		**1.5**

reference height measurement

(+ or - from grade)

** Top of water to base of hole (below approximately 2" of gravel)

* last 4 readings

Note: [1] For Correction Explanation see attached "Notes"

SALEM engineering group, inc.