

Architectural
Structural
Geotechnical



Materials Testing
Forensic
Civil/Planning

Job No. 188423

April 8, 2022

Aaron Atwood
515 Struthers Loop
Colorado Springs, CO 80921

Re: Wastewater Study
515 Struthers Loop
Pair-A-Dise Subdivision Filing No. 1
El Paso County, Colorado

Ref: *Replat plan, Pair-A-Dise Subdivision Filing No. 1*, prepared by MVE, Inc. Engineering, Project No. 61155, last dated 12 October, 2021.

Dear Aaron:

As requested, personnel of RMG – Rocky Mountain Group has performed a preliminary investigation and site reconnaissance at the above referenced address. It is our understanding the parcel included in this study is:

- EPC Schedule No. 7136002005: addressed as 515 Struthers Loop, Pair-A-Dise Subdivision, Filing No. 1, Lot 38 of the Chaparral Hills Subdivision, which consists of approximately 5 acres and is zoned RR-2.5, residential rural.

Project Description

The site consists of approximately 5 acres and is vacant, undeveloped land. It is our understanding the existing parcel is to be subdivided into a total of two lots. Lot 1, the northernmost lot, is to consist of 2.504 acres. Lot 2, the southernmost lot, is to consist of 2.502 acres.

Each new lot is to be serviced by an on-site wastewater treatment system (OWTS) and an individual water supply well. Lot 2 is to be accessed from Struthers Loop from an individual driveway and lot 1 is to be accessed from an access easement along the east side of lot 2. A Site Vicinity Map is included as Figure 1.

This letter is to provide information for the on-site wastewater report per the On-Site Wastewater Treatment Systems (OWTS) Regulations of the El Paso County Board of Health pursuant to Chapter 8.

The following are also excluded from the scope of this report including (but not limited to) foundation recommendations, site grading/surface drainage recommendations, subsurface drainage recommendations, geologic, natural and environmental hazards such as landslides,

unstable slopes, seismicity, snow avalanches, water flooding, corrosive soils, erosion, radon, wild fire protection, hazardous waste and natural resources.

Previous Studies and Field Investigation

Reports of previous geotechnical engineering/geologic investigations for this site were available for our review and are listed below:

1. *Profile Pit Evaluation for Aaron Atwood, Lot #38, Chaparral Hills Subdivision, 515 Struthers Loop, El Paso County, Colorado*, prepared by Geoquest, LLC, Job No. 21-0794, last dated July 30, 2021.
2. *Profile Pit Evaluation for Aaron Atwood, Lot #38, Chaparral Hills Subdivision, 515 Struthers Loop, El Paso County, Colorado*, prepared by Geoquest, LLC, Job No. 21-0795, last dated July 30, 2021.
3. *Soils Report for Aaron Atwood, Lot #38, Chaparral Hills Subdivision, 515 Struthers Loop, El Paso County, Colorado*, prepared by Geoquest, LLC, Job No. 21-0794, last dated July 30, 2021.
4. *Soils Report for Aaron Atwood, Lot #38, Chaparral Hills Subdivision, 515 Struthers Loop, El Paso County, Colorado*, prepared by Geoquest, LLC, Job No. 21-0795, last dated July 30, 2021.
5. *Soils and Geology Study, 515 Struthers Loop, Lot 38, Chaparral Hills Subdivision, El Paso County, Colorado*, prepared by RMG-Rocky Mountain Group, Job No. 188423, dated April 8, 2022.

SITE CONDITIONS

Personnel of RMG performed a reconnaissance visit on March 2, 2022. The purpose of the reconnaissance visit was to evaluate the site surface characteristics including landscape position, topography, vegetation, natural and cultural features, and current and historic land uses. Four 8-foot deep profile pits were reportedly observed by Geoquest, LLC on July 5, 2021. The profile pit locations for each proposed new lot are included in Figure 2, Profile Pit Location Map.

The site surface characteristics were observed to consist of low lying grasses and weeds across the entire site. No deciduous trees are located on the property.

The following conditions were observed with regard to the existing parcel:

- A well currently does not exist on the site.
- No runoff or irrigation features anticipated to cause deleterious effects to treatment systems on the site were observed;
- A seasonally wet drainage channel exists in the northwest corner of the property. The entire site lies outside of designated floodways and floodplains;
- Slopes greater than 20 percent do not exist on the site; and
- Significant man-made cuts do not exist on the site.

Treatment Areas

Treatment areas at a minimum must achieve the following:

- Treatment areas must be elevated above groundwater or bedrock as defined by the Definitions 8.3.4 of the Regulations of the El Paso County Board of Health, Chapter 8, *OWTS Regulations*, amended May 23, 2018;
- Each lot (after purchase but prior to construction of an OWTS) will require an OWTS Site Evaluation report prepared per *the Regulations of the El Paso County Board of Health, Chapter 8, OWTS Regulations*. During site reconnaissance, a minimum of two 8-foot deep profile pits will need to be excavated in the vicinity of the proposed treatment area;
- Comply with any physical setback requirements of Table 7-1 of the El Paso County Department of Health and Environment (EPCHDE);
- Treatment areas are to be located a minimum 100 feet from any well (existing or proposed), including those located on adjacent properties per Table 7-2 per the EPCHDE;
- Treatment areas are to be located a minimum distance of 100 feet from any well location;
- Treatment areas are also to be located a minimum of 50 feet from any spring, lake, water course, irrigation ditch, stream or wetland;
- Other setbacks for the treatment area include, but are not limited to, a minimum of 10 feet from property lines, dry gulches, cut banks and fill areas (from the crest).

DOCUMENT REVIEW

RMG has reviewed the provided replat map (prepared by MVE, Inc. Engineering) and identified the soil conditions anticipated to be encountered during construction of the proposed OWTS for 515 Struthers Loop. Based on our site observations and a review of documented Natural Resource Conservation Service – NRCS Web Soil Survey data provided by websoilsurvey.nrcs.usda.gov. The Web Soil Survey Descriptions are presented below. A review of FEMA Map No. 08041C0287G, effective December 7, 2018 indicates that the proposed treatment areas are not located within an identified floodplain.

SOIL EVALUATION

Personnel of Geoquest, LLC reportedly performed a soil evaluation to include four 8-foot deep profile pits on July 5, 2021 (Profile Pit PP-1 and PP-2 for Lot 1 and Profile Pit PP-1 and PP-2 for Lot 2). The profile pits were excavated in areas that appeared most likely to be used for residential construction. The Profile Pit Logs are presented in the *Profile Pit Evaluation* reports referenced above. A Septic Suitability map is presented in Figure 3.

The soil conditions as indicated by the NRCS data are anticipated to consist of the Peyton-Pring Complex with 3 to 8 percent slopes and the Tomah-Crowfoot Complex with 8 to 15 percent slopes. Properties of the Peyton-Pring Complex include well drained soils, depth of the water table is anticipated to be greater than 80 inches, runoff is anticipated to be low, frequency of flooding and/or ponding is none, and landforms include hills. Properties of the Tomah-Crowfoot Complex include well drained soils, depth of the water table is anticipated to be greater than 80 inches, runoff is anticipated to be medium, frequency of flooding and/or ponding is none, and landforms include alluvial fans and hills.

The USDA Soil Survey Map is presented in Figure 4.

Bedrock was not reported in the profile pits performed by Geoquest, LLC. Neither groundwater nor redoximorphic features (indicating the fluctuation of groundwater or higher groundwater levels) were reported in the profile pits.

CONCLUSIONS

In summary, it is our opinion the site is suitable for individual on-site wastewater treatment systems within the cited limitations. Contamination of surface and subsurface water resources should not occur if the treatment areas are to be evaluated and installed according to El Paso County Health Department and state guidelines in conjunction with proper maintenance.

LIMITATIONS

The information provided in this report is based upon the subsurface conditions observed in the profile pit excavations and accepted engineering procedures. The subsurface conditions encountered in the excavation for the treatment area may vary from those encountered in the profile pit excavations. Therefore, depth to limiting or restrictive conditions, bedrock, and groundwater may be different from the results reported in this letter.

Individual wastewater treatment systems are proposed for each new lot. Additional OWTS site evaluations for the proposed lots will need to be performed in accordance with the applicable health department codes prior to construction.

I hope this provides the information you have requested. Should you have questions, please feel free to contact our office.

Cordially,

Reviewed by,

RMG – Rocky Mountain Group

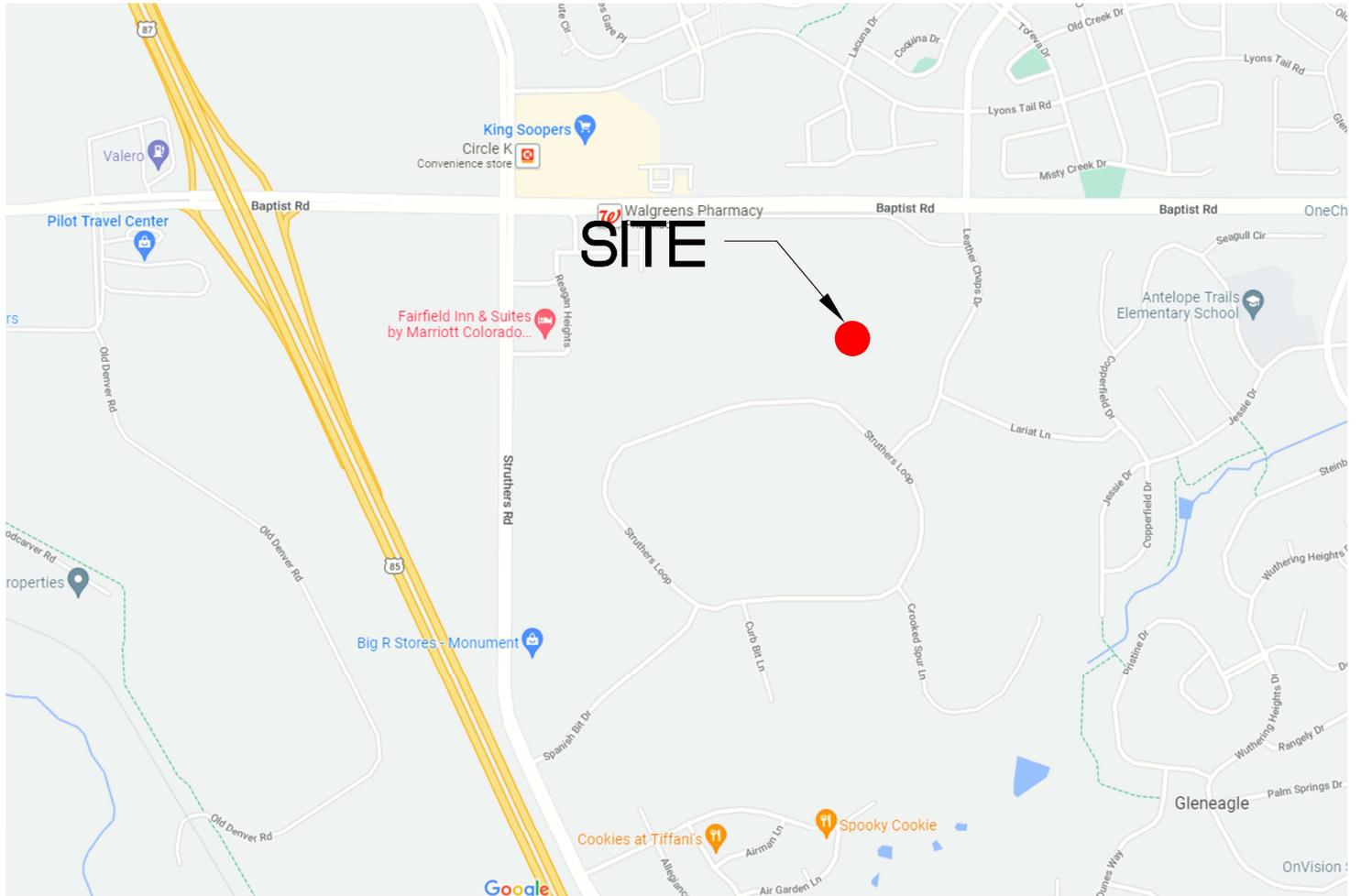
RMG – Rocky Mountain Group



Kelli Zigler
Project Geologist

Tony Munger, P.E.
Geotechnical Project Manager





NOT TO SCALE

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Engineers / Architects

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2910 AUSTIN BLUFFS PKWY, SUITE 100,
COLORADO SPRINGS, CO 80918
(719) 548-0600 ~ WWW.RMGENGINEERS.COM
SOUTHERN COLORADO, DENVER METRO, NORTHERN COLORADO

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SITE VICINITY MAP

515 STRUTHERS LOOP
PAIR-A-DISE SUBDIVISION FILING NO. 1
EL PASO COUNTY, COLORADO
AARON ATWOOD

JOB No. 188423

FIG No. 1

DATE 4-8-2022



NOT TO SCALE



DENOTES APPROXIMATE LOCATION OF PROFILE PITS OBSERVED BY GEOQUEST, LLC, JOB NO. 21-0794 AND 21-0795, DATED JULY 30, 2021

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SOUTHERN COLORADO OFFICE
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SOUTHERN COLORADO, DENVER METRO, NORTHERN COLORADO

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PROFILE PIT LOCATION MAP

515 STRUTHERS LOOP
PAIR-A-DISE SUBDIVISION FILING NO. 1
EL PASO COUNTY, COLORADO
AARON ATWOOD

JOB No. 188423

FIG No. 2

DATE 4-8-2022



NOT TO SCALE



DENOTES PRIMARY AND ALTERNATE SEPTIC LOCATIONS

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SEPTIC SUITABILITY MAP

515 STRUTHERS LOOP
PAIR-A-DISE SUBDIVISION FILING NO. 1
EL PASO COUNTY, COLORADO
AARON ATWOOD

JOB No. 188423

FIG No. 3

DATE 4-8-2022



68 - PEYTON-PRING COMPLEX, 3 TO 8 PERCENT SLOPES
 93 - TOMAH-CROWFOOT COMPLEX, 8 TO 15 PERCENT SLOPES



NOT TO SCALE

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USDA SOIL SURVEY MAP

515 STRUTHERS LOOP
 PAIR-A-DISE SUBDIVISION FILING NO. 1
 EL PASO COUNTY, COLORADO
 AARON ATWOOD

JOB No. 188423

FIG No. 4

DATE 4-8-2022



6825 Silver Ponds Heights #101
Colorado Springs, CO 80908
(719) 481-4560

To Whom It May Concern,

Attached are the results of the Profile Pit Evaluation performed for your site. **Completion of the report does NOT automatically place you in the queue to complete a design.** We require the following information is provided to us prior to placing a job in the queue.

1. Accurate number of bedrooms either proposed or existing in the house. Be sure to include all rooms with closets.
2. Designs for new construction also requires submittal of a site plan. This shall include at a minimum the following: all property lines dimensioned with lengths and angles, accurate dimensions from the house to property lines and corners, proposed construction of all buildings, location of Well with dimensions from structures and property lines, location of driveway, drawings **MUST** be to Scale, and slope or topography lines. **Additional fees will be assessed for incomplete and unclear site plans.** A surveyor's CADD file is preferred (.DWG or .DXF). It is your responsibility to provide correct information. Additional fees will be assessed if any information changes.
3. Site plans that are provided as DWG / DXF Files are exempt from redrawing fees. PDF Files of Surveyor's Site Plans for New Builds **WILL** incur a \$50 Redrawing Fee. Hand drawn Site Plans for New Builds **WILL** incur a \$200-\$400 Redrawing Fee and a site walk will be required. Septic Repair Designs do **NOT** incur Additional Fees.

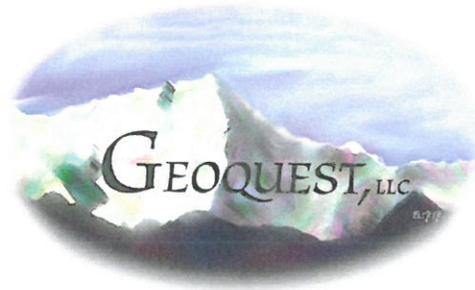
Please read the evaluation to determine if the system for your site shall be designed by a licensed engineer or if a conventional design is allowed. If a conventional system is allowed, a design document is still required by the health department, this may be provided by an engineer, installer, or builder familiar with On-Site Wastewater Treatment System (OWTS) regulations. OWTS Designs and Record Drawings are done at an additional cost. Please contact the office for pricing. If installing in El Paso County, an Engineer's Record Drawing (additional fee) is required for final acceptance by the health department. If installing in a different county please verify with the installer who will be completing the Record Drawing. We are happy to complete this for an additional fee.

Per county and state regulations, the Soil Treatment Area (STA), commonly referred to as the leach field, shall be installed adjacent to the test pit locations. **Any alteration or deviation from the tested locations will require additional testing at an additional cost.**

The homeowner shall be made aware of the responsibilities of owning a septic system. Please contact your local health department for homeowner responsibilities and Do's and Don'ts.

Geoquest, LLC provides no warranty for the evaluation or design (should this be completed). This evaluation and design have been prepared in compliance with the state and the local governing public health department's regulations. However, the test procedures are limited in determining soil absorption across the proposed STA. Many factors contribute to soil absorption outside of our control as well as unknown water usage. It is important to follow proper OWTS installation practices to minimize risk.

Please feel free to contact us at (719) 481-4560, if you have any questions.



6825 Silver Ponds Heights #101
Colorado Springs, CO 80908
(719) 481-4560

PROFILE PIT EVALUATION

FOR

AARON ATWOOD

JOB #21-0794

Lot #38,
Chaparral Hills Subdivision,
515 Struthers Loop,
El Paso County,
Colorado

Sincerely,


Charles E. Milligan, P.E.



PROFILE PIT FINDINGS

Enclosed are the results of the profile pit for the septic system to be installed at **Lot #38, Chaparral Hills Subdivision, 515 Struthers Loop, El Paso County, Colorado**. The location of the test pits was determined by Aaron Atwood. The residence will not be on a public water system. The number of bedrooms in the design for the residence is unknown. Due to the natural slope of the property, the entire system will feed to the southwest at approximately 6% at least 20 feet. All applicable portions of the El Paso County Public Health Department Onsite Wastewater Treatment System Regulations (OWTS) must be complied with for the installation of the treatment system.

The inspection was performed on July 5, 2021, in accordance with Table 10-1 of the **E.P.C.P.H. OWTS Regulations**.

Soil Profile #1:

- 0 to 8"** - Topsoil - loam, organic composition.
- 8" to 62"** - USDA soil texture sandy loam, soil type 2A, structure shape granular, structure grade 1, non-cemented, LTAR 0.50, dark brown in color, 10 YR 3/3, soil type 2A with 4% rock.
- 62" to 8'** - USDA soil texture sandy clay loam, soil type 3A, structure shape blocky, structure grade 1, non-cemented, LTAR 0.30, yellowish brown in color, 10 YR 5/6, soil type 3A with 0% rock.

Soil Profile #2:

- 0 to 8"** - Topsoil - loam, organic composition.
- 8" to 75"** - USDA soil texture sandy loam, soil type 2A, structure shape granular, structure grade 1, non-cemented, LTAR 0.50, light yellowish brown in color, 10 YR 6/4, soil type 2A with 12 % rock.
- 75" to 8'** - USDA soil texture sandy clay loam, soil type 3A, structure shape blocky, structure grade 1, non-cemented, LTAR 0.30, strong brown in color, 7.5 YR 5/6, soil type 3A with 0% rock.

Groundwater was not encountered during the inspection. Bedrock was not encountered during the inspection. No known wells were observed within 100 feet of the proposed system. **All setbacks shall conform to county regulations.**

Due to encountering USDA soil type 3A, the septic system to be installed on this site shall be designed by a Colorado Licensed Engineer. Based on the observed conditions, we feel a design based on an LTAR of 0.30 GPD/SF (USDA soil type 3A, treatment soil, treatment level 1) is reasonable. Maximum depth of the installation shall not be deeper than 4 feet below the existing grade.

If during construction of the field itself, subsurface conditions change considerably or if the location of the proposed field changes, this office shall be notified to determine whether the conditions are adequate for the system as designed or whether a new system needs to be designed.

Weather conditions at the time of the test consisted of clear skies and warm temperatures.

PROFILE PIT LOG - Profile Pit #1

JOB#: 21-0794
 DATE EVALUATED: 05 Jul 2021
 EQUIPMENT USED: Mini-excavator

DEPTH (in ft.)	SYMBOL	SAMPLES	WATER %	SOIL TYPE
0-8"	<u>TOPSOIL</u>			
	Loam Organic Composition			
8"-62"	<u>Sand</u>			
	Fine-coarse Grained Low-moderate Density Low Moisture Content Low-moderate Clay Content Low Cohesion Low Plasticity Dark Brown Color 10YR 3/3			2A
	USDA Soil Texture: Sandy Loam USDA Soil Type: 2A USDA Structure Shape: Granular USDA Structure Grade: 1 Cementation Class: Non-cemented Long Term Acceptance Rate (LTAR, Treatment Level 1): 0.50 Soil Type 2A w/ 4% Rock			
62"-8'	<u>Clayey Sand</u>			3A
	Fine-coarse Grained Moderate Density Moderate-high Moisture Content Moderate Clay Content Moderate Cohesion Moderate Plasticity Yellowish Brown Color 10YR 5/6			
	USDA Soil Texture: Sandy Clay Loam USDA Soil Type: 3A USDA Structure Shape: Blocky USDA Structure Grade: 1 Cementation Class: Non-cemented Long Term Acceptance Rate (LTAR, Treatment Level 1): 0.30 Soil Type 3A w/ 0% Rock			

LTAR to be Used for OWTS Sizing: 0.30GPD/SF (USDA Type 3A, Treatment soil, Treatment Level 1)
Depth to Groundwater (Permanent or Seasonal): Not Encountered
Depth to Bedrock and Type: Not Encountered
Depth to Proposed Infiltrative Surface from Ground Surface: Unknown (Maximum 4 ft Below Existing Ground Surface)
Soil Treatment Area Slope and Direction: SW @6%

Note: See El Paso County Board of Health Regulation Chapter 8: On-Site Wastewater Treatments Systems (OWTS) Regulations for Additional Information. Refer to Table 10-1 for Corresponding LTAR if Treatment Level 2, 2N, 3, or 3N will be Implemented in the Design of the OWTS. System Sizing Depends on a Number of Factors (i.e. LTAR, # of Bedrooms, Type of Soil Treatment Area (STA), Method of Transfer to the STA (Gravity, Dosed, or Pressure Dosed), and Type of Storage / Distribution Media Used in the STA)

Project: 21-0794
 Sheet: 1 of 2
 Date: 13 Jul 2021
 Scale: 1/4" = 1'
 Drawn by: mtj
 Checked by: cem

Project Name and Address

Aaron Atwood

515 Struthers Loop
 Lot 38
 Chaparral Hills
 Sch. No. 7136002005
 El Paso County, Colorado

GEOQUEST, LLC.

6825 SILVER PONDS HEIGHTS
 SUITE 101
 COLORADO SPRINGS, CO
 80908

OFFICE: (719) 481-4560
 FAX: (719) 481-9204

PROFILE PIT LOG - Profile Pit #2

JOB#: 21-0794
 DATE EVALUATED: 05 Jul 2021
 EQUIPMENT USED: Mini-excavator

DEPTH (in ft.)	SYMBOL	SAMPLES	WATER %	SOIL TYPE
0-8"	TOPSOIL			
	Loam Organic Composition			
8"-75"	Sand			2A
	Fine-coarse Grained Low-moderate Density Low Moisture Content Low-moderate Clay Content Low Cohesion Low Plasticity Light Yellowish Brown Color 10YR 6/4			
	USDA Soil Texture: Sandy Loam USDA Soil Type: 2A USDA Structure Shape: Granular USDA Structure Grade: 1 Cementation Class: Non-cemented Long Term Acceptance Rate (LTAR, Treatment Level 1): 0.50 Soil Type 2A w/ 12% Rock			
75"-8'	Clayey Sand			3A
	Fine-coarse Grained Moderate Density Moderate-high Moisture Content Moderate Clay Content Low-moderate Cohesion Low-moderate Plasticity Strong Brown Color 7.5YR 5/6			
	USDA Soil Texture: Sandy Clay Loam USDA Soil Type: 3A USDA Structure Shape: Blocky USDA Structure Grade: 1 Cementation Class: Non-cemented Long Term Acceptance Rate (LTAR, Treatment Level 1): 0.30 Soil Type 3A w/ 0% Rock			

LTAR to be Used for OWTS Sizing: 0.30GPD/SF (USDA Type 3A, Treatment soil, Treatment Level 1)
Depth to Groundwater (Permanent or Seasonal): Not Encountered
Depth to Bedrock and Type: Not Encountered
Depth to Proposed Infiltrative Surface from Ground Surface: Unknown (Maximum 4 ft Below Existing Ground Surface)
Soil Treatment Area Slope and Direction: SW @6%

Note: See El Paso County Board of Health Regulation Chapter 8: On-Site Wastewater Treatments Systems (OWTS) Regulations for Additional Information. Refer to Table 10-1 for Corresponding LTAR if Treatment Level 2, 2N, 3, or 3N will be Implemented in the Design of the OWTS. System Sizing Depends on a Number of Factors (i.e. LTAR, # of Bedrooms, Type of Soil Treatment Area (STA), Method of Transfer to the STA (Gravity, Dosed, or Pressure Dosed), and Type of Storage / Distribution Media Used in the STA)

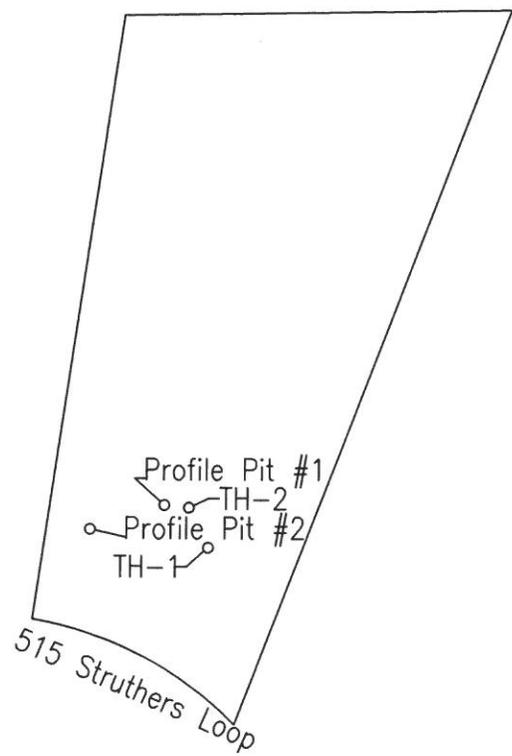
Project: 21-0794	Project Name and Address
Sheet: 2 of 2	
Date: 13 Jul 2021	Aaron Atwood
	515 Struthers Loop
	Lot 38
Scale: 1/4" = 1'	Chaparral Hills
Drawn by: mtj	Sch. No. 7136002005
Checked by: cem	El Paso County, Colorado

GEOQUEST, LLC.
6825 SILVER PONDS HEIGHTS SUITE 101 COLORADO SPRINGS, CO 80908
OFFICE: (719) 481-4560 FAX: (719) 481-9204

GEOQUEST LLC

SITE MAP

Lot 38
Chaparral Hills
515 Struthers Loop
El Paso County
Colorado
Job #21-0794



Location from Southwest Lot Corner to Profile Pit #1:

N. 49° E. - 178'

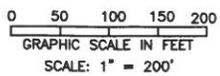
Location from Profile Pit #1 to Profile Pit #2:

S. 71° W. - 79'

GPS Coordinates:

Pit 1; N. 39° 03' 11.89" W. 104° 50' 12.03"

Pit 2; N. 39° 03' 11.67" W. 104° 50' 13.02"





6825 Silver Ponds Heights #101
Colorado Springs, CO 80908
(719) 481-4560

To Whom It May Concern,

Attached are the results of the Profile Pit Evaluation performed for your site. **Completion of the report does NOT automatically place you in the queue to complete a design.** We require the following information is provided to us prior to placing a job in the queue.

1. Accurate number of bedrooms either proposed or existing in the house. Be sure to include all rooms with closets.
2. Designs for new construction also requires submittal of a site plan. This shall include at a minimum the following: all property lines dimensioned with lengths and angles, accurate dimensions from the house to property lines and corners, proposed construction of all buildings, location of Well with dimensions from structures and property lines, location of driveway, drawings **MUST** be to Scale, and slope or topography lines. **Additional fees will be assessed for incomplete and unclear site plans.** A surveyor's CADD file is preferred (.DWG or .DXF). It is your responsibility to provide correct information. Additional fees will be assessed if any information changes.
3. Site plans that are provided as DWG / DXF Files are exempt from redrawing fees. PDF Files of Surveyor's Site Plans for New Builds **WILL** incur a \$50 Redrawing Fee. Hand drawn Site Plans for New Builds **WILL** incur a \$200-\$400 Redrawing Fee and a site walk will be required. Septic Repair Designs do **NOT** incur Additional Fees.

Please read the evaluation to determine if the system for your site shall be designed by a licensed engineer or if a conventional design is allowed. If a conventional system is allowed, a design document is still required by the health department, this may be provided by an engineer, installer, or builder familiar with On-Site Wastewater Treatment System (OWTS) regulations. OWTS Designs and Record Drawings are done at an additional cost. Please contact the office for pricing. If installing in El Paso County, an Engineer's Record Drawing (additional fee) is required for final acceptance by the health department. If installing in a different county please verify with the installer who will be completing the Record Drawing. We are happy to complete this for an additional fee.

Per county and state regulations, the Soil Treatment Area (STA), commonly referred to as the leach field, shall be installed adjacent to the test pit locations. **Any alteration or deviation from the tested locations will require additional testing at an additional cost.**

The homeowner shall be made aware of the responsibilities of owning a septic system. Please contact your local health department for homeowner responsibilities and Do's and Don'ts.

Geoquest, LLC provides no warranty for the evaluation or design (should this be completed). This evaluation and design have been prepared in compliance with the state and the local governing public health department's regulations. However, the test procedures are limited in determining soil absorption across the proposed STA. Many factors contribute to soil absorption outside of our control as well as unknown water usage. It is important to follow proper OWTS installation practices to minimize risk.

Please feel free to contact us at (719) 481-4560, if you have any questions.



6825 Silver Ponds Heights #101
Colorado Springs, CO 80908
(719) 481-4560

PROFILE PIT EVALUATION

FOR

AARON ATWOOD

JOB #21-0795

Lot #38,
Chaparral Hills Subdivision,
515 Struthers Loop,
El Paso County,
Colorado

Sincerely,


Charles E. Milligan, P.E.



PROFILE PIT FINDINGS

Enclosed are the results of the profile pit for the septic system to be installed at **Lot #38, Chaparral Hills Subdivision, 515 Struthers Loop, El Paso County, Colorado**. The location of the test pits was determined by Aaron Atwood. The residence will not be on a public water system. The number of bedrooms in the design for the residence is unknown. Due to the natural slope of the property, the entire system will feed to the west at approximately 5% at least 20 feet. All applicable portions of the El Paso County Public Health Department Onsite Wastewater Treatment System Regulations (OWTS) must be complied with for the installation of the treatment system.

The inspection was performed on July 5, 2021, in accordance with Table 10-1 of the **E.P.C.P.H. OWTS Regulations**.

Soil Profile #1:

- 0 to 6"** - Topsoil - loam, organic composition.
- 6" to 68"** - USDA soil texture sandy loam, soil type 2A, structure shape granular, structure grade 1, non-cemented, LTAR 0.50, light gray in color, 10 YR 7/2, soil type 2A with 17% rock.
- 68" to 8'** - USDA soil texture sandy clay loam, soil type 3A, structure shape blocky, structure grade 1, non-cemented, LTAR 0.30, light gray in color, 10 YR 7/2, soil type 3A with 0% rock.

Soil Profile #2:

- 0 to 6"** - Topsoil - loam, organic composition.
- 6" to 63"** - USDA soil texture sandy loam, soil type 2A, structure shape granular, structure grade 1, non-cemented, LTAR 0.50, brown in color, 7.5 YR 5/4, soil type 2A with 16% rock.
- 63" to 8'** - USDA soil texture sandy clay loam, soil type 3A, structure shape blocky, structure grade 1, non-cemented, LTAR 0.30, strong brown in color, 7.5 YR 4/6, soil type 3A with 0% rock.

Groundwater was not encountered during the inspection. Bedrock was not encountered during the inspection. No known wells were observed within 100 feet of the proposed system. **All setbacks shall conform to county regulations.**

Due to encountering USDA soil type 3A, the septic system to be installed on this site shall be designed by a Colorado Licensed Engineer. Based on the observed conditions, we feel a design based on an LTAR of 0.30 GPD/SF (USDA soil type 3A, treatment soil, treatment level 1) is reasonable. Maximum depth of the installation shall not be deeper than 4 feet below the existing grade.

If during construction of the field itself, subsurface conditions change considerably or if the location of the proposed field changes, this office shall be notified to determine whether the conditions are adequate for the system as designed or whether a new system needs to be designed.

Weather conditions at the time of the test consisted of clear skies with hot temperatures.

PROFILE PIT LOG - Profile Pit #1

JOB#: 21-0795
 DATE EVALUATED: 05 Jul 2021
 EQUIPMENT USED: Mini-excavator

DEPTH (in ft.)	SYMBOL	SAMPLES	WATER %	SOIL TYPE
0-6"	TOPSOIL			
	Loam Organic Composition			
6"-68"	Sand			2A
	Fine-coarse Grained Low Density Low-moderate Moisture Content Low-moderate Clay Content Low-moderate Cohesion Low-moderate Plasticity Light Gray Color 10YR 7/2			
	USDA Soil Texture: Sandy Loam USDA Soil Type: 2A USDA Structure Shape: Granular USDA Structure Grade: 1 Cementation Class: Non-cemented Long Term Acceptance Rate (LTAR, Treatment Level 1): 0.50 Soil Type 2A w/ 17% Rock			
68"-8'	Clayey Sand			3A
	Fine-medium Grained Moderate Density Moderate-high Moisture Content Moderate Clay Content Moderate Cohesion Moderate Plasticity Light Gray Color 10YR 7/2			
	USDA Soil Texture: Sandy Clay Loam USDA Soil Type: 3A USDA Structure Shape: Blocky USDA Structure Grade: 1 Cementation Class: Non-cemented Long Term Acceptance Rate (LTAR, Treatment Level 1): 0.30 Soil Type 3A w/ 0% Rock			

LTAR to be Used for OWTS Sizing: 0.30GPD/SF (USDA Type 3A, Treatment soil, Treatment Level 1)
Depth to Groundwater (Permanent or Seasonal): Not Encountered
Depth to Bedrock and Type: Not Encountered
Depth to Proposed Infiltrative Surface from Ground Surface: Unknown (Maximum 4 ft Below Existing Ground Surface)
Soil Treatment Area Slope and Direction: West @5%

Note: See El Paso County Board of Health Regulation Chapter 8: On-Site Wastewater Treatments Systems (OWTS) Regulations for Additional Information. Refer to Table 10-1 for Corresponding LTAR if Treatment Level 2, 2N, 3, or 3N will be Implemented in the Design of the OWTS. System Sizing Depends on a Number of Factors (i.e. LTAR, # of Bedrooms, Type of Soil Treatment Area (STA), Method of Transfer to the STA (Gravity, Dosed, or Pressure Dosed), and Type of Storage / Distribution Media Used in the STA)

Project: 21-0795	Project Name and Address
Sheet: 1 of 2	
Date: 16 Jul 2021	Aaron Atwood 515 Struthers Loop Lot 38 Chaparral Hills Sch. No. 7136002005 El Paso County, Colorado
Scale: 1/4" = 1'	
Drawn by: mtj	
Checked by: cem	

GEOQUEST, LLC.
6825 SILVER PONDS HEIGHTS SUITE 101 COLORADO SPRINGS, CO 80908
OFFICE: (719) 481-4560 FAX: (719) 481-9204

PROFILE PIT LOG - Profile Pit #2

JOB#: 21-0795
 DATE EVALUATED: 05 Jul 2021
 EQUIPMENT USED: Mini-excavator

DEPTH (in ft.)	SYMBOL	SAMPLES	WATER %	SOIL TYPE
0-6"				
TOPSOIL Loam Organic Composition				
6"-63"				2A
Sand Fine-coarse Grained USDA Soil Texture: Sandy Loam Low Density USDA Soil Type: 2A Low-moderate Moisture Content USDA Structure Shape: Granular Low-moderate Clay Content USDA Structure Grade: 1 Low-moderate Cohesion Cementation Class: Non-cemented Low-moderate Plasticity Long Term Acceptance Rate (LTAR, Treatment Level 1): 0.50 Brown Color Soil Type 2A w/ 16% Rock 7.5YR 5/4				
63"-8'				3A
Clayey Sand Fine-medium Grained USDA Soil Texture: Sandy Clay Loam Moderate Density USDA Soil Type: 3A Moderate-high Moisture Content USDA Structure Shape: Blocky Moderate Clay Content USDA Structure Grade: 1 Moderate Cohesion Cementation Class: Non-cemented Moderate Plasticity Long Term Acceptance Rate (LTAR, Treatment Level 1): 0.30 Strong Brown Color Soil Type 3A w/ 0% Rock 7.5YR 4/6				

LTAR to be Used for OWTS Sizing: 0.30GPD/SF (USDA Type 3A, Treatment soil, Treatment Level 1)
Depth to Groundwater (Permanent or Seasonal): Not Encountered
Depth to Bedrock and Type: Not Encountered
Depth to Proposed Infiltrative Surface from Ground Surface: Unknown (Maximum 4 ft Below Existing Ground Surface)
Soil Treatment Area Slope and Direction: West @5%

Note: See El Paso County Board of Health Regulation Chapter 8: On-Site Wastewater Treatments Systems (OWTS) Regulations for Additional Information. Refer to Table 10-1 for Corresponding LTAR if Treatment Level 2, 2N, 3, or 3N will be Implemented in the Design of the OWTS. System Sizing Depends on a Number of Factors (i.e. LTAR, # of Bedrooms, Type of Soil Treatment Area (STA), Method of Transfer to the STA (Gravity, Dosed, or Pressure Dosed), and Type of Storage / Distribution Media Used in the STA)

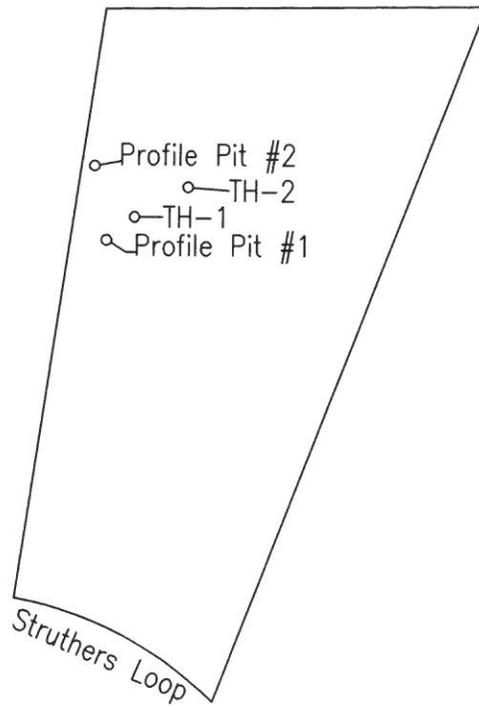
Project: 21-0795	Project Name and Address Aaron Atwood 515 Struthers Loop Lot 38 Chaparral Hills Sch. No. 7136002005 El Paso County, Colorado
Sheet: 2 of 2	
Date: 16 Jul 2021	
Scale: 1/4" = 1'	
Drawn by: mtj	
Checked by: cem	

GEOQUEST, LLC. 6825 SILVER PONDS HEIGHTS SUITE 101 COLORADO SPRINGS, CO 80908 OFFICE: (719) 481-4560 FAX: (719) 481-9204	
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GEOQUEST LLC

SITE MAP

Lot 38
Chaparral Hills
515 Struthers Loop
El Paso County
Colorado
Job #21-0795



Location from Northwest Lot Corner to Profile Pit #1:

Due South - 243'

Location from Profile Pit #1 to Profile Pit #2:

N. 09° W. - 79'

GPS Coordinates:

Pit 1; N. 39° 03' 14.52" W. 104° 50' 12.55"

Pit 2; N. 39° 03' 15.30" W. 104° 50' 12.72"



0 50 100 150 200
GRAPHIC SCALE IN FEET
SCALE: 1" = 200'