

Wyoming Estates Preliminary Plan

Filings #1 and #2

Compilation of Soils, Geology, and OWTS

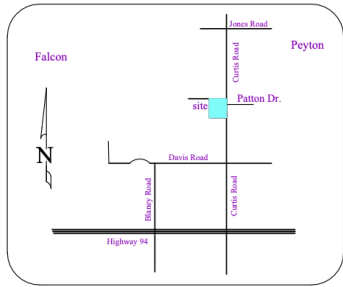
The following reports have been compiled from engineers evaluating the soils and geology for Wyoming Estates Filing 1 and 2 (a minor subdivision and preliminary plan). The project site was originally 3050 Curtis Rd, a 40 acre site which was approved for a minor subdivision called Wyoming Estates in January 2022. The additional information provided here is the soils tests for Onsite Wastewater Treatment Systems for Filing #2 (Preliminary Plan), which is comprised of the final 2 lots (a re-plat of Filing 1, lot 4). See the map on the following page.

The original soils and geology report from the minor subdivision is included here in the first 45 documents (pages 3-48). That report depicts lot 4, a 21 acre parcel, and provides general soil info for that parcel. The additional soils reports provided here (pages 48-59) are specific to the individual lots being proposed in this Preliminary Plan.

Wyoming Estates Filing No. 2 - Preliminary



A Replat of Lots 1 and 4 Wyoming Estates as recorded under reception no. 221714871, dated December, 14, 2021

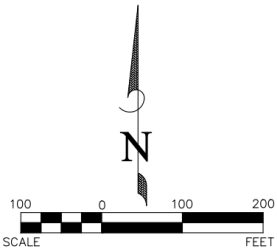
The Southeast Quarter of the Northeast Quarter of Section 33, Township 13 South, Range 64 West of the 6th P.M., El Paso County, Colorado



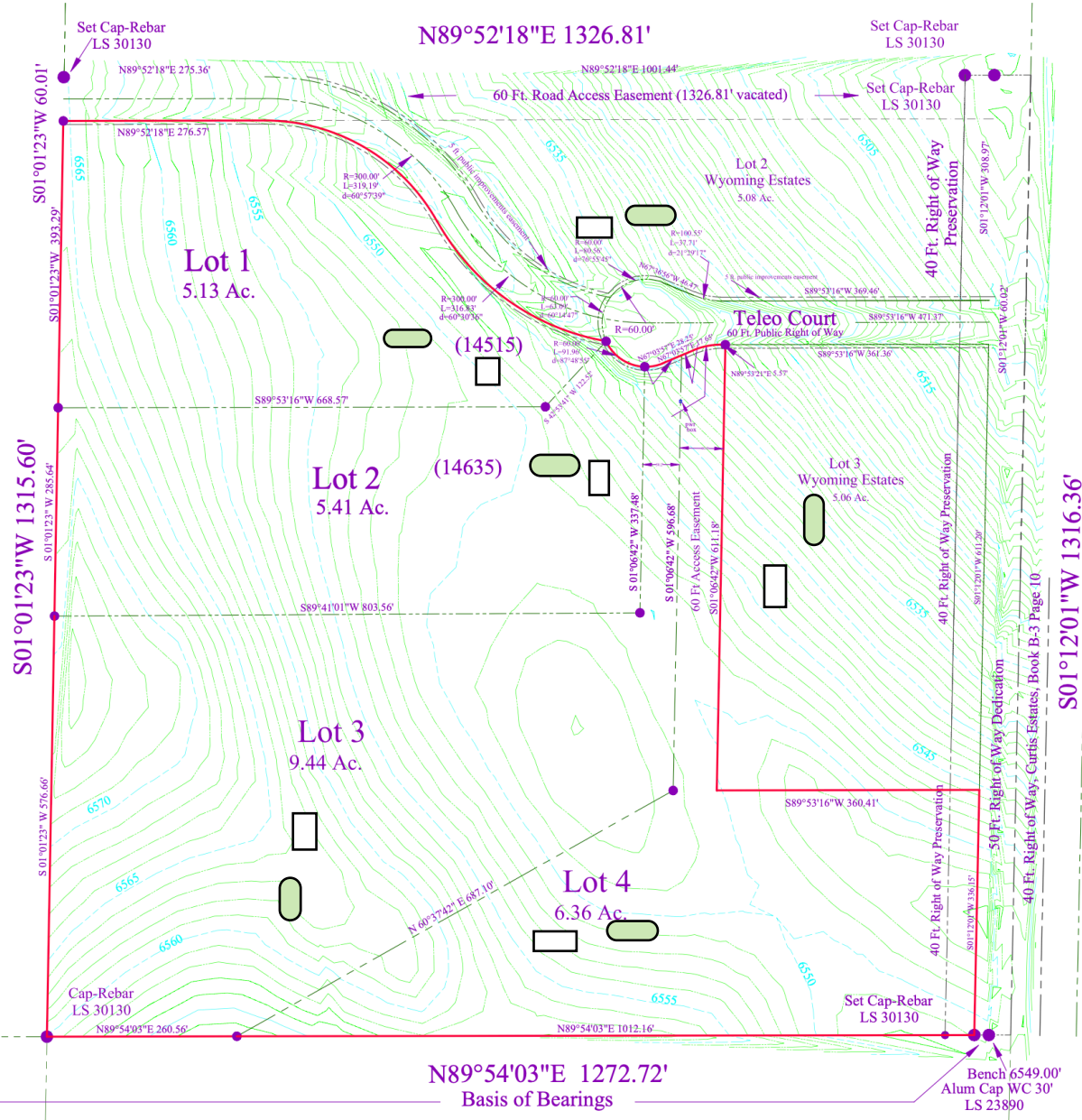
VICINITY MAP
Not to Scale

You are required to show alternate OWTS locations for each lot in addition to what is depicted here.

-  Existing/ proposed house location
-  Existing/ proposed OWTS location



Scale 1 inch = 100 feet
Units of Measure: U.S. Survey Foot

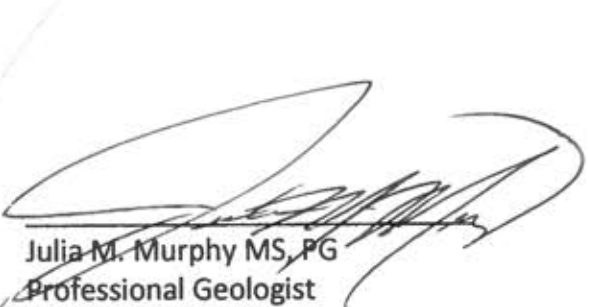


Curtis Road
90 Ft. Right of Way

Soils and Geology
And Wastewater Treatment System
Evaluation

For
Wyoming Estates
3050 N. Curtis Road
Final

October 5, 2020



Julia M. Murphy MS, PG
Professional Geologist



Groundwater Investigations LLC
11590 Black Forest Road Ste 15
Colorado Springs, CO 80908
(719) 338-1805



PROJECT DESCRIPTION

The following presents Soils and Geology for the proposed Wyoming Estates Minor Subdivision (Project Site) located in the SE ¼ of the NE ¼ of Section 33, Township 13 South, Range 64 West of the 6th P.M. in the County of El Paso (Figure 1).

The Project Site is comprised 40.01 acres of vacant land to be subdivided into 4 single-family residential RR-5 (Figure 2). The water supply for each lot will be from individual wells and wastewater will be treated by individual non-evaporative septic systems.

GEOLOGY

The Project Site is located within the Falcon Quadrangle near the southeastern edge of the Denver Basin, a geologic structural depression. This asymmetrical structural basin is shallow-dipping toward the northeast. The uppermost/surficial deposits are unconsolidated Quaternary eolian deposits which include Lots 1, 3 and 4 and the western portion of Lot 2; the northeast corner of the Project Site (eastern portion of Lot 2) are older gravels and alluvium (Figure 3). These are underlain in vertical succession, by the Denver, Arapahoe and Laramie Fox Hills Aquifers. Residential Wells in the area can be found completed in the Denver and Arapahoe Aquifers. The base of the Denver Aquifer is about 490 feet below ground surface (bgs) and the Arapahoe Aquifer is from about 515 (top) to 1000 ft bgS (CDSS, SB5).

The Project Site generally slopes to the northeast ranging from 1% to 9%. In the southwest corner, drainage is to the southeast. Figure 4 provides the Project Site Surface Contours.

SOILS

The National Resource Conservation Service (NRCS) has identified three soil types with a northeast trend on the Property (Figure 5).

Type	Description	Percent Coverage
8	Blakeland Loamy Sand, 1 to 9 percent Slope	46.8
19	Columbine gravelly sandy loam sand, 0 to 3 % slopes	1.8
95	Truckton Sandy Loams, 1 to 9 percent Slope	51.4

Attachment 1 provides a complete description of the soils. The soil is classified a "well" to "excessively well" drained. Runoff potential is low with no ponding or flooding which is consistent with historical aerial photos.

FIELD INVESTIGATIONS

OTWS

Field investigations at the Project Site consisted of excavating two profile pits at each proposed lot (8 total) to identify onsite wastewater treatment system (OWTS) locations (PARR 2018,) Figure 6. The OWTS profile pits were excavated to a maximum depth of 8.5 feet below the ground surface. Samples were collected from select intervals and evaluated for soil properties. At locations tested on Lots 2, 3 and 4, a conventional, non-engineered onsite wastewater treatment system was determined to be acceptable. At the locations tested within Lot 1, results indicate that an engineered onsite wastewater treatment system is needed. Table 1 summarized the field investigation results. Attachment 3 provides the detained soil engineering reports.

Pavement Design

Two test holes were evaluated for a proposed gravel roadway for pavement design (Raiper, 2019 Figure 7). Soil samples were collected for testing which included sieve analysis and Atterberg limits in addition to determining resistance values (R-values). The results are summarized in Table 2.

TABLE 1
Summary of Soils Testing for Onsite Wastewater Treatment

3050 Curtis Road, Lot 4, 80831										3052 Curtis Road, Lot 2, 80831										3050 Curtis Road, Lot 1, 80831										3052 Curtis Road, Lot 2, 80831										3050 Curtis Road, Lot 1, 80831									
Depth (ft.)	Sample Interval	USDA Soil Texture	USDA Soil Structure - Shape	USDA Soil Structure - Grade	Reclassific. (T/N)	Soil Type (from Table 3 in O-34)	% Rock Frag.	Color	Depth (ft.)	Sample Interval	USDA Soil Texture	USDA Soil Structure - Shape	USDA Soil Structure - Grade	Reclassific. (T/N)	Soil Type (from Table 3 in O-34)	% Rock Frag.	Color	Depth (ft.)	Sample Interval	USDA Soil Texture	USDA Soil Structure - Shape	USDA Soil Structure - Grade	Reclassific. (T/N)	Soil Type (from Table 3 in O-34)	% Rock Frag.	Color	Depth (ft.)	Sample Interval	USDA Soil Texture	USDA Soil Structure - Shape	USDA Soil Structure - Grade	Reclassific. (T/N)	Soil Type (from Table 3 in O-34)	% Rock Frag.	Color														
Lot 4	P11								Lot 1	P12									Lot 2	P11								Lot 3	P11																				
2		Sandy Clay Loam	Granular	Strong	No	Type 3 (LTAR = 0.35) Treatment 1 Level 1	<35%	10YR 3/2 (Moist)	3		Sandy Loam	Granular	Moderate	No	Type 2 (LTAR = 0.40) Treatment 1 Level 1	<35%	10YR 3/3 (Moist)	4		Sandy Clay Loam	Granular	Strong	No	Type 3 (LTAR = 0.35) Treatment 1 Level 1	<35%	10YR 3/3 (Moist)	2		Sandy Clay Loam	Granular	Moderate	No	Type 3 (LTAR = 0.35) Treatment 1 Level 1	<35%	10YR 2/2 (Moist)														
4									4										4									4																					
6		Sandy Clay Loam	Granular	Moderate	No	Type 2 (LTAR = 0.40) Treatment 1 Level 1	<35%	10YR 3/3 (Moist)	5		Clay	Blocky	Strong	No	Type 4 (LTAR = 0.20) Treatment 1 Level 1	<35%	2.5Y 5/4 (Moist)	6		Sandy Clay Loam	Granular	Strong	No	Type 3 (LTAR = 0.35) Treatment 1 Level 1	<35%	10YR 4/3 (Moist)	6		Sandy Clay Loam	Blocky	Moderate	No	Type 3 (LTAR = 0.35) Treatment 1 Level 1	<35%	3.5Y 4/3 (Moist)														
8									8										8									8																					
Lot 4	P12								Lot 1	P12									Lot 2	P12								Lot 3	P12																				
2									2		Sandy Loam	Granular	Moderate	No	Type 2 (LTAR = 0.40) Treatment 1 Level 1	<35%	10YR 3/3 (Moist)	2									2																						
4									4										4									4																					
6		Sandy Clay Loam	Granular	Strong	No	Type 3 (LTAR = 0.35) Treatment 1 Level 1	<35%	10YR 3/2 (Moist)	6		Clay	Blocky	Strong	No	Type 4 (LTAR = 0.20) Treatment 1 Level 1	<35%	2.5Y 5/4 (Moist)	6		Sandy Clay Loam	Granular	Strong	No	Type 3 (LTAR = 0.35) Treatment 1 Level 1	<35%	10YR 4/3 (Moist)	6		Sandy Clay Loam	Granular	Moderate	No	Type 3 (LTAR = 0.35) Treatment 1 Level 1	<35%	2.5Y 4/3 (Moist)														
8									8										8									8																					

TABLE 2

Location	Depth (ft)	Plasticity Index	% Passing #200	Moisture Content (%)	USCS Soil Classification	Tested R-Value
IP1	1.3	NP	26	4.2	SM	76
IP1	8.10	6	30	5.1	SC-SM	
IP2	1.3	NP	17	3.6	SM	
IP2	3.5	NP	20	3.5	SM	

It was reported for the locations tested, "there was a very (low) potential for swell due to the sandy composition of site soils which consist of non-plastic to low plasticity silty sand and silty clayey sand soils with low percentage of particles passing the #200 sieve screen. Therefore, there is no need to provide any additional stabilization or treatments to subgrade soils" (Raiper, 2019)

GROUNDWATER

Groundwater was not encountered in any of the OWTS test pit and was not evident in the profile test pits a week following excavation. There are no existing wells on the Project Site. Shallow alluvial wells in the area occur in the older gravels and alluviums to the northeast (Soil Type 19 on Figure 5, Qgo Figure 3) which are also on the eastern portion of Lot 3. USGS reported groundwater levels in a Well labeled as SCO1306433AAA1 and located just north of Lot 3. Groundwater levels were measured consistently over the last 40 years and consistently occurs at an elevation of about 6480 ft amsl (Attachment 2) approximately 20 feet below the northeast corner of Lot 3. Based on review of the geology, well reports, and surface drainage, this is likely the location /elevation of the highest water table underlying at the Project Site.

GEOLOGIC HAZARDS

The Project Site was evaluated for geologic hazards that may impact development. Hazards identified in the El Paso County Land Development Code including: Mining, wildfire, highwater table or polluted water, landfills, fill areas, contamination; airports and major utility facilities, and landslides were not identified on the Project Site. The National Flood Hazard map delineated the Property and surrounding area an "area of Minimal Flood Hazard" (FEMA 2018). The Project Site is not located in a flood plain (Figure 8).



Erosion

The soils at the Project Site are susceptible to erosion. Currently, the property is covered with prairie grass. Construction will enhance erosion potential however the slopes are mild and once the disturbed surface is revegetated, erosion should be low.

Expansive Soils

Expansive soils were not present within the soils samples collected at the 8 profile pits. The spoils were described as having a sandy composition, non-plastic to low plastic sands, silty clayey sandy soil. Due to the potential for variability, additional borings will be necessary prior to foundation excavation and subsequently re-evaluated upon completion of the foundation excavation and prior to the placement of any framework.

Mineral Resources

The Project Site is not included in the maps of aggregate deposits or known mineral resources. Colorado Geological Mineral Derivative Map indicates a low potential for the Project Site to contain economically viable mineral resources.

Conclusion

The Project Site is compatible with the proposed development of single-family residential lots. Soils tested on Lot 1 were identified as requiring an engineered individual wastewater treatment system. Hazards are minimal and can be mitigated by standard practices.

REFERENCES

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El Paso County Planning Development. December 1995. El Paso County Aggregate Resource Evaluation Maps.

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Morgan, Mathew L. and White, Johnathan L. 2012. Geologic Map of the Falcon Quadrangle, El Paso County Colorado. Colorado Geological Survey. Open File Report 12-05.

Mineral Resources. <https://cologeosurvey.maps>

National Resource Conservation Service, <https://websoilsurvey.nrcs.usda.gov>

Parr Engineering and Consulting Inc. September 27, 2018. Profile Pits Subdivision JN 18.394, 18.395, 18.396, 18.397

Rapier, Delbert , Protex, Geotechnical Pavement Design, Curtis Road and David Road Job No. 8619, January 9, 2019.

Schwochow, S.D; et al. 1974. Atlas of Sand, Gravel, and Quarry Aggregate Resources, Colorado Front Range Counties. Colorado Geological Survey, Special Publication 5-B.

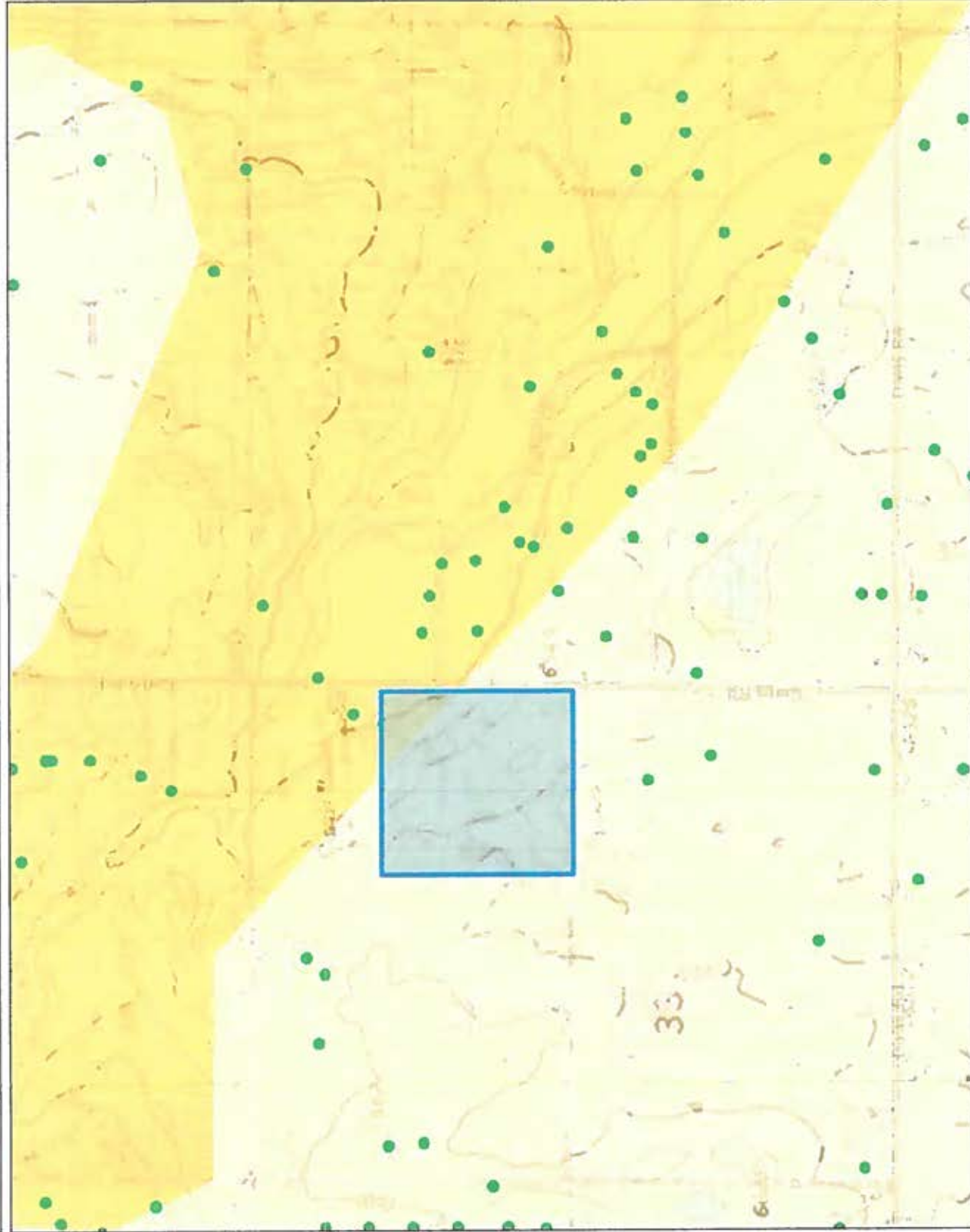
Thorson, Jon P., 2003. *Geologic Map of the Black Forest Quadrangle, El Paso County, Colorado*. Colorado Geological Survey Open -File Report 03-06.



**FIGURE 1
LOCATION**

2000 ft

Wyoming Estates



Legend

- Well Constructed
- Confluence Point
- Source Water Route Framework
- County

Colorado Geology (Tweto)

- Qa
- Qg
- Qgo
- Qe
- Qeo
- Dd
- Qdo
- Ql
- Qb
- QT5a
- QTe
- To

Location



NEI
UI
S

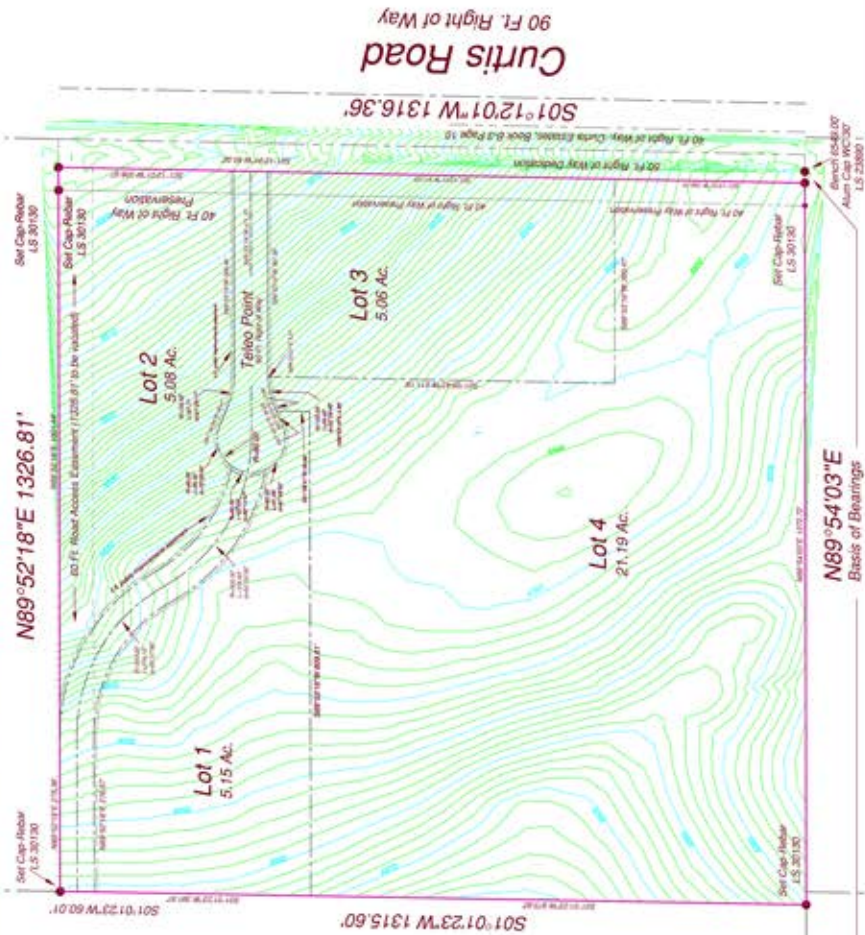
Notes

Depositional Boundary
Eolian Deposits and Older Gravels and
Alluvium (NE)

FIGURE 3

Wyoming Estates - Preliminary

The Southeast Quarter of the Northeast Quarter of Section 33, Township 13 South, Range 64 West of the 6th P.M., El Paso County, Colorado



Notes:

- The survey was conducted in accordance with the rules and regulations of the State of Colorado, and the rules and regulations of the Board of Surveyors, El Paso County, Colorado.
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Total Acreage:
 Lot 1 = 5.15 AC
 Lot 2 = 5.08 AC
 Lot 3 = 5.06 AC
 Lot 4 = 21.19 AC
 Total = 36.48 AC

Service Providers:
 ALESSI and Associates, Inc.
 2000 Bloodroot Valley Street, Suite C
 Colorado Springs, CO 80905
 Phone: 719.590.8832
 Fax: 719.590.8832
 Email: info@alessi.com

Fees:
 Plot Fee: _____
 Survey Fee: _____
 Title Fee: _____
 Other: _____

Know All Men By These Presents:

That the undersigned, known to their President, Name, and Representatives, Inc., being the owner of the following described tract of land:

To Wit:

The following described tract of land, located in Section 33, Township 13 South, Range 64 West of the 6th P.M., El Paso County, Colorado, and more particularly described as follows: (See Exhibit A attached hereto for a more detailed description of the tract.)

Owner:

Manor Shaffer
 Manors Shaffer Properties, Inc.
 1000 North Main Street
 Colorado Springs, CO 80905

Drainage Engineer:

Michael A. Beckwith P.E.
 1224 North Main Street
 Colorado Springs, CO 80905

Land Surveyor:

Joseph E. Hest, PLS
 2000 Bloodroot Valley Street, Suite C
 Colorado Springs, CO 80905

Geologist/Hydrogeologist:

Andie M. Hest, MS, PLS
 2000 Bloodroot Valley Street, Suite C
 Colorado Springs, CO 80905

Zone:

RR-5 Residential 1st Set

Topography:

J.P. Cooney, Engineer

ALESSI and ASSOCIATES, Inc.
 2000 Bloodroot Valley Street, Suite C
 Colorado Springs, CO 80905
 Phone: 719.590.8832
 Fax: 719.590.8832
 Email: info@alessi.com

Job No. 18782 - Wyoming Estate Preliminary Date: August 21, 2020
 Job File No. M2196

Figure 4

Soil Map—El Paso County Area, Colorado
(Wyoming Estates)

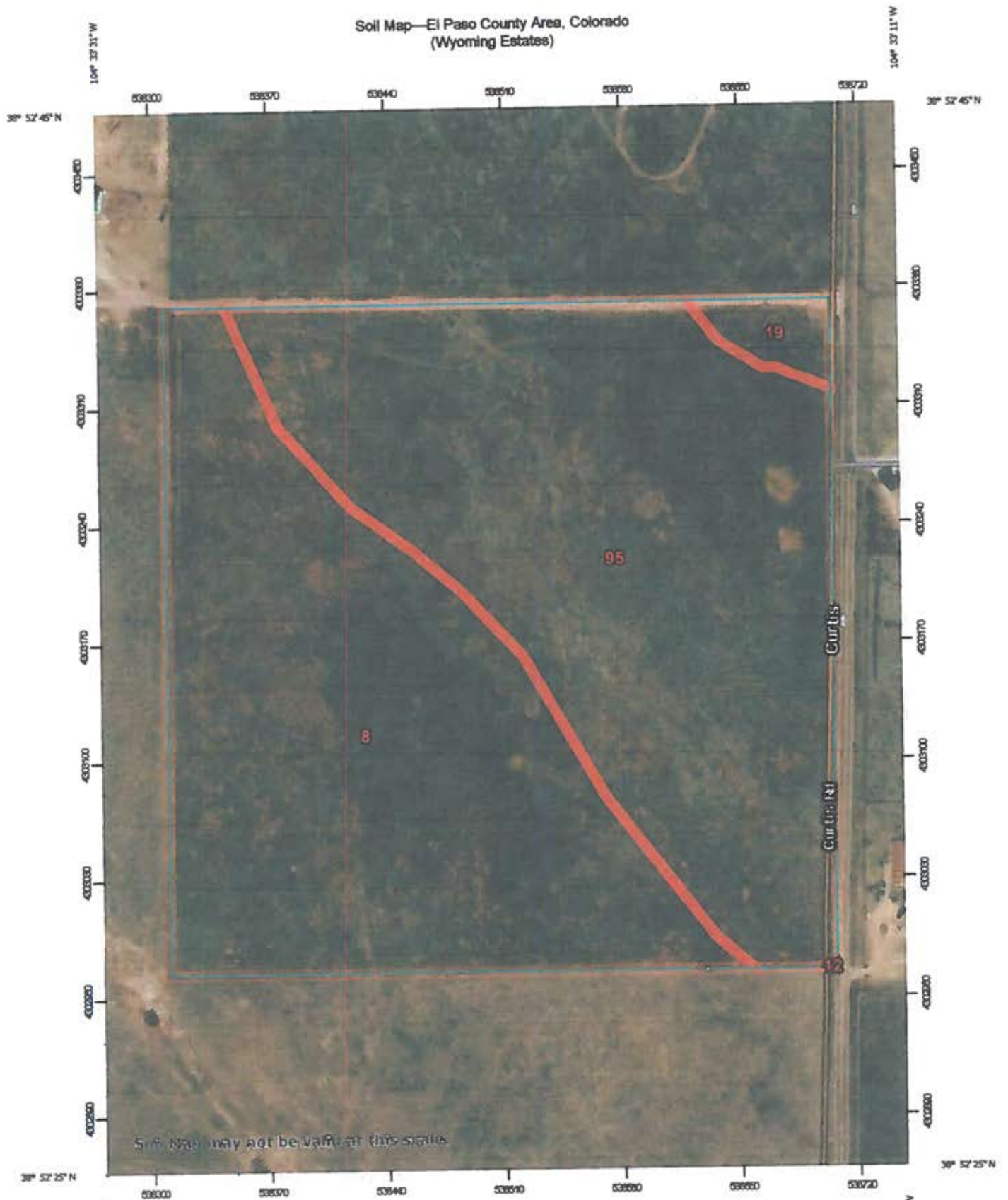
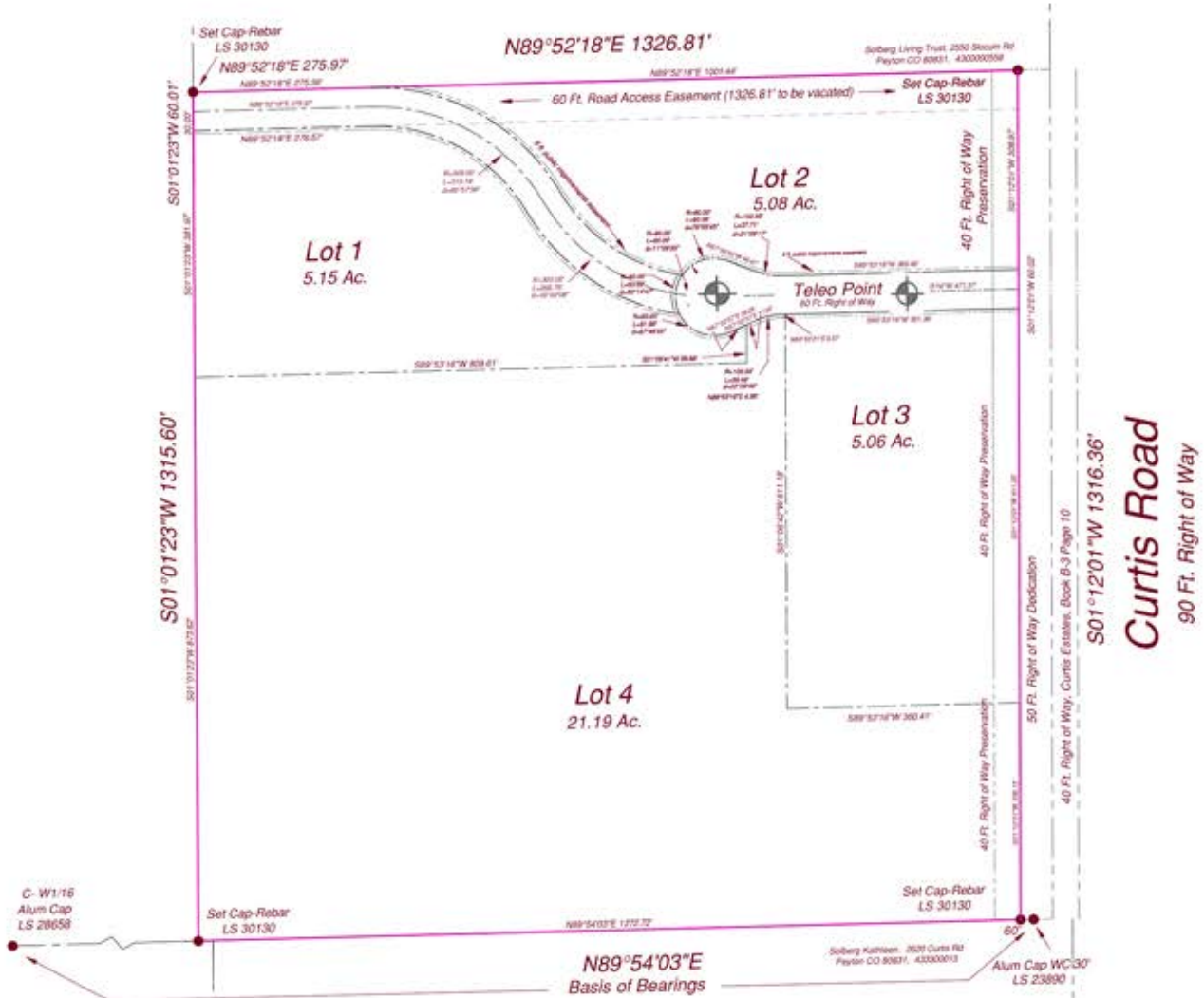


FIGURE 7
Pavement Design Test Pit Locations



Legend:



Approximate Backhoe Test Pit Excavation

Site Plan

Scale: N.T.S.

Drawn by: KR

Date: 1/9/18

Curtis Road and David Road

3050 Curtis Road

El Paso, Colorado



ProTeX Job No.: 8619

National Flood Hazard Layer FIRMette Figure 8



38°52'49.55"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, AE With BFE or Depth Zone AE, AO, AH, AR, AP Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X Future Conditions 1% Annual Chance Flood Hazard Zone X Area with Reduced Flood Risk due to Levees. See Notes. Zone X Area with Flood Risk due to Levees Zone D
OTHER AREAS	Area of Minimal Flood Hazard Zone X Effective LOMIRs Area of Undetermined Flood Hazard Zone X
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer Levee, Dike, or Floodwall
OTHER FEATURES	Cross Sections with 1% Annual Chance Water Surface Elevation Coastal Transect Base Flood Elevation Line (BFE) Limit of Study Jurisdiction Boundary Coastal Transect Baseline Profile Baseline Hydrographic Feature
MAP PANELS	Digital Data Available No Digital Data Available Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps. If it is not valid as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/25/2019 at 12:54:03 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is valid if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation data, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

ATTACHMENT 1

SOILS

MAP LEGEND

- 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
- Water Features**
 - Streams and Canals
- Transportation**
 - Rails
 - Interstate Highways
 - US Routes
 - Major Roads
 - Local Roads
- Background**
 - Aerial Photography
- Soil Area**
 - Stony Spot
 - Very Stony Spot
 - Wet Spot
 - Other
 - Special Line Features

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: www.nrcs.usda.gov/wss
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 Paso County Area, Colorado
Survey Area Data: Version 16, Sep 10, 2018

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

Date(s) aerial images were photographed: Jun 7, 2016—Aug 17, 2017

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
8	Blakeland loamy sand, 1 to 9 percent slopes	18.2	46.8%
12	Bresser sandy loam, cool, 3 to 5 percent slopes	0.0	0.0%
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	0.7	1.8%
95	Truckton loamy sand, 1 to 9 percent slopes	20.0	51.4%
Totals for Area of Interest		38.9	100.0%

El Paso County Area, Colorado

8—Blakeland loamy sand, 1 to 9 percent slopes

Map Unit Setting

National map unit symbol: 369v
Elevation: 4,600 to 5,800 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Blakeland and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blakeland

Setting

Landform: Hills, flats
Landform position (three-dimensional): Side slope, talff
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock and/or eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 11 inches: loamy sand
AC - 11 to 27 inches: loamy sand
C - 27 to 60 inches: sand

Properties and qualities

Slope: 1 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: Sandy Foothill (R049BY210CO)
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit:
Hydric soil rating: No

Pleasant

Percent of map unit:
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 16, Sep 10, 2018

El Paso County Area, Colorado

19—Columbine gravelly sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 367p
Elevation: 6,500 to 7,300 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Columbine and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Columbine

Setting

Landform: Flood plains, fan terraces, fans
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 14 inches: gravelly sandy loam
C - 14 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: Gravelly Foothill (R049BY214CO)
Hydric soil rating: No

Minor Components

Fluvaquentic haplaquolls

Percent of map unit:
Landform: Swales

Hydric soil rating: Yes

Pleasant

Percent of map unit:

Landform: Depressions

Hydric soil rating: Yes

Other soils

Percent of map unit:

Hydric soil rating: No

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 16, Sep 10, 2018

El Paso County Area, Colorado

95—Truckton loamy sand, 1 to 9 percent slopes

Map Unit Setting

National map unit symbol: 36bd
Elevation: 6,000 to 7,000 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Truckton and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Truckton

Setting

Landform: Hills, flats
Landform position (three-dimensional): Side slope, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Arkosic alluvium derived from sedimentary rock and/or arkosic residuum weathered from sedimentary rock

Typical profile

A - 0 to 8 inches: loamy sand
Bt - 8 to 24 inches: sandy loam
C - 24 to 60 inches: coarse sandy loam

Properties and qualities

Slope: 1 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High
(1.98 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: Sandy Foothill (R049BY210CO)
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit:
Hydric soil rating: No

Pleasant

Percent of map unit:
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 16, Sep 10, 2018

ATTACHMENT 2

GROUNDWATER LEVEL



GROUNDWATER DETAILS

Well Name: SC01306433AAA1
 Permit Number:
 WDID:
 Data Source: USGS

Location Number: SC01306433AAA1
 USGS Site ID: 385250104331301
 Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
518 N	76 E		NE	NE	33	13.0 S	64.0 W	S	538682.5	4303607.1	GPS

Division: 2 District: 10
 County: EL PASO
 Designated Basin: UPPER BLACK SQUIRREL CREEK
 Management District: UPPER BLACK SQUIRREL

Ten Most Recent Readings

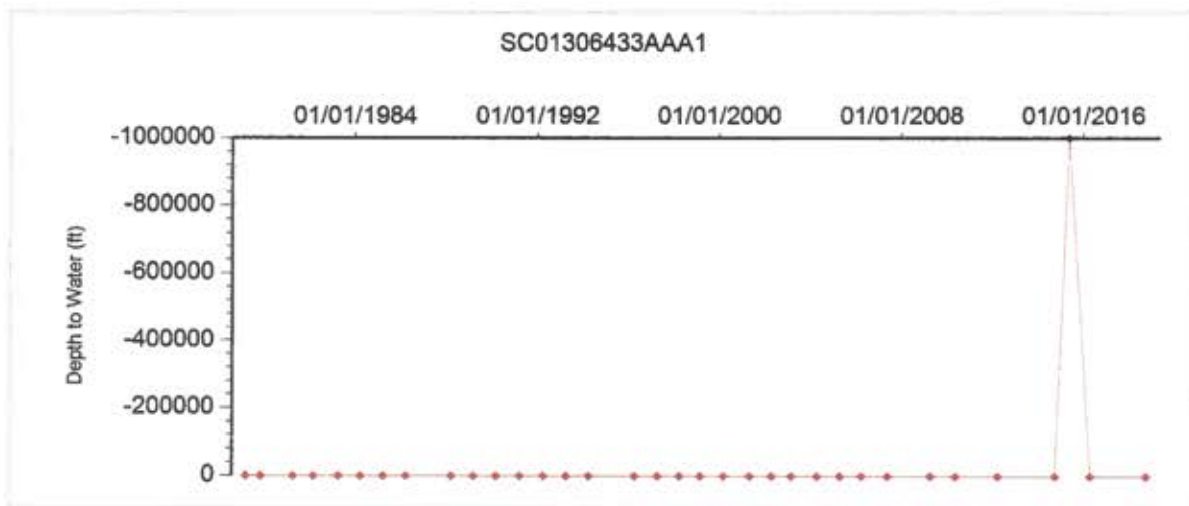
Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
10/02/2018	7.97	6480.61	-1.19
04/21/2016	6.78	6481.80	-1000005.78
05/15/2015	-999999.00	1006487.58	1000007.20
10/02/2014	8.20	6480.38	0.77
03/27/2012	8.97	6479.61	-1.32
05/21/2010	7.65	6480.93	-0.31
04/14/2009	7.34	6481.24	0.12
05/30/2007	7.46	6481.12	-0.14
04/05/2006	7.32	6481.26	-0.30
04/21/2005	7.02	6481.56	0.00

Construction Information

Surface Elevation (ft): 6488.58
 Well Depth (ft): 75.00
 Depth to Base of Grout (ft):
 Depth to Top of Perforated Casing (ft):
 Depth to Bottom of Perforated Casing (ft):
 Source Aquifer(s):

Well Measurement Summary

Start Date: 03/14/1979 End Date: 10/02/2018
 Number of Measurements: 34

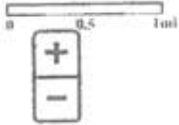




USGS Home
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Water Research

Well Number: 385250104331301 - 8C01306433AAA1



DESCRIPTION:

Latitude 38°52'49.7", Longitude 104°33'14.5" NAD83
 El Paso County, Colorado, Hydrologic Unit 11020004
 Well depth: 75.1 feet
 Hole depth: 75.1 feet
 Land surface altitude: 6,485.00feet above NGVD29.

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Field groundwater-level measurements	1979-03-14	2018-10-02	37

Additional Data Sources	Begin Date	End Date	Count
Groundwater Watch **offsite**	1979	2018	37

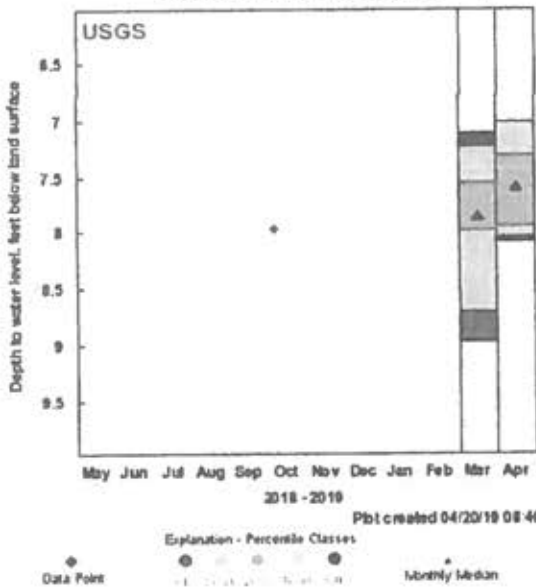
OPERATION:

Record for this site is maintained by the USGS Colorado Water Science Center
 Email questions about this site to Colorado Water Science Center Water-Data Inquiries



Groundwater Watch Help Page

385250104331301 - 8C01306433AAA1



Most recent data value: 7.97 on 10/2/2018
 Period of Record Monthly Statistics for 385250104331301
 Depth to water level, feet below land surface
 All **Approved** Continuous & Periodic Data Used In Analysis
 Note: Highlighted values in the table indicate closest statistic to the most recent data value.

Month	Lowest	10th	25th	50th	75th	90th	Highest	Number of Years
	Median	%ile	%ile	%ile	%ile	%ile	Median	
Mar	8.97	8.71	7.98	7.87	7.56	7.23	7.11	13
Apr	8.08	8.04	7.95	7.61	7.32	7.02	7.02	15

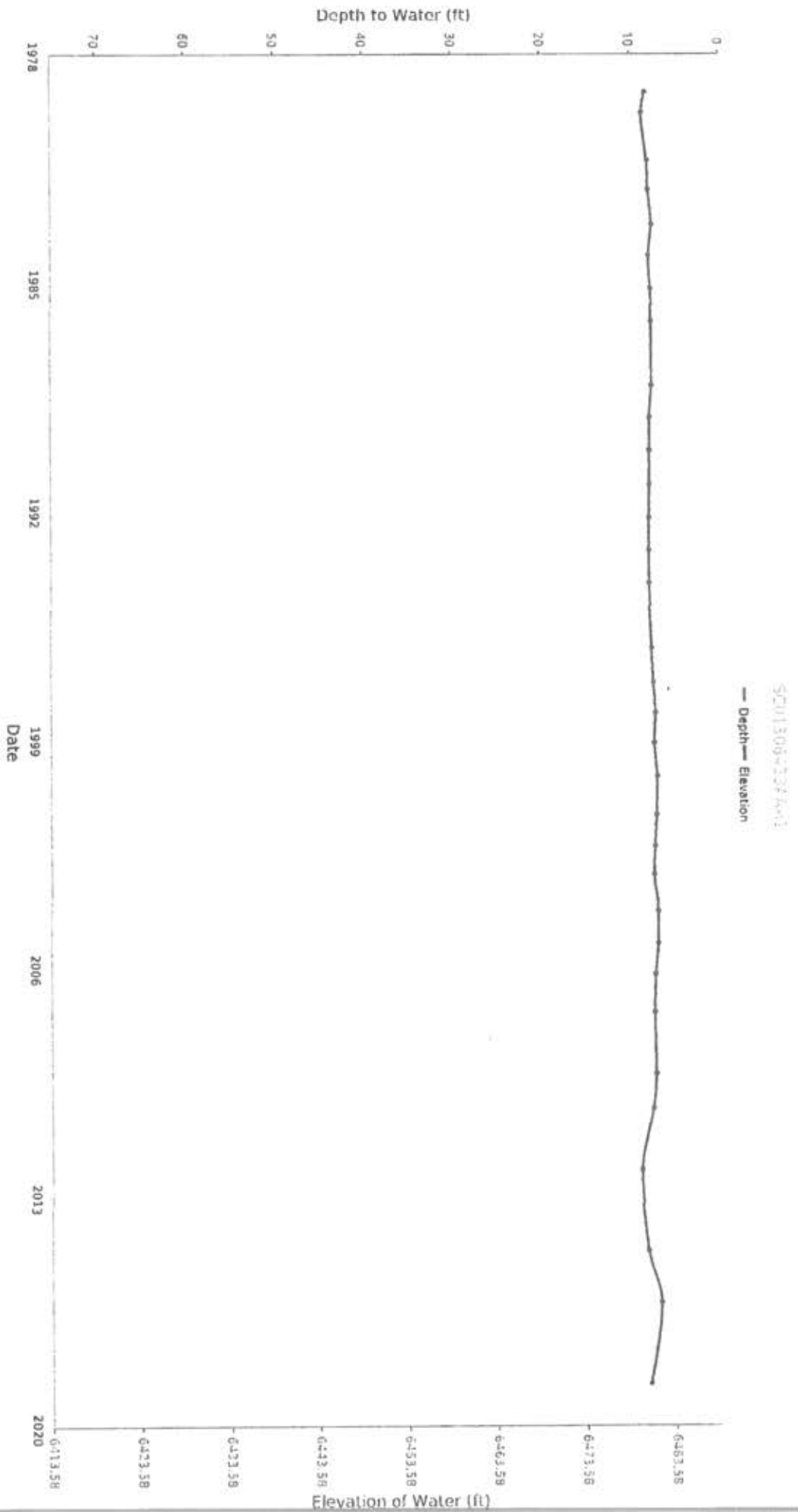
As of 4/19/2019 16:51-2

- Statistics Options
- View month/year statistics

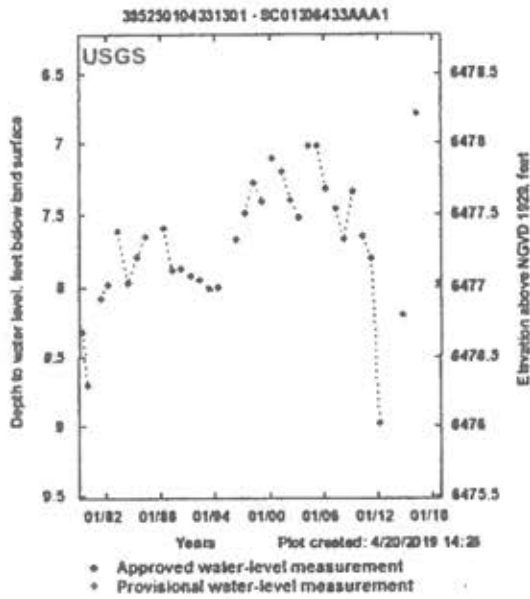
Summary for Period of Record Periodic Water Levels

Depth to water level, feet below land surface
 Approved Periodic Water Level Values

Begin Date	End Date	Number of Values
03/14/79	10/02/18	37



Highest WL	Date of Highest WL	Lowest WL	Date of Lowest WL
6.78	04/21/16	8.97	03/27/12



Groundwater Levels Options

[View latest data on NWISWeb](#)

Download groundwater levels in text format

*References to non-Department of the Interior (DOI) products do not constitute an endorsement by the DOI.

U.S. Department of the Interior | U.S. Geological Survey
 URL: <https://groundwaterwatch.usgs.gov/AWLSites.asp>
 Page Contact Information: Contact the USGS Office of Groundwater
 Last update: Friday, August 10, 2018 at 08:39



Page displayed in 0.398 seconds.

2
11.

ATTACHMENT 3
SOIL SAMPLES OWTS

PARR ENGINEERING & CONSULTING, INC.

Christopher L. Parr, P.E. Principal
 11590 Black Forest Road, Suite 10, Colorado Springs, CO 80908
 Office: 719-494-0404 Cell: 719-659-1313

STA SOIL EVALUATION

Date: September 27, 2018 **Job:** JN: 18.395

Site Location: 3050 Curtis Road, Lot 1
 Peyton, CO 80831
 (Lot number updated 6/7/19)

Purpose of Investigation: To determine general subsurface soil conditions at the site location & to formulate design criteria for the proposed On-Site Wastewater Treatment system (OWTS)

Field Procedure: The materials in the various strata of the soil profile pit were visually classified in accordance with the U.S. Department of Agriculture (USDA) standards.



Profile Pit	YES
Perc Test	-

Date: (Profile Eval) September 18, 2018
Excavator Homeowner
Evaluator R.J & S.D.

Depth to Groundwater (permanent or seasonal) Pit #1: Not Reached
Depth to Groundwater (permanent or seasonal) Pit #2: Not Reached

Depth to Bedrock - Pit #1: Not Reached
Depth to Bedrock - Pit #2: Not Reached

Other Terrain Features or Soil Conditions: See Attached Site Map

Endorsement: Jared R. Dumke, P.E.

Profile Pit 1	
Latitude:	38°52'41.42"N
Longitude:	104°33'25.06"W
Layer	Soil Type & LTAR
0 - 1'-0"	Topsoil
1'-0" - 6'-0"	Type 2 (LTAR=0.60)
6'-0" - 8'-6"	Type 4 (LTAR=0.20)
-	-

Profile Pit 2	
Latitude:	38°52'41.10"N
Longitude:	104°33'24.94"W
Layer	Soil Type & LTAR
0 - 1'-0"	Topsoil
1'-0" - 3'-0"	Type 2 (LTAR=0.60)
3'-0" - 8'-6"	Type 4 (LTAR=0.20)
-	-

Location	
Latitude:	Longitude:
-	-
-	-
-	-

Perc #	N/A	Min./In.
Perc #1	N/A	Min./In.
Perc #2	N/A	Min./In.
Perc #3	N/A	Min./In.
Average:	N/A	Min./In.

Recommendations: (1) An Engineered On-Site Wastewater Treatment system (OWTS) is required for this location due to Soil Type 4 identified in the treatment zone of Profile Pit #1 & Profile Pit #2.



PARR ENGINEERING & CONSULTING, INC.

Christopher L. Parr, P.E. Principal
11590 Black Forest Road, Suite 10, Colorado Springs, CO 80908
Office: 719-494-0404 Cell: 719-659-1313

Google Site Map





Parr Engineering & Consulting, Inc.
 11590 Black Forest Road, Suite 10
 Colorado Springs, Colorado 80908
 Phone: 719-494-0404

Profile Pit - Log

Job Number:	18.395
Date Evaluated:	09/18/18
Profile Pit#:	Pit #1

Excavator:	Homeowner
Logged By:	R.J. & S.D.
Method:	Profile Pit
Equipment:	Excavator

Total Depth:	8'-6"
STA Slope & Direction:	N 45° E @ 4%
Latitude:	38°52'41.42"N
Longitude:	104°33'25.06"W

3050 Curtis Road, Lot 1, 80831

Depth (ft.)	Sample Interval	3050 Curtis Road, Lot 1, 80831						
		USDA Soil Texture	USDA Soil Structure - Shape	Soil Structure Grade	Redoximorphic Features Present? (Y/N)	Soil Type (from Table 9 in O-14)	% Rock Frag.	Color
		Topsoil						
2		Sandy Loam	Granular	Moderate	No	Type 2 (LTAR = 0.60) Treatment Level 1	<35%	10YR 3/3 (Moist)
4								
6								
8		Clay	Blocky	Strong	No	Type 4 (LTAR = 0.20) Treatment Level 1	<35%	2.5Y 5/4 (Moist)
		Total Depth= 8'-6"						
10								

Evidence of Groundwater:	Not Reached
Depth to Bedrock:	Not Reached

Additional Notes:

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Christopher L. Parr, P.E. Principal
 11590 Black Forest Road, Suite 10, Colorado Springs, CO 80908
 Office: 719-494-0404 Cell: 719-659-1313

STA SOIL EVALUATION

Date: September 27, 2018 **Job:** JN: 18.396

Site Location: 3050 Curtis Road, Lot 2
 Peyton, CO 80831
 (Lot number updated 6/7/19)

Purpose of Investigation: To determine general subsurface soil conditions at the site location & to formulate design criteria for the proposed On-Site Wastewater Treatment system (OWTS)

Field Procedure: The materials in the various strata of the soil profile pit were visually classified in accordance with the U.S. Department of Agriculture (USDA) standards.



Profile Pit	YES
Perc Test	-

Date: (Profile Eval) September 18, 2018
Excavator Homeowner
Evaluator R.J & S.D.

Depth to Groundwater (permanent or seasonal) Pit #1: Not Reached
Depth to Groundwater (permanent or seasonal) Pit #2: Not Reached

Depth to Bedrock - Pit #1: Not Reached
Depth to Bedrock - Pit #2: Not Reached

Other Terrain Features or Soil Conditions: See Attached Site Map

Endorsement: Jared R. Dumke, P.E.

Profile Pit 1	
Latitude:	38°52'40.93"N
Longitude:	104°33'18.76"W
Layer	Soil Type & LTAR
0 - 1'-0"	Topsoil
1'-0" - 8'-6"	Type 3 (LTAR=0.35)
-	-
-	-

Profile Pit 2	
Latitude:	38°52'41.21"N
Longitude:	104°33'18.03"W
Layer	Soil Type & LTAR
0 - 1'-0"	Topsoil
1'-0" - 8'-6"	Type 3 (LTAR=0.35)
-	-
-	-

Location	
Latitude:	Longitude:
-	-
-	-
-	-

Perc #1	N/A	Min./In.
Perc #2	N/A	Min./In.
Perc #3	N/A	Min./In.
Average:	N/A	Min./In.

Recommendations: (1) A conventional, non-engineered On-Site Wastewater Treatment system (OWTS) is acceptable for this site.

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Christopher L. Parr, P.E. Principal
11590 Black Forest Road, Suite 10, Colorado Springs, CO 80908
Office: 719-494-0404 Cell: 719-659-1313

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 11590 Black Forest Road, Suite 10
 Colorado Springs, Colorado 80908
 Phone: 719-494-0404

Profile Pit - Log

Job Number:	18.395
Date Evaluated:	09/18/18
Profile Pit#:	Pit #2

Excavator:	Homeowner	Total Depth:	8'-6"
Logged By:	R.J. & S.D.	STA Slope & Direction:	N 25° E @ 4%
Method:	Profile Pit	Latitude:	38°52'41.10"N
Equipment:	Excavator	Longitude:	104°33'24.94"W

3050 Curtis Road, Lot 1, 80831

Depth (ft.)	Sample Interval	3050 Curtis Road, Lot 1, 80831						
		USDA Soil Texture	USDA Soil Structure - Shape	Soil Structure Grade	Redoximorphic Features Present? (Y/N)	Soil Type (from Table 9 in O-14)	% Rock Frag.	Color
		Topsoil						
2		Sandy Loam	Granular	Moderate	No	Type 2 (LTAR = 0.60) Treatment Level 1	<35%	10YR 3/3 (Moist)
4		Clay	Blocky	Strong	No	Type 4 (LTAR = 0.20) Treatment Level 1	<35%	2.5Y 5/4 (Moist)
6								
8								
10								
		Total Depth= 8'-6"						

Evidence of Groundwater:	Not Reached
Depth to Bedrock:	Not Reached

Additional Notes:



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 11590 Black Forest Road, Suite 10
 Colorado Springs, Colorado 80908
 Phone: 719-494-0404

Profile Pit - Log

Job Number:	18.396
Date Evaluated:	09/18/18
Profile Pit#:	Pit #1

Excavator:	Homeowner	Total Depth:	8'-6"
Logged By:	R.J. & S.D.	STA Slope & Direction:	N 35° E @ 4%
Method:	Profile Pit	Latitude:	38°52'40.93"N
Equipment:	Excavator	Longitude:	104°33'18.76"W

3050 Curtis Road, Lot 2, 80831

Depth (ft.)	Sample Interval	3050 Curtis Road, Lot 2, 80831						
		USDA Soil Texture	USDA Soil Structure - Shape	Soil Structure Grade	Redoximorphic Features Present? (Y/N)	Soil Type (from Table 9 in O-14)	% Rock Frag.	Color
		Topsoil						
2		Sandy Clay Loam	Granular	Strong	No	Type 3 (LTAR = 0.35) Treatment Level 1	<35%	10YR 4/3 (Moist)
4								
6								
8								
		Total Depth= 8'-6"						
10								

Evidence of Groundwater:	Not Reached
Depth to Bedrock:	Not Reached

Additional Notes:



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 Phone: 719-494-0404

Profile Pit - Log

Job Number:	18.396
Date Evaluated:	09/18/18
Profile Pit#:	Pit #2

Excavator:	Homeowner
Logged By:	R.J. & S.D.
Method:	Profile Pit
Equipment:	Excavator

Total Depth:	8'-6"
STA Slope & Direction:	N 35° E @ 4%
Latitude:	38°52'41.21"N
Longitude:	104°33'18.03"W

Depth (ft.)	Sample Interval	3050 Curtis Road, Lot 2, 80831						
		USDA Soil Texture	USDA Soil Structure - Shape	Soil Structure Grade	Redoximorphic Features Present? (Y/N)	Soil Type (from Table 9 in O-14)	% Rock Frag.	Color
		Topsoil						
2		Sandy Clay Loam	Granular	Strong	No	Type 3 (LTAR = 0.35) Treatment Level 1	<35%	10YR 4/3 (Moist)
4								
6								
8								
		Total Depth= 8'-6"						
10								

Evidence of Groundwater:	Not Reached
Depth to Bedrock:	Not Reached

Additional Notes:

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Christopher L. Parr, P.E. Principal
 11590 Black Forest Road, Suite 10, Colorado Springs, CO 80908
 Office: 719-494-0404 Cell: 719-659-1313

STA SOIL EVALUATION

Date: September 27, 2018 **Job:** JN: 18.397

Site Location: 3050 Curtis Road, Lot 3
 Peyton, CO 80831
 (Lot number updated 6/7/19)



Purpose of Investigation: To determine general subsurface soil conditions at the site location & to formulate design criteria for the proposed On-Site Wastewater Treatment system (OWTS)

Field Procedure: The materials in the various strata of the soil profile pit were visually classified in accordance with the U.S. Department of Agriculture (USDA) standards.

Profile Pit	YES
Perc Test	-

Profile Pit 1	
Latitude:	38°52'37.92"N
Longitude:	104°33'17.81"W
Layer	Soil Type & LTAR
0 - 1'-0"	Topsoil
1'-0" - 2'-6"	Type 3 (LTAR=0.35)
2'-6" - 4'-0"	Type 3 (LTAR=0.35)
4'-0" - 8'-6"	Type 3 (LTAR=0.35)

Date: (Profile Eval) September 18, 2018
Excavator Homeowner
Evaluator R.J & S.D.

Depth to Groundwater (permanent or seasonal) Pit #1: Not Reached
 Depth to Groundwater (permanent or seasonal) Pit #2: Not Reached

Depth to Bedrock - Pit #1: Not Reached
 Depth to Bedrock - Pit #2: Not Reached

Profile Pit 2	
Latitude:	38°52'37.81"N
Longitude:	104°33'16.94"W
Layer	Soil Type & LTAR
0 - 1'-0"	Topsoil
1'-0" - 8'-6"	Type 3 (LTAR=0.35)
-	-
-	-

Other Terrain Features or Soil Conditions: See Attached Site Map

Endorsement: Jared R. Dumke, P.E.

Location	
Latitude:	Longitude:
-	-
-	-
-	-

Perc #	N/A	Min./In.
Perc #1	N/A	Min./In.
Perc #2	N/A	Min./In.
Perc #3	N/A	Min./In.
Average:	N/A	Min./In.

Recommendations: (1) A conventional, non-engineered On-Site Wastewater Treatment system (OWTS) is acceptable for this site.



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Christopher L. Parr, P.E. Principal
11590 Black Forest Road, Suite 10, Colorado Springs, CO 80908
Office: 719-494-0404 Cell: 719-659-1313

Google Site Map





Parr Engineering & Consulting, Inc.
 11590 Black Forest Road, Suite 10
 Colorado Springs, Colorado 80908
 Phone: 719-494-0404

Profile Pit - Log

Job Number:	18.397
Date Evaluated:	09/18/18
Profile Pit#:	Pit #1

Excavator:	Homeowner	Total Depth:	8'-6"
Logged By:	R.J. & S.D.	STA Slope & Direction:	N 35° E @ 5%
Method:	Profile Pit	Latitude:	38°52'37.92"N
Equipment:	Excavator	Longitude:	104°33'17.81"W

Depth (ft.)	Sample Interval	3050 Curtis Road, Lot 3, 80831						
		USDA Soil Texture	USDA Soil Structure - Shape	Soil Structure Grade	Redoximorphic Features Present? (Y/N)	Soil Type (from Table 9 in O-14)	% Rock Frag.	Color
		Topsoil						
2		Sandy Clay Loam	Granular	Moderate	No	Type 3 (LTAR = 0.35)	<35%	10YR 2/2 (Moist)
4		Sandy Clay Loam	Blocky	Strong	No	Type 3 (LTAR = 0.35)	<35%	2.5Y 3/3 (Moist)
6		Sandy Clay Loam	Blocky	Moderate	No	Type 3 (LTAR = 0.35) Treatment Level 1	<35%	2.5Y 4/3 (Moist)
8								
10		Total Depth= 8'-6"						

Evidence of Groundwater:	Not Reached
Depth to Bedrock:	Not Reached

Additional Notes:



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 Colorado Springs, Colorado 80908
 Phone: 719-494-0404

Profile Pit - Log

Job Number:	18.397
Date Evaluated:	09/18/18
Profile Pit#:	Pit #2

Excavator:	Homeowner	Total Depth:	8'-6"
Logged By:	R.J. & S.D.	STA Slope & Direction:	N 35° E @ 5%
Method:	Profile Pit	Latitude:	38°52'37.81"N
Equipment:	Excavator	Longitude:	104°33'16.94"W

Depth (ft.)	Sample Interval	3050 Curtis Road, Lot 3, 80831					
		USDA Soil Texture	USDA Soil Structure - Shape	Soil Structure Grade	Redoximorphic Features Present? (Y/N)	Soil Type (from Table 9 in O-14)	% Rock Frag.

		Topsoil						
2		Sandy Clay Loam	Granular	Moderate	No	Type 3 (LTAR = 0.35) Treatment Level 1	<35%	2.5Y 4/3 (Moist)
4								
6								
8								
		Total Depth= 8'-6"						
10								

Evidence of Groundwater:	Not Reached
Depth to Bedrock:	Not Reached

Additional Notes:



PARR ENGINEERING & CONSULTING, INC.

Christopher L. Parr, P.E. Principal
 11590 Black Forest Road, Suite 10, Colorado Springs, CO 80908
 Office: 719-494-0404 Cell: 719-659-1313

STA SOIL EVALUATION

Date: September 27, 2018 **Job:** JN: 18.394

Site Location: 3050 Curtis Road, Lot 4
 Peyton, CO 80831
 (Lot number updated 6/7/19)

Purpose of Investigation: To determine general subsurface soil conditions at the site location & to formulate design criteria for the proposed On-Site Wastewater Treatment system (OWTS)

Field Procedure: The materials in the various strata of the soil profile pit were visually classified in accordance with the U.S. Department of Agriculture (USDA) standards.



Profile Pit	YES
Perc Test	-

Date: (Profile Eval) September 18, 2018
Excavator Homeowner
Evaluator R.J & S.D.

Depth to Groundwater (permanent or seasonal) Pit #1: Not Reached
Depth to Groundwater (permanent or seasonal) Pit #2: Not Reached

Depth to Bedrock - Pit #1: Not Reached
Depth to Bedrock - Pit #2: Not Reached

Other Terrain Features or Soil Conditions: See Attached Site Map

Endorsement: Jared R. Dumke, P.E.

Profile Pit 1	
Latitude:	38°52'31.31"N
Longitude:	104°33'28.35"W
Layer	Soil Type & LTAR
0 - 1'-0"	Topsoil
1'-0" - 5'-0"	Type 3 (LTAR=0.35)
5'-0" - 8'-0"	Type 2 (LTAR=0.60)
-	-

Profile Pit 2	
Latitude:	38°52'30.60"N
Longitude:	104°33'27.64"W
Layer	Soil Type & LTAR
0 - 1'-0"	Topsoil
1'-0" - 8'-6"	Type 3 (LTAR=0.35)
-	-
-	-

Location	
Latitude:	Longitude:
-	-
-	-
-	-

Perc #1	N/A	Min./In.
Perc #2	N/A	Min./In.
Perc #3	N/A	Min./In.
Average:	N/A	Min./In.

Recommendations: (1) A conventional, non-engineered On-Site Wastewater Treatment system (OWTS) is acceptable for this site.



PARR ENGINEERING & CONSULTING, INC.

Christopher L. Parr, P.E. Principal
11590 Black Forest Road, Suite 10, Colorado Springs, CO 80908
Office: 719-494-0404 Cell: 719-659-1313

Google Site Map





Parr Engineering & Consulting, Inc.
 11590 Black Forest Road, Suite 10
 Colorado Springs, Colorado 80908
 Phone: 719-494-0404

Profile Pit - Log

Job Number:	18.394
Date Evaluated:	09/18/18
Profile Pit#:	Pit #1

Excavator:	Homeowner
Logged By:	R.J. & S.D.
Method:	Profile Pit
Equipment:	Excavator

Total Depth:	8'-0"
STA Slope & Direction:	S @ 3%
Latitude:	38°52'31.31"N
Longitude:	104°33'28.35"W

3050 Curtis Road, Lot 4, 80831

Depth (ft.)	Sample Interval	3050 Curtis Road, Lot 4, 80831						
		USDA Soil Texture	USDA Soil Structure - Shape	Soil Structure Grade	Redoximorphic Features Present? (Y/N)	Soil Type (from Table 9 in O-14)	% Rock Frag.	Color
		Topsoil						
2		Sandy Clay Loam	Granular	Strong	No	Type 3 (LTAR = 0.35) Treatment Level 1	<35%	10YR 3/2 (Moist)
4								
6		Sandy Loam	Granular	Moderate	No	Type 2 (LTAR = 0.60) Treatment Level 1	<35%	10YR 5/3 (Moist)
8								
		Total Depth= 8'-0"						
10								

Evidence of Groundwater:	Not Reached
Depth to Bedrock:	Not Reached

Additional Notes:



Parr Engineering & Consulting, Inc.
 11590 Black Forest Road, Suite 10
 Colorado Springs, Colorado 80908
 Phone: 719-494-0404

Profile Pit - Log

Job Number:	18.394
Date Evaluated:	09/18/18
Profile Pit#:	Pit #2

Excavator:	Homeowner
Logged By:	R.J. & S.D.
Method:	Profile Pit
Equipment:	Excavator

Total Depth:	8'-6"
STA Slope & Direction:	S @ 3%
Latitude:	38°52'30.60"N
Longitude:	104°33'27.64"W

3050 Curtis Road, Lot 4, 80831

Depth (ft.)	Sample Interval	3050 Curtis Road, Lot 4, 80831						
		USDA Soil Texture	USDA Soil Structure - Shape	Soil Structure Grade	Redoximorphic Features Present? (Y/N)	Soil Type (from Table 9 in O-14)	% Rock Frag.	Color
		Topsoil						
2		Sandy Clay Loam	Granular	Strong	No	Type 3 (LTAR = 0.35) Treatment Level 1	<35%	10YR 3/2 (Moist)
4								
6								
		Total Depth= 8'-6"						
8								
10								

Evidence of Groundwater:	Not Reached
Depth to Bedrock:	Not Reached

Additional Notes:

JDM CONSULTING, LLC

P.O. Box 26137, Colorado Springs, CO 80936
 p. 719.251.5291 267.261.1825
 e. daniel@jdmengineers.com jared@jdmengineers.com

Property Address:	Lot 4, Wyoming Estates	Date:	April 13, 2023
	Colorado Springs, CO 80831	Job #:	23-052
Endorsement:	Jared R. Dumke, P.E.		



Purpose of Investigation: To determine the subsurface suitability for an Onsite Wastewater Treatment System (OWTS) as well as outline design criteria for a future Soil Treatment Area (STA) through both visual and tactile evaluations of the onsite subsurface soil. The onsite evaluation and associated soil testing were conducted in compliance with the El Paso County Board of Health OWTS Regulations

Profile Pit Summary	
Profile Pit #1	
Lat:	38°52'36.78"N
Long:	104°33'23.44"W
0 - 0'-6"	Topsoil
0'-6" - 2'-0"	Soil Type 2
2'-0" - 6'-0"	Soil Type 4
6'-0" - 8'-0"	Soil Type 2
-	-
Profile Pit #2	
Lat:	38°52'37.06"N
Long:	104°33'23.81"W
0 - 0'-6"	Topsoil
0'-6" - 2'-6"	Soil Type 2
2'-6" - 5'-0"	Soil Type 4
5'-0" - 7'-0"	Soil Type 2
-	-
Existing Well (If applicable)	
Lat:	-
Long:	-

Profile Pit #1		Profile Pit #2	
	Topsoil		Topsoil
1'-0"	Soil Type 2	1'-0"	Soil Type 2
2'-0"		2'-0"	
3'-0"	Soil Type 4	3'-0"	Soil Type 4
4'-0"		4'-0"	
5'-0"		5'-0"	
6'-0"	Soil Type 2	6'-0"	Soil Type 2
7'-0"		7'-0"	
8'-0"		8'-0"	
9'-0"		9'-0"	

Recommendations:

An Engineered On-Site Wastewater Treatment System (OWTS) will be required for this site due to: (a) Soil Type 4 identified in the treatment zone of Profile Pit #1 & Profile Pit #2. Soil Type 4 (LTAR = 0.20, Treatment Level 1) will be the most restrictive soil in the treatment zone of the soil treatment area.

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P.O. Box 26137, Colorado Springs, CO 80936
 p. 719.251.5291 267.261.1825
 e. daniel@jdmengineers.com jared@jdmengineers.com

Job Number:	23-052	Test Pit#	Pit #1
Date of Evaluation:	April 10, 2023	Total Depth:	8'-0"
Evaluator:	D.Mizicko	STA Slope and Direction:	S 45° W @ ±2%
Excavator:	Home Run Restorations	Latitude:	38°52'36.78"N
Equipment:	Mini Excavator	Longitude:	104°33'23.44"W

Lot 4, Wyoming Estates, 80831

Depth Below Grade	Sample Depth	USDA Soil texture	USDA Soil Structure - Type	USDA Soil Structure Grade	Soil Type	Redoximorphic Features Present (Y/N)
0 - 0'-6"	Topsoil					
0'-6" - 2'-0"	1'-0"	Sandy Loam	Granular	Moderate	Soil Type 2	No
2'-0" - 6'-0"	4'-0"	Silty Clay	Blocky	Strong	Soil Type 4	No
6'-0" - 8'-0"	7'-0"	Sandy Loam	Granular	Moderate	Soil Type 2	No
-	-	-	-	-	-	-

Total Depth =	8'-0"	Comments:
Groundwater Evidence?	No	Profile Pits were excavated prior to our site visit.
Bedrock Encountered?	No	
Is Dawson Arkose (DA) or Cemented Sands (CS) Present?	No	
Is the material fractured and/or jointed?	No	
If Yes, what is the cementation class?	-	
Is the Dawson Arkose or Cemented Sand a limiting layer?	-	
Type "R" Soils (High Rock Content) Encountered?	No	

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 p. 719.251.5291 267.261.1825
 e. daniel@jdmengineers.com jared@jdmengineers.com

Job Number:	23-052	Test Pit#	Pit #2
Date of Evaluation:	April 10, 2023	Total Depth:	7'-0"
Evaluator:	D.Mizicko	STA Slope and Direction:	S 45° W @ ±2%
Excavator:	Home Run Restorations	Latitude:	38°52'37.06"N
Equipment:	Mini Excavator	Longitude:	104°33'23.81"W

Lot 4, Wyoming Estates, 80831

Depth Below Grade	Sample Depth	USDA Soil texture	USDA Soil Structure - Type	USDA Soil Structure Grade	Soil Type	Redoximorphic Features Present (Y/N)
0 - 0'-6"		Topsoil				
0'-6" - 2'-6"	-	Sandy Loam	Granular	Moderate	Soil Type 2	No
2'-6" - 5'-0"	-	Silty Clay	Blocky	Strong	Soil Type 4	No
5'-0" - 7'-0"	-	Sandy Loam	Granular	Moderate	Soil Type 2	No
-	-	-	-	-	-	-

Total Depth =	7'-0"		Comments:
Groundwater Evidence?	No	-	Profile Pits were excavated prior to our site visit.
Bedrock Encountered?	No	-	
Is Dawson Arkose (DA) or Cemented Sands (CS) Present?	No	-	
Is the material fractured and/or jointed?	No	-	
If Yes, what is the cementation class?	-	-	
Is the Dawson Arkose or Cemented Sand a limiting layer?	-	-	
Type "R" Soils (High Rock Content) Encountered?	No	-	

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 p. 719.251.5291 267.261.1825
 e. daniel@jdmengineers.com jared@jdmengineers.com

Property Address:	Lot 6, Wyoming Estates	Date:	April 21, 2023
	Colorado Springs, CO 80831	Job #:	23-053
Endorsement:	Jared R. Dumke, P.E.		



Purpose of Investigation: To determine the subsurface suitability for an Onsite Wastewater Treatment System (OWTS) as well as outline design criteria for a future Soil Treatment Area (STA) through both visual and tactile evaluations of the onsite subsurface soil. The onsite evaluation and associated soil testing were conducted in compliance with the El Paso County Board of Health OWTS Regulations

Profile Pit Summary		Profile Pit #1		Profile Pit #2		Profile Pit #3					
Profile Pit #1			Topsoil		Topsoil		Topsoil				
Lat:	38°52'30.52"N	1'-0"	Soil Type 2	1'-0"	Soil Type 2	1'-0"	Soil Type 2				
Long:	104°33'21.28"W										
0 - 0'-6"	Topsoil	2'-0"		2'-0"				2'-0"			
0'-6" - 8'-0"	Soil Type 2										
Profile Pit #2		3'-0"				3'-0"			3'-0"		
Lat:	38°52'30.12"N			Soil Type 2		4'-0"		Soil Type 4	4'-0"	Soil Type 2	
Long:	104°33'21.62"W	4'-0"									
0 - 0'-6"	Topsoil										
0'-6" - 3'-6"	Soil Type 2	5'-0"									
3'-6" - 5'-6"	Soil Type 4										
5'-6" - 8'-0"	Soil Type 2	6'-0"									
Profile Pit #3											
Lat:	38°52'31.01"N	7'-0"		7'-0"	Soil Type 2	7'-0"					
Long:	104°33'20.70"W										
0 - 0'-6"	Topsoil	8'-0"		8'-0"			8'-0"				
0'-6" - 2'-6"	Soil Type 2										
2'-6" - 8'-0"	Soil Type 2	9'-0"		9'-0"			9'-0"				
Existing Well (If applicable)											
Lat:	-										
Long:	-										

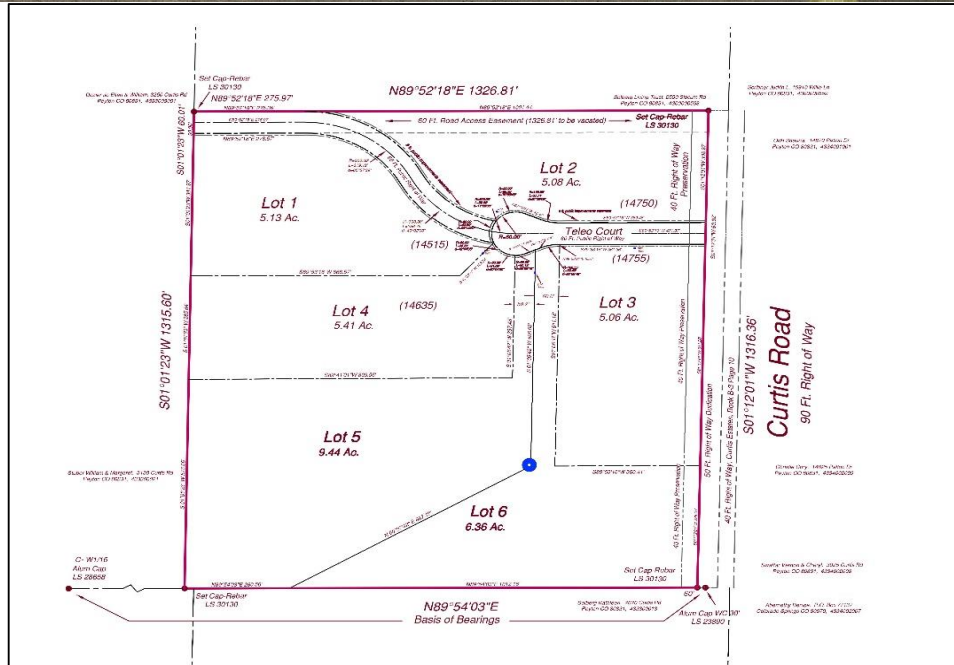
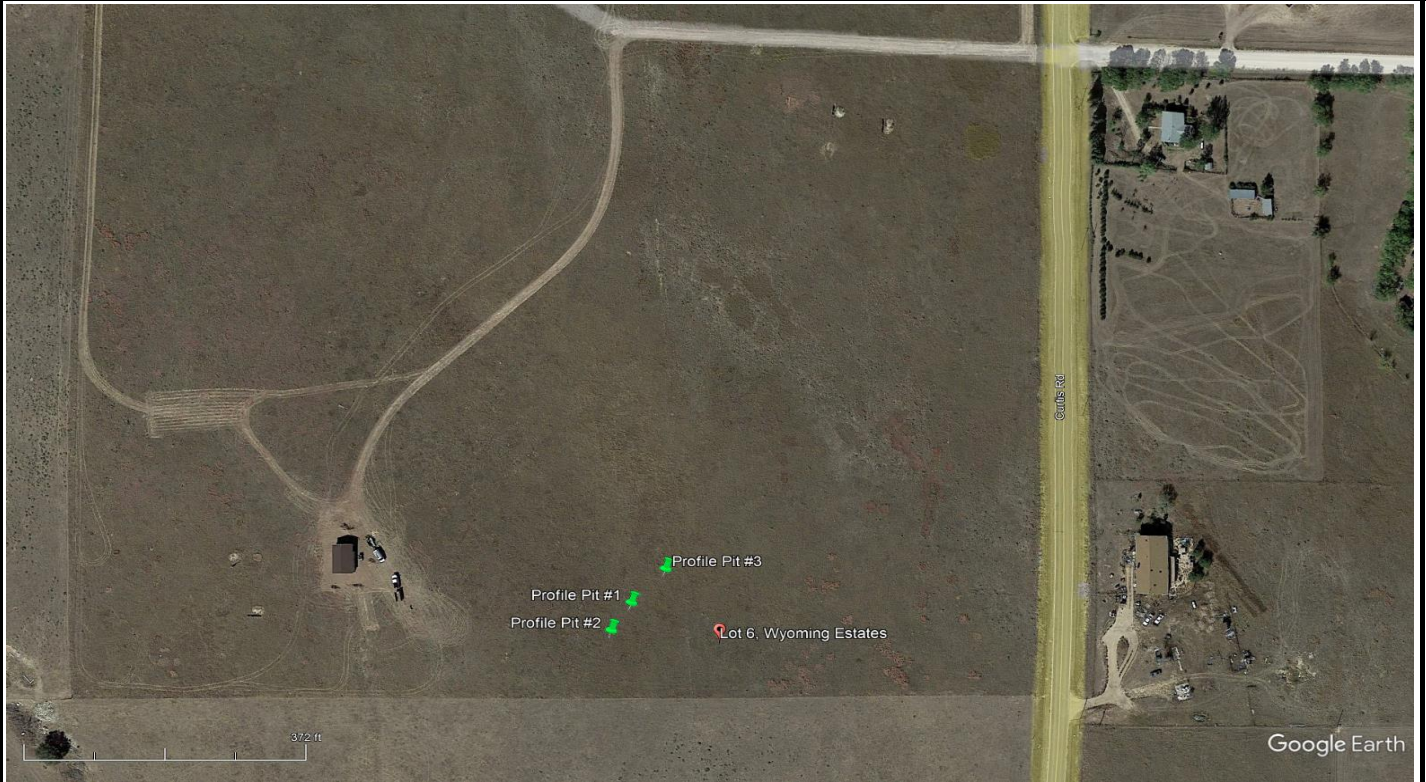
Recommendations:

A Conventional On-Site Wastewater Treatment System (OWTS) is acceptable for this site (single family residence) provided the following requirements can be met: The Soil Treatment Area may not be located in the area of Profile Pit #2. If these install requirements cannot be met, an Engineered On-Site Wastewater Treatment System may be required. Provided the preceding requirements can be met, Soil Type 2 (LTAR = 0.60, Treatment Level 1) will be the most restrictive soil in the treatment zone of the soil treatment area.

JDM CONSULTING, LLC

P.O. Box 26137, Colorado Springs, CO 80936
 p. 719.251.5291 267.261.1825
 e. daniel@jdmengineers.com jared@jdmengineers.com

Site Map:



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P.O. Box 26137, Colorado Springs, CO 80936
 p. 719.251.5291 267.261.1825
 e. daniel@jdmengineers.com jared@jdmengineers.com

Job Number:	23-053	Test Pit#	Pit #1
Date of Evaluation:	April 10, 2023	Total Depth:	8'-0"
Evaluator:	D.Mizicko	STA Slope and Direction:	N 30° E @ ±5%
Excavator:	Home Run Restorations	Latitude:	38°52'30.52"N
Equipment:	Mini Excavator	Longitude:	104°33'21.28"W

Lot 6, Wyoming Estates, 80831

Depth Below Grade	Sample Depth	USDA Soil texture	USDA Soil Structure - Type	USDA Soil Structure Grade	Soil Type	Redoximorphic Features Present (Y/N)
0 - 0'-6"		Topsoil				
0'-6" - 8'-0"	4'-0"	Sandy Loam	Granular	Moderate	Soil Type 2	No
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Total Depth =	8'-0"	Comments:
Groundwater Evidence?	No	
Bedrock Encountered?	No	
Is Dawson Arkose (DA) or Cemented Sands (CS) Present?	No	
Is the material fractured and/or Jointed	No	
If Yes, what is the cementation class?	-	
Is the Dawson Arkose or Cemented Sand a limiting layer?	-	
Type "R" Soils (High Rock Content) Encountered?	No	

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 p. 719.251.5291 267.261.1825
 e. daniel@jdmengineers.com jared@jdmengineers.com

Job Number:	23-053	Test Pit#	Pit #2
Date of Evaluation:	April 10, 2023	Total Depth:	8'-0"
Evaluator:	D.Mizicko	STA Slope and Direction:	N 30° E @ ±5%
Excavator:	Home Run Restorations	Latitude:	38°52'30.12"N
Equipment:	Mini Excavator	Longitude:	104°33'21.62"W

Lot 6, Wyoming Estates, 80831

Depth Below Grade	Sample Depth	USDA Soil texture	USDA Soil Structure - Type	USDA Soil Structure Grade	Soil Type	Redoximorphic Features Present (Y/N)
0 - 0'-6"		Topsoil				
0'-6" - 3'-6"	-	Sandy Loam	Granular	Moderate	Soil Type 2	No
3'-6" - 5'-6"	4'-0"	Silty Clay	Blocky	Strong	Soil Type 4	No
5'-6" - 8'-0"	-	Sandy Loam	Granular	Moderate	Soil Type 2	No
-	-	-	-	-	-	-

Total Depth =	8'-0"	Comments:
Groundwater Evidence?	No	
Bedrock Encountered?	No	
Is Dawson Arkose (DA) or Cemented Sands (CS) Present?	No	
Is the material fractured and/or Jointed	No	
If Yes, what is the cementation class?	-	
Is the Dawson Arkose or Cemented Sand a limiting layer?	-	
Type "R" Soils (High Rock Content) Encountered?	No	

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 p. 719.251.5291 267.261.1825
 e. daniel@jdmengineers.com jared@jdmengineers.com

Job Number:	23-053	Test Pit#	Pit #2
Date of Evaluation:	April 19, 2023	Total Depth:	8'-0"
Evaluator:	D.Mizicko	STA Slope and Direction:	N 30° E @ ±5%
Excavator:	Home Run Restorations	Latitude:	38°52'31.01"N
Equipment:	Mini Excavator	Longitude:	104°33'20.70"W

Lot 6, Wyoming Estates, 80831

Depth Below Grade	Sample Depth	USDA Soil texture	USDA Soil Structure - Type	USDA Soil Structure Grade	Soil Type	Redoximorphic Features Present (Y/N)
0 - 0'-6"		Topsoil				
0'-6" - 2'-6"	2'-0"	Sandy Loam	Granular	Strong	Soil Type 2	No
2'-6" - 8'-0"	4'-0"	Sandy Loam	Granular	Strong	Soil Type 2	No
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Total Depth =	8'-0"		Comments:
Groundwater Evidence?	No	-	
Bedrock Encountered?	No	-	
Is Dawson Arkose (DA) or Cemented Sands (CS) Present?	No	-	
Is the material fractured and/or Jointed	No	-	
If Yes, what is the cementation class?		-	
Is the Dawson Arkose or Cemented Sand a limiting layer?		-	
Type "R" Soils (High Rock Content) Encountered?	No	-	