SEPTIC FEASIBILITY STUDY
For a Portion of
GENERATIONS AT GREEN VALLEY
EL DORADO HILLS, EL DORADO COUNTY, CALIFORNIA

Prepared by:

Youngdahl Consulting Group, Inc.
1234 Glenhaven Court
El Dorado Hills, California 95762

Prepared For:

Green Valley Road Benefits, LLC
c/o TTLC Management
110 Blue Ravine Rd., Ste. 209
Folsom, California 95630

Project No. E11047.003
12 July 2022

YOUNGDAHL

YOUNGDAHL CONSULTING GROUP, INC.
ESTABLISHED 1984
1234 Glenhaven Court, El Dorado Hills, CA 95762
4300 Anthony Court, Unit D, Rocklin, CA 95677
ph 916.933.0633 fx 916.933.6482
www.youngdahl.net

Green Valley Road Benefits, LLC
c/o TTLC Management , Inc.
110 Blue Ravine Rd., Ste 209
Folsom, CA 95630

Project No. E11047.003
12 July 2022

Attention: Mr. Aidan Barry

Subject: **GENERATIONS AT GREEN VALLEY**
El Dorado Hills, El Dorado County, California
Septic Feasibility Study

Reference:
1) Standards for The Site Evaluation, Design, and Construction of Onsite Wastewater Treatment Systems (OWTS Manual), El Dorado County Department of Environmental Management, 13 May 2018.
2) Custom Soil Resource report for El Dorado Area, United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, accessed 27 June 2022.
3) Loyd, R.C., (1984), Mineral Land Classification of the Folsom 15 Minute Quadrangle, Sacramento, El Dorado, Placer, and Amador Counties, California@, DMG Open File Report 84-50, California Department of Conservation, Division of Mines and Geology.

Dear Mr. Barry,

With your authorization, Youngdahl Consulting Group, Inc. (Youngdahl) has completed a septic feasibility study for a portion of the Generations at Green Valley project, a proposed residential development project located south of Green Valley Road in El Dorado Hills, El Dorado County, California. The subject property is assigned the El Dorado County Assessor's Parcel Numbers (APNs) 126-150-023 and 126-020-003. This report presents the results of a septic feasibility investigation performed by Youngdahl, which includes percolation test data and our recommendations as to the feasibility of onsite wastewater disposal.

Very truly yours,
Youngdahl Consulting Group, Inc.

David C. Sederquist, C.E.G., C.HG.
Senior Engineering Geologist/Hydrogeologist
7-15-22

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GENERATIONS AT GREEN VALLEY
SEPTIC FEASIBILITY STUDY
GREEN VALLEY ROAD, EL DORADO HILLS, CALIFORNIA

1.0 PURPOSE AND SCOPE

With the authorization of Mr. Aidan Barry of TTLC Management, Inc., Youngdahl Consulting Group, Inc. (Youngdahl) has completed a septic feasibility study for the Generations at Green Valley project, El Dorado County and designated Assessor's Parcel Numbers (APN) 126-150-023 and 126-020-003. The subject property is located on the south side of Green Valley Road, starting approximately 100 feet southeast of the intersection of Green Valley Road and Malcolm Dixon Road in El Dorado Hills, El Dorado County, California (Figures 1 - 3). The purpose of this septic system feasibility study was to evaluate several proposed lots within a larger subdivision that are proposed to use onsite wastewater disposal whereas the rest of the subdivision is planned to be served by a sewage collection system.

The portion of the property proposed to use onsite wastewater disposal includes seven (7) single-family residential lots. The purpose of this study was to evaluate onsite soils, the near surface geology, and the feasibility of an onsite wastewater disposal. The scope of this study included performing the excavation of three (3) test pits and three (3) sets of four (4) percolation tests per test pit. This study was conducted with adherence to *Standards for The Site Evaluation, Design, and Construction of Onsite Wastewater Treatment Systems (OWTS Manual), El Dorado County Department of Environmental Management, 13 May 2018.*

2.0 SITE DESCRIPTION

The site is currently former ranch land including a former residence and encompasses an approximately estimated 56.7-acre triangular shaped property (Figures 2 and 3). This site is accessed off Green Valley Road approximately 100 feet southeast of the intersection of Green Valley Road and Malcolm Dixon Road. Vegetation on the property is predominantly open oak woodland with grassland on gently rolling terrain. The project is dominated by Green Spring Creek flowing in a northwesterly direction with at least two (2) ponds and two seasonal drainages that flow in a northeasterly direction draining into Green Spring Creek. Ground elevations range from approximately 965 feet above mean sea level (MSL) near the northwest corner to 1135 feet above MSL on the southeast end of the property.

3.0 SOILS AND GEOLOGY

3.1 SOILS

The soils on the project site are derived from the underlying weathered rock formations. The soils research consisted of accessing the online soils data available from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) for the El Dorado Area (1974) (Reference 2). The soil and completely weathered rock interface were encountered at depths ranging from 0.75 to 2.5-feet below ground surface (bgs) in the test pits. According to the Soil Survey of the El Dorado Area, the site is underlain by the Auburn Silt Loam (AwD), 2 to 30 percent slopes (42% of the area), the Auburn very rocky silt loam (AxD), 2 to 30 percent slopes (33% of the area), Serpentine rock land (SaF) (24% of the area, and Placer Diggings (PrD) (1% of the area).

3.1.1 Auburn Silt Loam, AwD Soils

The Auburn silt loam, 2 to 30 percent slopes (AwD) is mapped within the southern portion of the property, and is characterized as well drained in hydrologic soil group D with 3 percent bedrock outcrop.

3.1.2 Auburn Very Rocky Loam, AxD Soils

The Auburn very rocky loam, 2 to 30 percent slopes (AxD) is mapped mostly in the northwestern and southeastern portions of the site, and is characterized as well drained 15 percent bedrock cover.

3.1.3 Serpentine Rock Land, SaF

The Serpentine rock land, (SaF) is mapped along the northeastern side of the property and is uncharacterized in regards to drainage.

3.2 GEOLOGY

The site is located on the western margin of the Sierra Nevada geomorphic province of California. The western margin of the Sierra Nevada is characterized by northwest trending, fault bounded metamorphic belts. The site is underlain by pre-Jurassic age, metavolcanic rocks of Foothill Mélange-Ophiolite Terrane, and ultramafic rock, which are described as a chaotic assemblage of rocks of various lithologies and ages within the Sierra Nevada foothills (Reference 4).

3.2.1 Subsurface Exploration

Three (3) exploratory test pits, designated GTP-1 through GTP-3, were excavated on 13 June 2022 using a John Deere 410L backhoe with a 24-inch bucket, under the supervision of a Youngdahl Professional Geologist. As the excavation proceeded, the sidewalls were logged using the Standard Practice for Subsurface Characterization of Test Pits for On-site Septic Systems (ASTM D 5921-96), which primarily follows the USDA, Soil Conservation Service (SCS) soil classification system. The test pits were backfilled on the same day with the native material.

The test pits completed for this investigation encountered relatively similar soil conditions. Soils encountered during the exploration included silty LOAM (sil) to depths of between 0.75 and 2.0 feet below ground surface (bgs). Moderately to intensely weathered metavolcanic BEDROCK was encountered from the near surface soil layer to the total depth explored for each test pit. Roots were observed from depths of approximately 0.75 to 2 feet bgs. Groundwater was not encountered during our explorations. A more detailed description of the subsurface conditions encountered is presented graphically on the “Exploratory Test Pit Logs”, Figures 4 through 8.

4.0 PERCOLATION TESTING

Percolation tests for the areas of all three test pits were performed on the 13th through the 14th of June 22. Testing was performed with adherence to *Standards for The Site Evaluation, Design, and Construction of Onsite Wastewater Treatment Systems (OWTS Manual), El Dorado County Department of Environmental Management, 13 May 2018.* Procedures and results for the percolation tests are presented below.

4.1 Testing Procedures

On the 13th of June, an 8-inch diameter electric auger was used to bore four (4) test holes per test area to the depths reported on the percolation test sheets. A 6-inch diameter perforated Schedule 40 PVC percolation stand was placed in each test hole. The stand was seated in a bed of pea gravel that was also placed in the annulus between the soil and PVC to stabilize the

percolation stand. A float integrated with a graduated scale (in inches) was used to measure water-level drops during the percolation test. Each test hole was filled with 12 inches of water to begin the 4-hour presoak.

On the following day, 6 inches of water was added to each boring. The rate of fall was measured for 2 to 4 hours with refilling as necessary.

4.2 Testing Results

Percolation tests were conducted on 14 June September 2022. The percolation rates (averaged for each test area) ranged from 3 minutes per inch (mpi) at GTP-1 to 12.4 mpi at GTP-3. Percolation testing data, including individual test hole rates, individual test hole depths, and averaged test pit rates are presented in Table 1 (below). Percolation test data for each percolation test are included in Appendix A.

Table 1 - Percolation Test Data

Test Pit No.	Testing Date	Test Hole #1 Rate[1] (Depth in Inches)	Test Hole #2 Rate (Depth in Inches)	Test Hole #3 Rate (Depth in Inches)	Test Hole #4 Rate (Depth in Inches)	Average Percolation Rate (mpi)	New Lot Minimum Disposal Area (sq. ft.)
GTP-1	6/14/2022	1.3 (18)	6.3 (36)	4.4 (24)	0.9 (30)	3.2	6,000
GTP-2	6/14/2022	1.2 (24)	8.6 (18)	1.1 (36)	1.1 (30)	3.0	6,000
GTP-3	6/14/2022	30 (24)	5.5 (30)	9.7 (18)	4.8 (18)	12.4	8,000

Notes:
[1] In minutes per inch
mpi - Minutes Per Inch

5.0 CONCLUSIONS AND RECOMMENDATIONS

Each of the three (3) percolation tests were successful. Overall, no significant variations in soil subsurface conditions were found across the site. The weathered bedrock conditions were also similar in terms of rock type, but varied somewhat in degree of induration.

We anticipate that subsurface conditions and percolation characteristics across the site will be consistent with those observed in the current study. While each of the test pits for this study were sited to avoid slope and drainage swale constraints, other constraints and setbacks for onsite disposal sites were not a part of this scope of work, and should be considered for future lot layouts.

Parcel map boundaries for the site are being developed based on numerous constraints, including but not limited to onsite wastewater disposal feasibility. At some point in the feasibility process a definitive map showing potential parcels will be developed. Additional mantle tests and percolation testing will be required by the El Dorado County Department of Environmental Management to validate the parcel layout for a new final map.

Based on our study, the additional exploration should be completed prior to filing of the Final Map to locate suitable disposal areas in order to demonstrate the feasibility of on-site wastewater disposal for lots not covered during the original exploration. Existing onsite wells may need to be destroyed to eliminate adverse setbacks. However, it is our opinion that it is most likely that a significant number of lots using onsite wastewater disposal are feasible for this project.

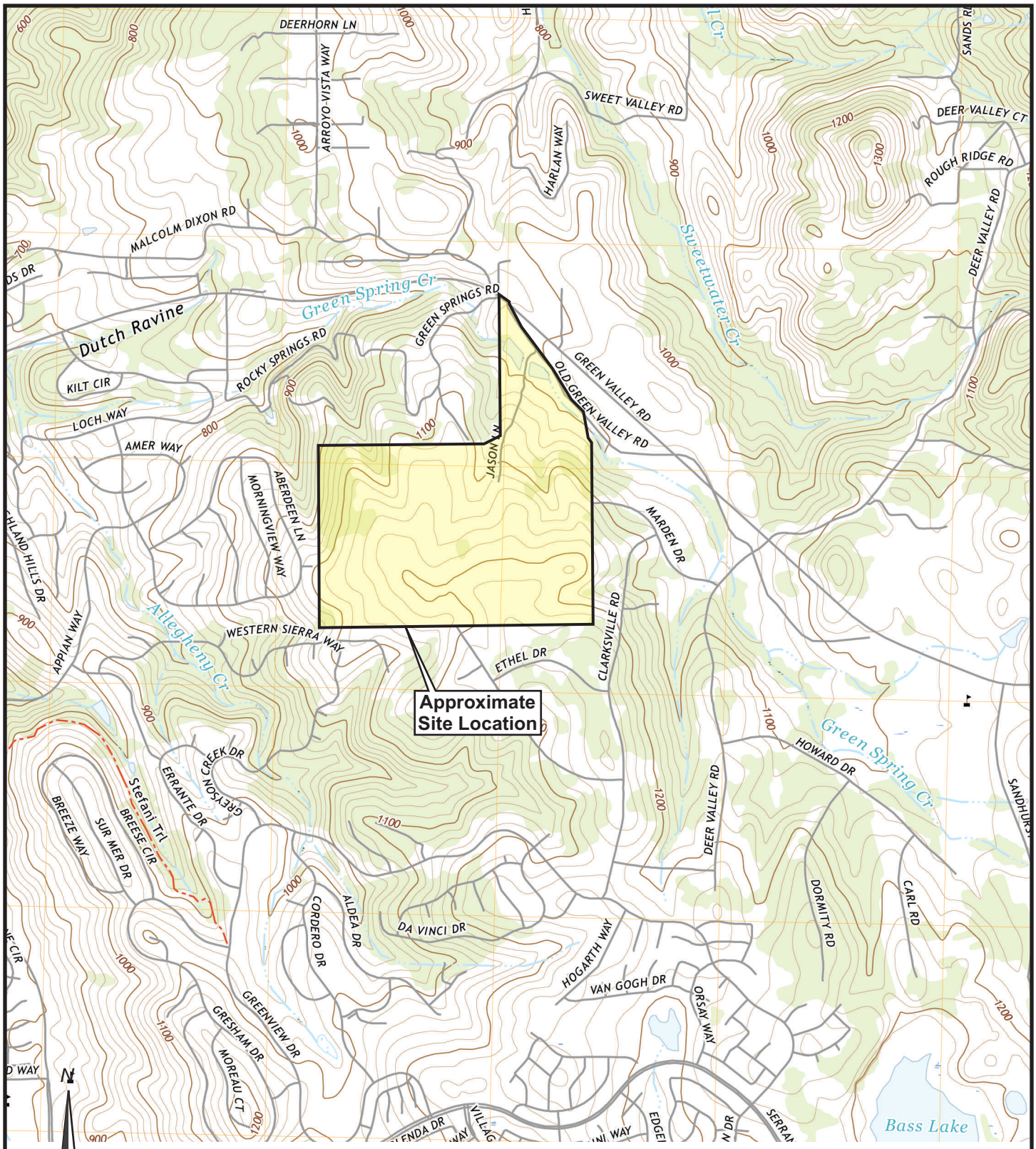
6.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report has been prepared for the exclusive use of Green Valley Road Benefits, LLC, c/o TTLC Management, Inc. for specific application to the Generations at Green Valley project. Youngdahl Consulting Group, Inc. has endeavored to comply with generally accepted environmental geologic practice common to the local area. Youngdahl Consulting Group, Inc. makes no other warranty, express or implied.

As of the present date, the findings of this report are valid for the property studied. With the passage of time, changes in the conditions of a property can occur whether they are due to natural processes or to the works of man on this or adjacent properties. Legislation or the broadening of knowledge may result in changes in applicable standards. Changes outside of our control may cause this report to be invalid, wholly or partially. Therefore, this report should not be relied upon after a period of three years without our review nor should it be used or is it applicable for any properties other than those studied. Note that Youngdahl Consulting Group, Inc. is not responsible for any claims, damages, or liability associated with any other party's interpretation of this report's subsurface data or reuse of this report's subsurface data or environmental geologic analyses without the express written authorization of Youngdahl Consulting Group, Inc.

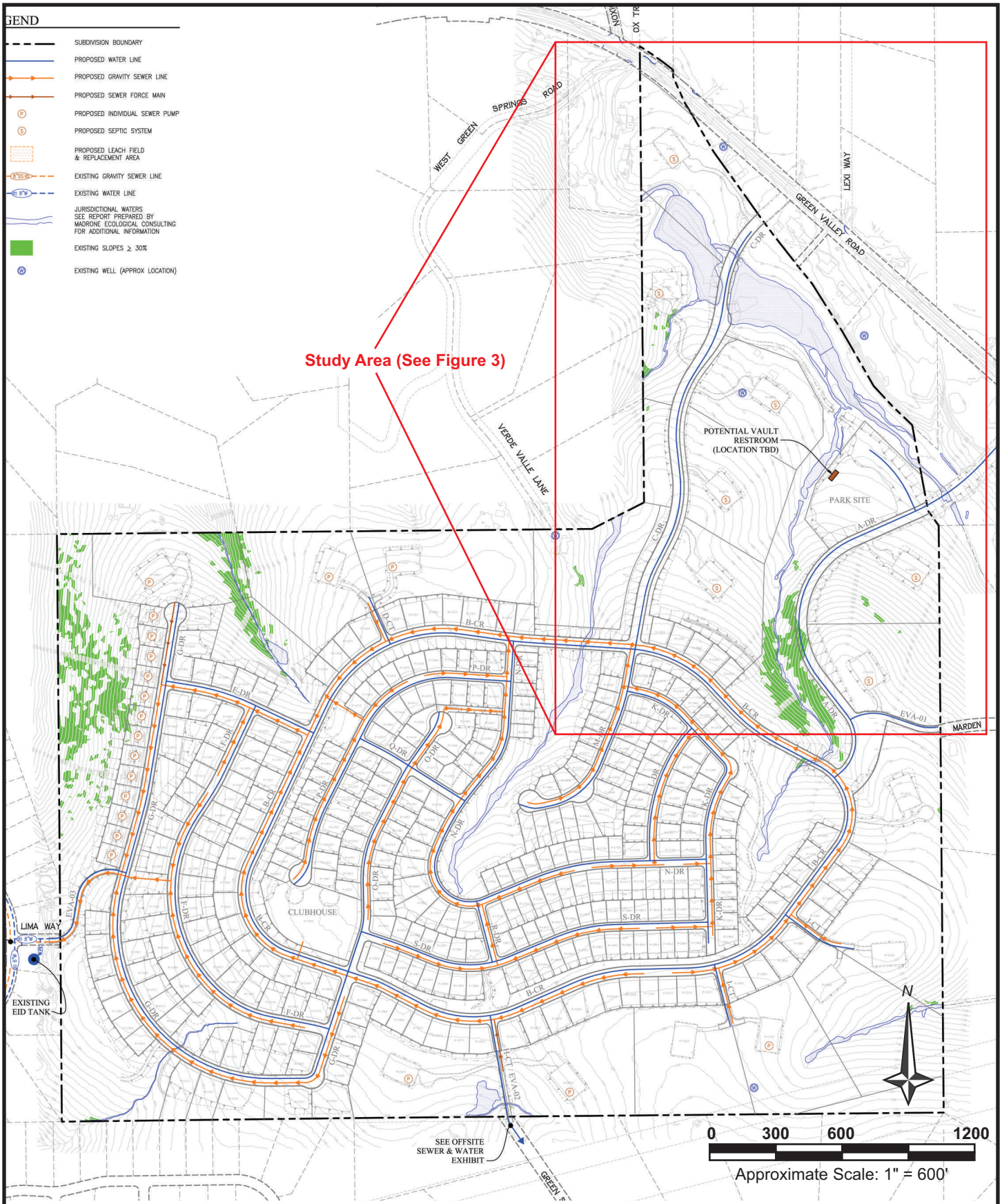
The analyses and recommendations contained in this report are based on limited windows into the subsurface conditions and data obtained from subsurface exploration. The methods used only directly indicate subsurface conditions at the specific locations where testing was performed, only directly at the time they were tested, and only directly to the depths penetrated.

FIGURES



BASE MAP REFERENCE: *U.S.G.S. 7.5 Minute Topographic Series, Clarksville Quadrangle, Dated 2021*

YOUNGDAHL CONSULTING GROUP, INC. ESTABLISHED 1984	Project No.: E11047.003	**VICINITY MAP** **Generations at Green Valley** El Dorado Hills, California	**FIGURE 1**
	July 2022		



REFERENCE: *Onsite Sewer & Water Exhibit, Generations at Green Valley, CTA Engineering Inc., Dated Nov. 2021*

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OVERALL SITE MAP

Generations at Green Valley
El Dorado Hills, California

FIGURE 2

GTP-1 = Approximate Test Pit Locations

1a = Approximate Percolation Test Locations

100' Well Setback

GTP-1

3a

3b

3c

3d

6,000 sqft

100' Setback

100' Setback

C-DR

LEXI WAY

GREEN VALLEY ROAD

50' Drainage Setback

GTP-2

2a

2c

2b

2d

6,000 sqft

100' Well Setback

100' Setback

POTENTIAL VAULT RESTROOM (LOCATION TBD)

PARK SITE

A-DR

C-DR

8,000 sqft

GTP-3

1d

1c

1b

1a

K-DR

B-CR

A-DR

EVA-01

MARDEN

N

0 100 200 400

Approximate Scale: 1" = 200'

REFERENCE: *Onsite Sewer & Water Exhibit, Generations at Green Valley, CTA Engineering Inc., Dated Nov. 2021*

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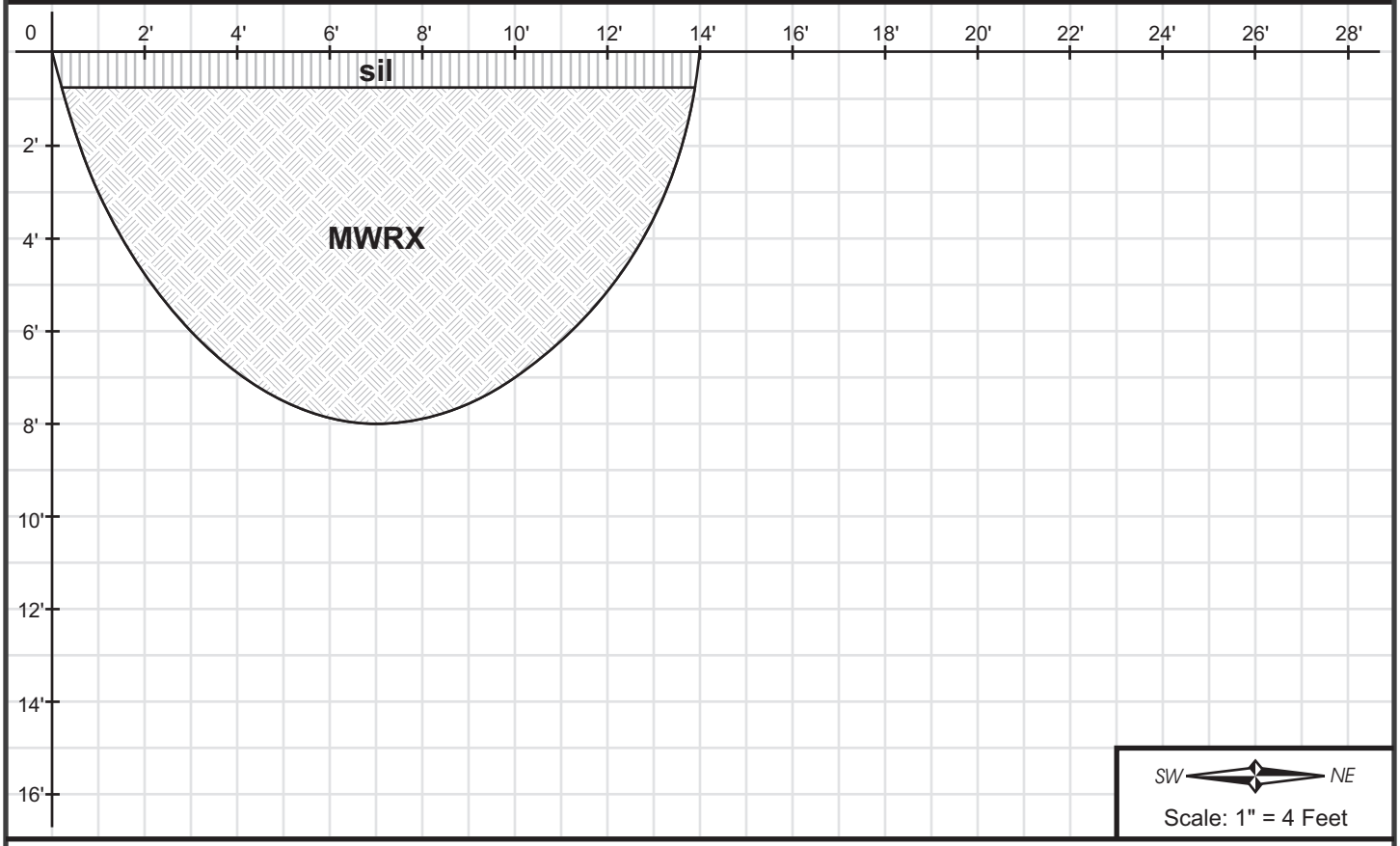
SITE PLAN

Generations at Green Valley
El Dorado Hills, California

FIGURE 3

Logged By: **DCS**	Date: **6 June 2022**	Lat / Lon: **W 38.71490° / W 121.044120°**		Pit No. **GTP-1**
Equipment: **John Deere 410G with 24" Bucket**		Pit Orientation: **72°**	Elevation: **~**	

Depth (Feet)	Geotechnical Description & Unified Soil Classification	Sample	Tests & Comments
@ 0' - 0.75'	**Silt Loam**, 7.5 YR 4/6 Strong Brown, 10% gravel, no redoximorphic features, coarsely granular, many fine interstitial and tubular pores, very friable, non-plastic, non-sticky, few fine roots, abrupt irregular boundary, dry		
@ 0.75' - 8'	**Moderately weathered rock,** Gray brown		
	Test pit terminated at 8' No free groundwater encountered No caving noted		



Note: The test pit log indicates subsurface conditions only at the specific location and time noted. Subsurface conditions, including groundwater levels, at other locations of the subject site may differ significantly from conditions which, in the opinion of Youngdahl Consulting Group, Inc., exist at the sampling locations, Note, too, that the passage of time may affect conditions at the sampling locations.

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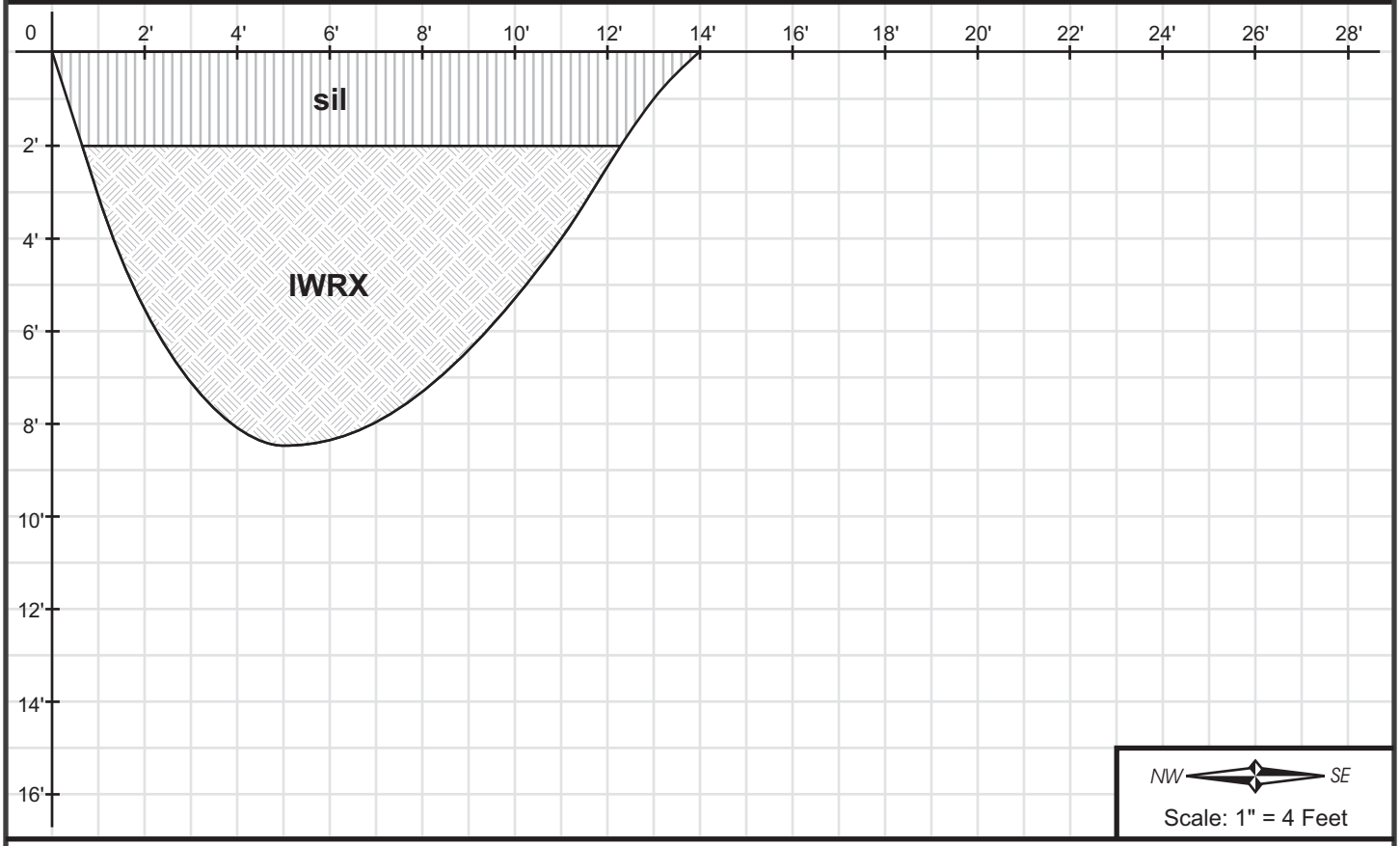
EXPLORATORY TEST PIT LOG

Generations at Green Valley
El Dorado Hills, California

FIGURE 4

Logged By: **DCS**	Date: **6 June 2022**	Lat / Lon: **W 38.709010° / W 121.042790°**		Pit No. **GTP-2**
Equipment: **John Deere 410G with 24" Bucket**		Pit Orientation: **140°**	Elevation: **~**	

Depth (Feet)	Geotechnical Description & Unified Soil Classification	Sample	Tests & Comments
@ 0' - 2'	**Silt Loam**, 7.5 YR 4/6 Strong Brown, 10% gravel, no redoximorphic features, medium blocky, many medium to coarse interstitial and tubular pores, very friable, non-plastic, non-sticky, few fine roots, abrupt irregular boundary, dry		
@ 2' - 8.5'	Intensely weathered rock, light gray, 100% stone, few red redoximorphic concentrations, massive, no soil pores, firm, non-plastic, non-sticky, no roots, dry		
	Test pit terminated at 8.5' No free groundwater encountered No caving noted		



Note: The test pit log indicates subsurface conditions only at the specific location and time noted. Subsurface conditions, including groundwater levels, at other locations of the subject site may differ significantly from conditions which, in the opinion of Youngdahl Consulting Group, Inc., exist at the sampling locations, Note, too, that the passage of time may affect conditions at the sampling locations.

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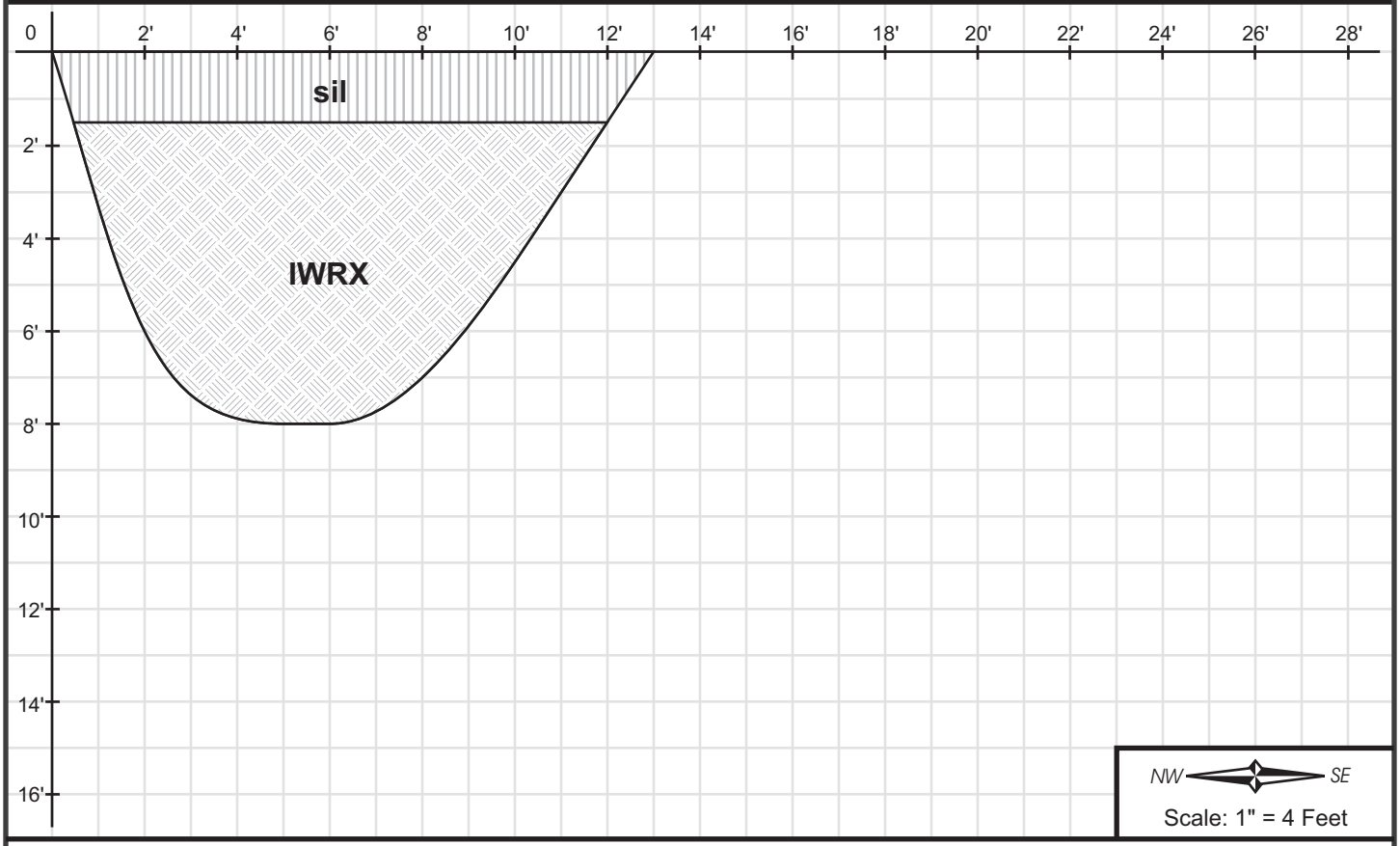
EXPLORATORY TEST PIT LOG

Generations at Green Valley
El Dorado Hills, California

FIGURE 5

Logged By: **DCS**	Date: **6 June 2022**	Lat / Lon: **W 38.705590° / W 121.041330°**		Pit No. **GTP-3**
Equipment: **John Deere 410G with 24" Bucket**		Pit Orientation: **147°**	Elevation: **~**	

Depth (Feet)	Geotechnical Description & Unified Soil Classification	Sample	Tests & Comments
@ 0' - 1.5'	**Silt Loam**, 7.5 YR 4/6 Strong Brown, no redoximorphic features, medium blocky, many medium to coarse interstitial and tubular pores, very friable, non-plastic, non-sticky, few fine roots, diffuse irregular boundary, dry.		
@ 1.5' - 8'	**Intensely weather rock**, red brown, 100% stone		
	Test pit terminated at 8' No free groundwater encountered No caving noted		



Note: The test pit log indicates subsurface conditions only at the specific location and time noted. Subsurface conditions, including groundwater levels, at other locations of the subject site may differ significantly from conditions which, in the opinion of Youngdahl Consulting Group, Inc., exist at the sampling locations, Note, too, that the passage of time may affect conditions at the sampling locations.

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EXPLORATORY TEST PIT LOG

Generations at Green Valley
El Dorado Hills, California

FIGURE 6

Consultant: **YCG** | Date: **6 June 2022** | Parent Rock Type: [V] G MS A Other

SOIL PIT # 1 — *1ST Horizon* Depth: *0'* to *0.75'*
Slope: *2* **% Aspect:** *FLAT*
Texture: s ls sl sc scl l c cl sic sicl [sil] si DRX IWRX MWRX DG
Rock Fragments: gravel ~ % cobble ~ % stone ~ %
Color: 7.5 YR 4/6
Redoxymorphic Features: [none] few common many
RC color ~ RD color ~ RM color ~
Structure: [gran] platy block prism f m [c] single grain massive
Soil Pores: none few common [many] [f] m c [inters] tubular
Moist Consistence: l [vfr] fr f vf ef
Plasticity: [np] sp mp vp **Stickiness:** ns ss ms vs
Roots: none [few] common many vf [f] m c
Boundary Distinctness: [a] c g d **Topography:** s w [i] b
Moisture: [dry] moist wet saturated
NOTES: ~
Same as SOIL PIT # **Horizon #**

SOIL PIT # 2 — *1ST Horizon* Depth: *0'* to *2'*
Slope: *4* **% Aspect:** *FLAT*
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel *5* % cobble ~ % stone ~ %
Color: 7.5 YR 4/6
Redoxymorphic Features: [none] few common many
RC color ~ RD color ~ RM color ~
Structure: gran platy [block] prism f [m] c single grain massive
Soil Pores: none few common [many] f [m c] [inters] tubular
Moist Consistence: l [vfr] fr f vf ef
Plasticity: [np] sp mp vp **Stickiness:** [ns] ss ms vs
Roots: none [few] common many [vf] f m c
Boundary Distinctness: [a] c g d **Topography:** s w [i] b
Moisture: [dry] moist wet saturated
NOTES: ~
Same as SOIL PIT # **Horizon #**

2nd Horizon Depth: *0.75'* to *8'*
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX [MWRX] DG
Rock Fragments: gravel ~ % cobble ~ % stone *100* %
Color: Grey brown
Redoxymorphic Features: none few common many
RC color ~ RD color ~ RM color ~
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp **Stickiness:** ns ss ms vs
Roots: none few common many vf f m c
Boundary Distinctness: a c g d **Topography:** s w i b
Moisture: dry moist wet saturated
NOTES:
Same as SOIL PIT # **Horizon #**

2nd Horizon Depth: *2'* to *8.5'*
Texture: s ls sl sc scl l c cl sic sicl sil si DRX [IWRX] MWRX DG
Rock Fragments: gravel ~ % cobble ~ % stone *100* %
Color: Light Grey
Redoxymorphic Features: none [few] common many
RC color *Red* RD color ~ RM color ~
Structure: gran platy block prism f m c single grain [massive]
Soil Pores: [none] few common many f m c inters tubular
Moist Consistence: l vfr fr [f] vf ef
Plasticity: [np] sp mp vp **Stickiness:** [ns] ss ms vs
Roots: [none] few common many vf f m c
Boundary Distinctness: a c g d **Topography:** s w i b
Moisture: [dry] moist wet saturated
NOTES:
Same as SOIL PIT # **Horizon #**

3rd Horizon Depth: ~ to ~
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel ~ % cobble ~ % stone ~ %
Color: ~
Redoxymorphic Features: none few common many
RC color ~ RD color ~ RM color ~
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp **Stickiness:** ns ss ms vs
Roots: none few common many vf f m c
Boundary Distinctness: a c g d **Topography:** s w i b
Moisture: dry moist wet saturated
NOTES: ~
Same as SOIL PIT # **Horizon #**

3rd Horizon Depth: ~ to ~
~
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel ~ % cobble ~ % stone ~ %
Color: ~
Redoxymorphic Features: none few common many
RC color ~ RD color ~ RM color ~
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp **Stickiness:** ns ss ms vs
Roots: none few common many vf f m c
Boundary Distinctness: a c g d **Topography:** s w i b
Moisture: dry moist wet saturated
NOTES: ~
Same as SOIL PIT # **Horizon #**

4th Horizon Depth: ~ to ~
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel ~ % cobble ~ % stone ~ %
Color: ~
Redoxymorphic Features: none few common many
RC color ~ RD color ~ RM color ~
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp **Stickiness:** ns ss ms vs
Roots: none few common many vf f m c
Boundary Distinctness: a c g d **Topography:** s w i b
Moisture: dry moist wet saturated
NOTES: ~
Same as SOIL PIT # **Horizon #**

4th Horizon Depth: ~ to ~
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel ~ % cobble ~ % stone ~ %
Color: ~
Redoxymorphic Features: none few common many
RC color ~ RD color ~ RM color ~
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp **Stickiness:** ns ss ms vs
Roots: none few common many vf f m c
Boundary Distinctness: a c g d **Topography:** s w i b
Moisture: dry moist wet saturated
NOTES: ~
Same as SOIL PIT # **Horizon #**

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EXPLORATORY SOIL PIT LOG

Generations at Green Valley
El Dorado Hills, California

FIGURE 7

Consultant: **YCG** | Date: **6 June 2022** | Parent Rock Type: [V] G MS A Other

SOIL PIT # 3 — ***1st Horizon*** **Depth:** 0' to 1.5'
Slope: 20 **% Aspect:** FLAT
Texture: s ls sl sc scl l c cl sic sicl [sil] si DRX IWRX MWRX DG
Rock Fragments: gravel ~ % cobble ~ % stone ~ %
Color: 7.5 YR 4/6
Redoxymorphic Features: [none] few common many
RC color ~ RD color ~ RM color ~
Structure: gran platy [block] prism f [m] c single grain massive
Soil Pores: none few common [many] f [m c] inters tubular
Moist Consistence: l [vfr] fr f vf ef
Plasticity: [np] sp mp vp **Stickiness:** ns ss ms vs
Roots: none [few] common many vf [f] m c
Boundary Distinctness: a c g [d] **Topography:** s w [i] b
Moisture: [dry] moist wet saturated
NOTES: ~
Same as SOIL PIT # ***Horizon #***

SOIL PIT # ***1st Horizon*** **Depth:** _____ to _____
Slope: _____ **% Aspect:** _____
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel _____ % cobble ~ % stone ~ %
Color:
Redoxymorphic Features: none few common many
RC color ~ RD color ~ RM color ~
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp **Stickiness:** ns ss ms vs
Roots: none few common many vf f m c
Boundary Distinctness: a c g d **Topography:** s w i b
Moisture: dry moist wet saturated
NOTES: ~
Same as SOIL PIT # ***Horizon #***

2nd Horizon **Depth:** 1.5' to 8'
Texture: s ls sl sc scl l c cl sic sicl sil si DRX [IWRX] MWRX DG
Rock Fragments: gravel ~ % cobble ~ % stone 100 %
Color: Light brown
Redoxymorphic Features: [none] few common many
RC color ~ RD color ~ RM color ~
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp **Stickiness:** ns ss ms vs
Roots: none few common many vf f m c
Boundary Distinctness: a c g d **Topography:** s w i b
Moisture: dry moist wet saturated
NOTES:
Same as SOIL PIT # ***Horizon #***

2nd Horizon **Depth:** _____ to _____
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel ~ % cobble ~ % stone _____ %
Color:
Redoxymorphic Features: none few common many
RC color _____ RD color ~ RM color ~
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp **Stickiness:** ns ss ms vs
Roots: none few common many vf f m c
Boundary Distinctness: a c g d **Topography:** s w i b
Moisture: dry moist wet saturated
NOTES:
Same as SOIL PIT # ***Horizon #***

3rd Horizon **Depth:** ~ to ~
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel ~ % cobble ~ % stone ~ %
Color: ~
Redoxymorphic Features: none few common many
RC color ~ RD color ~ RM color ~
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp **Stickiness:** ns ss ms vs
Roots: none few common many vf f m c
Boundary Distinctness: a c g d **Topography:** s w i b
Moisture: dry moist wet saturated
NOTES: ~
Same as SOIL PIT # ***Horizon #***

3rd Horizon **Depth:** ~ to ~
~
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel ~ % cobble ~ % stone ~ %
Color: ~
Redoxymorphic Features: none few common many
RC color ~ RD color ~ RM color ~
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp **Stickiness:** ns ss ms vs
Roots: none few common many vf f m c
Boundary Distinctness: a c g d **Topography:** s w i b
Moisture: dry moist wet saturated
NOTES: ~
Same as SOIL PIT # ***Horizon #***

4th Horizon **Depth:** ~ to ~
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel ~ % cobble ~ % stone ~ %
Color: ~
Redoxymorphic Features: none few common many
RC color ~ RD color ~ RM color ~
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp **Stickiness:** ns ss ms vs
Roots: none few common many vf f m c
Boundary Distinctness: a c g d **Topography:** s w i b
Moisture: dry moist wet saturated
NOTES: ~
Same as SOIL PIT # ***Horizon #***

4th Horizon **Depth:** ~ to ~
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel ~ % cobble ~ % stone ~ %
Color: ~
Redoxymorphic Features: none few common many
RC color ~ RD color ~ RM color ~
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp **Stickiness:** ns ss ms vs
Roots: none few common many vf f m c
Boundary Distinctness: a c g d **Topography:** s w i b
Moisture: dry moist wet saturated
NOTES: ~
Same as SOIL PIT # ***Horizon #***

YOUNGDAHL CONSULTING GROUP, INC. ESTABLISHED 1984

Project No.: E11047.003

July 2022

EXPLORATORY SOIL PIT LOG

Generations at Green Valley
El Dorado Hills, California

FIGURE 8

APPENDIX A

Results of Percolation Tests

Percolation Test Data Sheet

Project No. E11047.003
Test Pit No. GTP-1
Date: 6/14/2022
Testhole No.: 1A **Sheet No.:** 1 of 3
GPS 38.70552 -121.04126 **Testhole Depth:** 1.5' **Width:** 8"

Start Time	End Time	Elapsed Time	Water-level Start (inches)	Water-level End (inches)	Difference in Water Level (inches)
9:00:00 AM	9:30:00 AM	0:30	7.1	0	7.10
9:30:00 AM	10:00:00 AM	0:30	7.5	0	7.50
10:00:00 AM	10:10:00 AM	0:10	7.2	0	7.20
10:10:00 AM	10:20:00 AM	0:10	7.2	0	7.20
10:20:00 AM	10:30:00 AM	0:10	7.4	0	7.40
10:30:00 AM	10:40:00 AM	0:10	7.1	0	7.10
10:40:00 AM	10:50:00 AM	0:10	7	0	7.00
10:50:00 AM	11:00:00 AM	0:10	7.5	0	7.50

Testhole No.: 1B
GPS 38.70549 -121.04111 **Testhole Depth:** 3' **Width:** 8"

Start Time	End Time	Elapsed Time	Water-level Start (inches)	Water-level End (inches)	Difference in Water Level (inches)
9:00:00 AM	9:30:00 AM	0:30	12	0	12.00
9:30:00 AM	10:00:00 AM	0:30	12.1	0	12.10
10:00:00 AM	10:10:00 AM	0:10	12.4	7.7	4.70
10:10:00 AM	10:20:00 AM	0:10	6.7	4.6	2.10
10:20:00 AM	10:30:00 AM	0:10	9.3	7	2.30
10:30:00 AM	10:40:00 AM	0:10	7	5.1	1.90
10:40:00 AM	10:50:00 AM	0:10	7.4	5.8	1.60
10:50:00 AM	11:00:00 AM	0:10	7.9	6.3	1.60

Testhole No.: 1C
GPS 38.70557 -121.04098 **Testhole Depth:** 2' **Width:** 8"

Start Time	End Time	Elapsed Time	Water-level Start (inches)	Water-level End (inches)	Difference in Water Level (inches)
9:00:00 AM	9:30:00 AM	0:30	7.4	0	7.40
9:30:00 AM	10:00:00 AM	0:30	7.2	0	7.20
10:00:00 AM	10:10:00 AM	0:10	7.6	4.2	3.40
10:10:00 AM	10:20:00 AM	0:10	9	5.6	3.40
10:20:00 AM	10:30:00 AM	0:10	9	6	3.00
10:30:00 AM	10:40:00 AM	0:10	8.5	5.7	2.80
10:40:00 AM	10:50:00 AM	0:10	7.3	4.9	2.40
10:50:00 AM	11:00:00 AM	0:10	7.7	5.4	2.30

Testhole No.: 1D
GPS 38.70567 -121.04089 **Testhole Depth:** 2.5' **Width:** 8"

Start Time	End Time	Elapsed Time	Water-level Start (inches)	Water-level End (inches)	Difference in Water Level (inches)
9:00:00 AM	9:30:00 AM	0:30	11	0	11.00
9:30:00 AM	10:00:00 AM	0:30	10.8	0	10.80
10:00:00 AM	10:10:00 AM	0:10	9.3	0	9.30
10:10:00 AM	10:20:00 AM	0:10	12	0	12.00
10:20:00 AM	10:30:00 AM	0:10	11.8	0	11.80
10:30:00 AM	10:40:00 AM	0:10	11.2	0	11.20
10:40:00 AM	10:50:00 AM	0:10	10.9	0	10.90
10:50:00 AM	11:00:00 AM	0:10	11.5	0	11.50

Percolation Test Data Sheet

Project No. E11047.003
Test Pit No. GTP-2
Date: 6/14/2022
Testhole No.: 2A **Sheet No.:** 2 of 3
GPS 38.70907 -121.04295 **Testhole Depth:** 2' **Width:** 8"

Start Time	End Time	Elapsed Time	Water-level Start (inches)	Water-level End (inches)	Difference in Water Level (inches)
11:15:00 AM	11:45:00 AM	0:30	9.3	0	9.30
11:45:00 AM	12:15:00 PM	0:30	9.1	0	9.10
12:15:00 PM	12:25:00 PM	0:10	9	0	9.00
12:25:00 PM	12:35:00 PM	0:10	8.9	0	8.90
12:35:00 PM	12:45:00 PM	0:10	8.6	0	8.60
12:45:00 PM	12:55:00 PM	0:10	9.2	0	9.20
12:55:00 PM	1:05:00 PM	0:10	8.8	0	8.80
1:05:00 PM	1:15:00 PM	0:10	8.7	0	8.70

Testhole No.: 2B
GPS 38.709 -121.04284 **Testhole Depth:** 1.5' **Width:** 8"

Start Time	End Time	Elapsed Time	Water-level Start (inches)	Water-level End (inches)	Difference in Water Level (inches)
11:15:00 AM	11:45:00 AM	0:30	9	0	9.00
11:45:00 AM	12:15:00 PM	0:30	8	2.1	5.90
12:15:00 PM	12:45:00 PM	0:30	6.4	1.7	4.70
12:45:00 PM	1:15:00 PM	0:30	8.3	4.1	4.20
1:15:00 PM	1:45:00 PM	0:30	8.6	4.7	3.90
1:45:00 PM	2:15:00 PM	0:30	8.4	4.8	3.60
2:15:00 PM	2:45:00 PM	0:30	7.8	4.4	3.40
2:45:00 PM	3:15:00 PM	0:30	8	4.5	3.50

Testhole No.: 2C
GPS 38.70893 -121.04274 **Testhole Depth:** 3' **Width:** 8"

Start Time	End Time	Elapsed Time	Water-level Start (inches)	Water-level End (inches)	Difference in Water Level (inches)
11:15:00 AM	11:45:00 AM	0:30	9	0	9.00
11:45:00 AM	12:15:00 PM	0:30	9.4	0	9.40
12:15:00 PM	12:25:00 PM	0:10	9.1	0	9.10
12:25:00 PM	12:35:00 PM	0:10	9.1	0	9.10
12:35:00 PM	12:45:00 PM	0:10	8.5	0	8.50
12:45:00 PM	12:55:00 PM	0:10	8.8	0	8.80
12:55:00 PM	1:05:00 PM	0:10	9.5	0	9.50
1:05:00 PM	1:15:00 PM	0:10	9.3	0	9.30

Testhole No.: 2D
GPS 38.70886 -121.04264 **Testhole Depth:** 2.5' **Width:** 8"

Start Time	End Time	Elapsed Time	Water-level Start (inches)	Water-level End (inches)	Difference in Water Level (inches)
11:15:00 AM	11:45:00 AM	0:30	9.5	0	9.50
11:45:00 AM	12:15:00 PM	0:30	9.7	0	9.70
12:15:00 PM	12:25:00 PM	0:10	9.1	0	9.10
12:25:00 PM	12:35:00 PM	0:10	9.3	0	9.30
12:35:00 PM	12:45:00 PM	0:10	9.6	0	9.60
12:45:00 PM	12:55:00 PM	0:10	9.1	0	9.10
12:55:00 PM	1:05:00 PM	0:10	9.2	0	9.20
1:05:00 PM	1:15:00 PM	0:10	9.5	0	9.50

Percolation Test Data Sheet

Project No. E11047.003
Test Pit No. GTP-3
Date: 6/14/2022
Testhole No.: 3A **Sheet No.:** 3 of 3
GPS 38.71163 -121.04404 **Testhole Depth:** 2' **Width:** 8"

Start Time	End Time	Elapsed Time	Water-level Start (inches)	Water-level End (inches)	Difference in Water Level (inches)
3:30:00 PM	4:00:00 PM	0:30	9	7.5	1.50
4:00:00 PM	4:30:00 PM	0:30	7.5	5.9	1.60
4:30:00 PM	5:00:00 PM	0:30	5.9	4.3	1.60
5:00:00 PM	5:30:00 PM	0:30	7.3	6.1	1.20
5:30:00 PM	6:00:00 PM	0:30	6.1	4.9	1.20
6:00:00 PM	6:30:00 PM	0:30	7.4	6.4	1.00
6:30:00 PM	7:00:00 PM	0:30	6.4	5.5	0.90
7:00:00 PM	7:30:00 PM	0:30	5.5	4.5	1.00

Testhole No.: 3B
GPS 38.71156 -121.04396 **Testhole Depth:** 2.5' **Width:** 8"

Start Time	End Time	Elapsed Time	Water-level Start (inches)	Water-level End (inches)	Difference in Water Level (inches)
3:30:00 PM	4:00:00 PM	0:30	9.6	2.5	7.10
4:00:00 PM	4:30:00 PM	0:30	10.5	3.5	7.00
4:30:00 PM	5:00:00 PM	0:30	10.5	4	6.50
5:00:00 PM	5:30:00 PM	0:30	9.7	4.1	5.60
5:30:00 PM	6:00:00 PM	0:30	9.5	4	5.50
6:00:00 PM	6:30:00 PM	0:30	9.3	3.8	5.50
6:30:00 PM	7:00:00 PM	0:30	9	3.6	5.40
7:00:00 PM	7:30:00 PM	0:30	9.8	4.3	5.50

Testhole No.: 3C
GPS 38.7115 -121.0439 **Testhole Depth:** 1.5' **Width:** 8"

Start Time	End Time	Elapsed Time	Water-level Start (inches)	Water-level End (inches)	Difference in Water Level (inches)
3:30:00 PM	4:00:00 PM	0:30	8.2	3.3	4.90
4:00:00 PM	4:30:00 PM	0:30	8.3	4.4	3.90
4:30:00 PM	5:00:00 PM	0:30	7.9	4.3	3.60
5:00:00 PM	5:30:00 PM	0:30	6.2	2.9	3.30
5:30:00 PM	6:00:00 PM	0:30	6.8	3.6	3.20
6:00:00 PM	6:30:00 PM	0:30	7.1	4	3.10
6:30:00 PM	7:00:00 PM	0:30	7	3.8	3.20
7:00:00 PM	7:30:00 PM	0:30	6.5	3.4	3.10

Testhole No.: 3D
GPS 38.71142 -121.04383 **Testhole Depth:** 1.5' **Width:** 8"

Start Time	End Time	Elapsed Time	Water-level Start (inches)	Water-level End (inches)	Difference in Water Level (inches)
3:30:00 PM	4:00:00 PM	0:30	6.5	0	6.50
4:00:00 PM	4:30:00 PM	0:30	6.8	0	6.80
4:30:00 PM	5:00:00 PM	0:30	6.4	0	6.40
5:00:00 PM	5:30:00 PM	0:30	6.3	0	6.30
5:30:00 PM	6:00:00 PM	0:30	6.6	0	6.60
6:00:00 PM	6:30:00 PM	0:30	6	0	6.00
6:30:00 PM	7:00:00 PM	0:30	6.4	0	6.40
7:00:00 PM	7:30:00 PM	0:30	6.2	0	6.20

Appendix B
Custom Soil Resource Report for
El Dorado Area, California

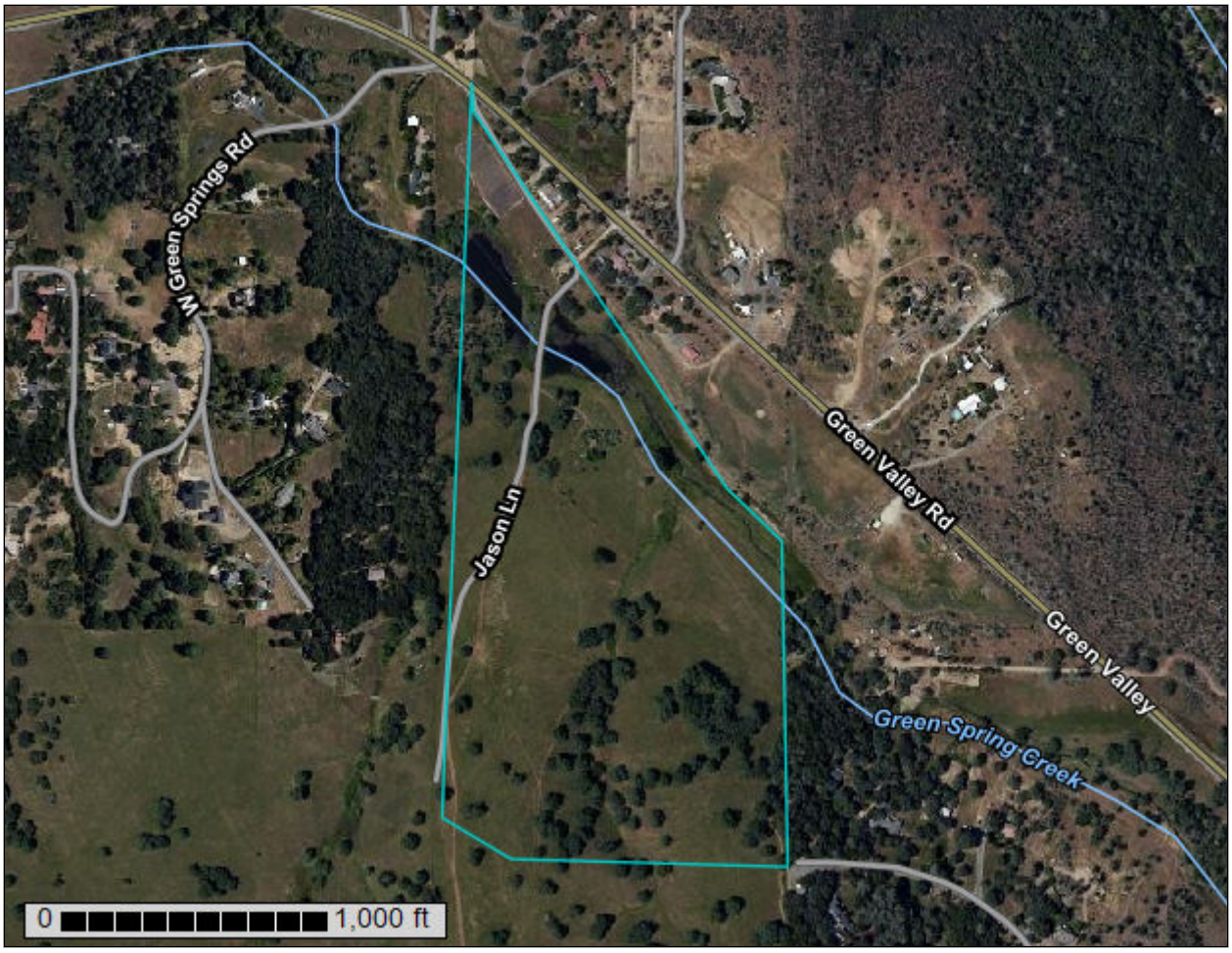
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for El Dorado Area, California



June 27, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

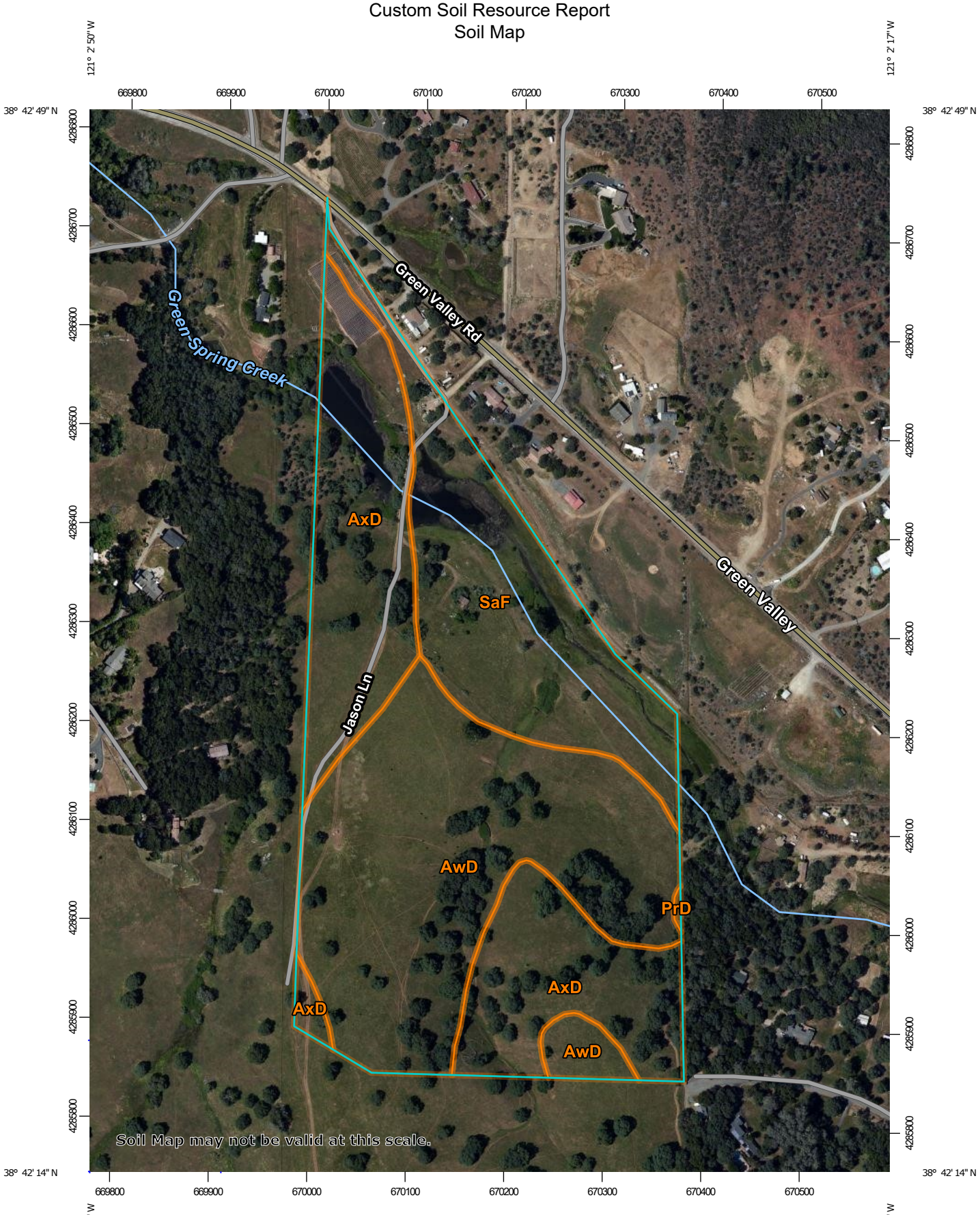
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:5,230 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Dorado Area, California
Survey Area Data: Version 13, Sep 3, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 8, 2019—May 12, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AwD	Auburn silt loam, 2 to 30 percent slopes	23.9	42.1%
AxD	Auburn very rocky silt loam, 2 to 30 percent slopes	18.9	33.4%
PrD	Placer diggings	0.1	0.1%
SaF	Serpentine rock land	13.8	24.4%
Totals for Area of Interest		**56.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

El Dorado Area, California

AwD—Auburn silt loam, 2 to 30 percent slopes

Map Unit Setting

National map unit symbol: hhyq
Elevation: 120 to 3,000 feet
Mean annual precipitation: 20 to 40 inches
Mean annual air temperature: 55 to 63 degrees F
Frost-free period: 175 to 275 days
Farmland classification: Not prime farmland

Map Unit Composition

Auburn and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Auburn

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from basic igneous rock and/or basic residuum weathered from metamorphic rock

Typical profile

H1 - 0 to 14 inches: silt loam
H2 - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 2 to 30 percent
Depth to restrictive feature: 14 to 18 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: F018XI200CA - Low Elevation Foothills 18-25 PZ
Hydric soil rating: No

Minor Components

Argonaut

Percent of map unit: 4 percent
Landform: Ridges

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Perkins

Percent of map unit: 4 percent
Hydric soil rating: No

Sobrante

Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Rock outcrop

Percent of map unit: 3 percent
Hydric soil rating: No

AxD—Auburn very rocky silt loam, 2 to 30 percent slopes

Map Unit Setting

National map unit symbol: hhyr
Elevation: 120 to 3,000 feet
Mean annual precipitation: 20 to 40 inches
Mean annual air temperature: 55 to 63 degrees F
Frost-free period: 175 to 275 days
Farmland classification: Not prime farmland

Map Unit Composition

Auburn and similar soils: 75 percent
Rock outcrop: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Auburn

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from basic igneous rock and/or basic residuum weathered from metamorphic rock

Typical profile

H1 - 0 to 14 inches: silt loam
H2 - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 2 to 30 percent
Depth to restrictive feature: 14 to 18 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R018XD076CA - SHALLOW LOAMY
Hydric soil rating: No

Description of Rock Outcrop

Setting

Parent material: Metamorphic rock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Argonaut

Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Boomer

Percent of map unit: 3 percent
Landform: Mountain slopes, hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Sobrante

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Unnamed
Percent of map unit: 2 percent
Hydric soil rating: No

PrD—Placer diggings

Map Unit Composition
Placer diggings: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Placer Diggings

Setting
Parent material: Alluvium derived from mixed sources

Typical profile
H1 - 0 to 60 inches: fine sandy loam, cobbles

Properties and qualities
Slope: 2 to 15 percent
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Frequency of flooding: OccasionalNone
Available water supply, 0 to 60 inches: Very low (about 1.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Ecological site: R018XD084CA - PLACER DIGGINGS
Hydric soil rating: No

Minor Components

Unnamed
Percent of map unit: 10 percent
Landform: Channels
Hydric soil rating: Yes

SaF—Serpentine rock land

Map Unit Setting

National map unit symbol: hj15
Elevation: 650 to 4,000 feet
Mean annual precipitation: 8 to 15 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 110 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Serpentine rock land: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Serpentine Rock Land

Setting

Parent material: Serpentinite

Typical profile

H1 - 0 to 4 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 70 percent
Depth to restrictive feature: 0 to 4 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to very high (0.01 to 19.98 in/hr)
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 10 percent
Hydric soil rating: No

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