

Architectural
Structural
Geotechnical



Materials Testing
Forensic
Civil/Planning

Job No. 192447

May 2, 2023

Garrett Graupner
14710 Tanner Trail
Elbert, CO 80106

Re: Wastewater Study
Graupner Subdivision
Tanner Road
El Paso County, Colorado

Ref: *Survey, Graupner Subdivision, prepared by Eagle Land Surveying, Inc., dated December 26, 2022, Job Number 22140-02.*

Dear Mr. Graupner:

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:

- Schedule No. 4132000010 – currently addressed as 14710 Tanner Trail, is zoned "RR-5" – *Residential Rural*.

The approximate location of the site is shown on the Site Vicinity Map, Figure 1.

PROJECT DESCRIPITON

The site consists of approximately 41.06 acres and is partially developed. The proposed subdivision is to consist of 4 lots, three of which are to range between 5.00 to 5.027 acres. The fourth lot will comprise the remaining acreage of approximately 25.989 acres. The existing single-family residence, sheds, miscellaneous structures, well and septic are to remain on the larger lot. The Proposed Lot Layout is presented in Figure 2.

Each lot is to be serviced by an on-site wastewater treatment system (OWTS) and an individual water supply well. It is our understanding site grading activities are to be limited to the extent necessary to facilitate construction of individual homes, drainage, and utilities. The site is to be accessed from the existing gravel driveway that extends south and east from Tanner Trail. The existing driveway is not proposed to be converted to a public County road.

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. *Soil and Geology Study, Graupner Subdivision, Tanner Road, El Paso County, Colorado*, prepared by RMG – Rocky Mountain Group, Job No. 192447, dated May 2, 2023.

The findings, conclusions and recommendations contained in this report was considered during the preparation of this report.

SITE CONDITIONS

Personnel of RMG performed a reconnaissance visit on March 10, 2023. 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. Two test pits were performed on the proposed new lots. A Test Boring and Test Pit Location Plan is presented in Figure 3.

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 41.06-acre parcel:

- A well currently **does not** exist on the existing 41.06-acre site;
- No runoff or irrigation features anticipated to cause deleterious effects to treatment systems on the site were observed;
- A drainageway exist on the northern portion of property. The entire site lies outside the designated floodway or floodplain;
- 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:

- The treatment areas must be 4 feet 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*, effective July 7, 2018;
- Prior to construction of an OWTS, an OWTS design prepared per *the Regulations of the El Paso County Board of Health, Chapter 8, OWTS Regulations* will need to be completed.

A scaled site plan and engineered design will also be required prior to obtaining a building permit;

- Comply with any physical setback requirements of Table 7-1 of the El Paso County Department of Health and Environment (EPCDHE);
- 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 EPCDHE;
- Treatment areas must also be located a minimum 50 feet from any spring, lake, water course, irrigation ditch, stream or wetland, and 25 feet from dry gulches;
- Other setbacks include the treatment area to be located a minimum 10 feet from property lines, cut banks and fill areas (from the crest);
- The new lots shall be laid out to ensure that the proposed OWTS does not fall within any restricted areas, (e.g. utility easements, right of ways). Based on the test pit observations, each lot has a minimum of two locations for the OWTS.

Contamination of surface and subsurface water resources should not occur if the treatment areas are evaluated and installed according to El Paso County Health Department and State Guidelines in conjunction with proper maintenance.

DOCUMENT REVIEW

RMG has reviewed the above referenced survey reflecting the proposed lot layout. We have identified the soil conditions anticipated to be encountered during construction of the proposed OWTS for the three new lots. We reviewed the Natural Resource Conservation Service - NRCS data provided by websoilsurvey.nrcs.usda.gov. and the Soil Survey Descriptions are presented below. A review of FEMA Map No. 08041C0340G, effective December 7, 2018 indicates that the proposed treatment areas are not located within an identified floodplain.

SOIL EVALUATION

Personnel of RMG performed a soil evaluation to include two test pits 6 to 8-foot deep on March 24, 2023 (Test Pit TP-1 and TP-2), utilizing the visual and tactile method for the evaluation of the site soils. The test pits were excavated in areas that appeared most likely to be used for residential construction. The Test Pit Logs are presented in Figure 4. A Septic Suitability map is presented in Figure 5.

The soil conditions as indicated by the NRCS data are anticipated to consist of:

- 71 – Pring coarse sandy loam, 3 to 8 percent slopes. The Pring coarse sandy loam encompasses the majority of the property. Properties of the Pring coarse sandy loam include, well-drained soil, depth of the water table is anticipated to be more than 80 inches, runoff is anticipated to be low, frequency of flooding is none and ponding is none. Landforms include hills. The hydrologic soil group of the unit is B.
- 19 – Columbine gravelly sand loam, 0 to 3 percent slopes. The Columbine encompasses a small section near the northeast corner of the property, on the larger lot, where new construction is currently not proposed. For this reason, the Columbine gravelly sand loam is not described in detail.

A USDA Soil Survey Map is presented in Figure 6.

Groundwater was not encountered in the test pits. Bedrock (limiting layer) was encountered in one of the test pits performed by RMG.

An OWTS is proposed for each new lot and should conform to the recommendations of a future OWTS site evaluation, performed in accordance with the applicable health department codes prior to construction. This report may require additional test pits in the vicinity of the proposed treatment field. A minimum separation of 4 feet shall be maintained from groundwater and bedrock to the infiltrative surface.

Redoximorphic features indicating the fluctuation of groundwater or higher ground water levels were not observed in the test pits.

CONCLUSIONS

In summary, it is our opinion the site is suitable for individual on-site wastewater treatment systems within the cited limitations. There are no foreseeable or stated construction related issues or land use changes proposed at this time.

Soil and groundwater conditions at the site are suitable for individual treatment systems. It should be noted that the LTAR values stated above are for the test pit locations performed for this report only. The LTAR values may change throughout the site. If an LTAR value of less than 0.35 (or soil types 3A to 5) or greater than 0.80 (soil type 0) are encountered at the time of the site specific OWTS evaluation, an "engineered system" will be required.

Additionally, based on the depth of the limiting layer (bedrock) encountered at a depth of 6 feet below the existing ground surface in the test pits but at the ground surface in the test borings, the maximum depth of the OWTS components may be limited to 2 feet below the existing ground surface or mound systems (above surface) may be required.

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 test pit excavations. Therefore, depth to limiting or restrictive conditions, bedrock, and groundwater may be different from the results reported in this letter.

An OWTS site evaluation 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.
Sr. Geotechnical Project Manager



NOT TO SCALE
 BASE MAP PROVIDED BY MAPQUEST



ROCKY MOUNTAIN GROUP

Southern Office
 Colorado Springs, CO
 80918
 (719) 548-0600
Central Office:
 Englewood, CO 80112
 (303) 688-9475
Northern Office:
 Greeley / Evans, CO 80620
 (970) 330-1071

SITE VICINITY MAP

GRAUPNER SUBDIVISION
 TANNER TRAIL
 EL PASO COUNTY, CO
 GARRETT GRAUPNER

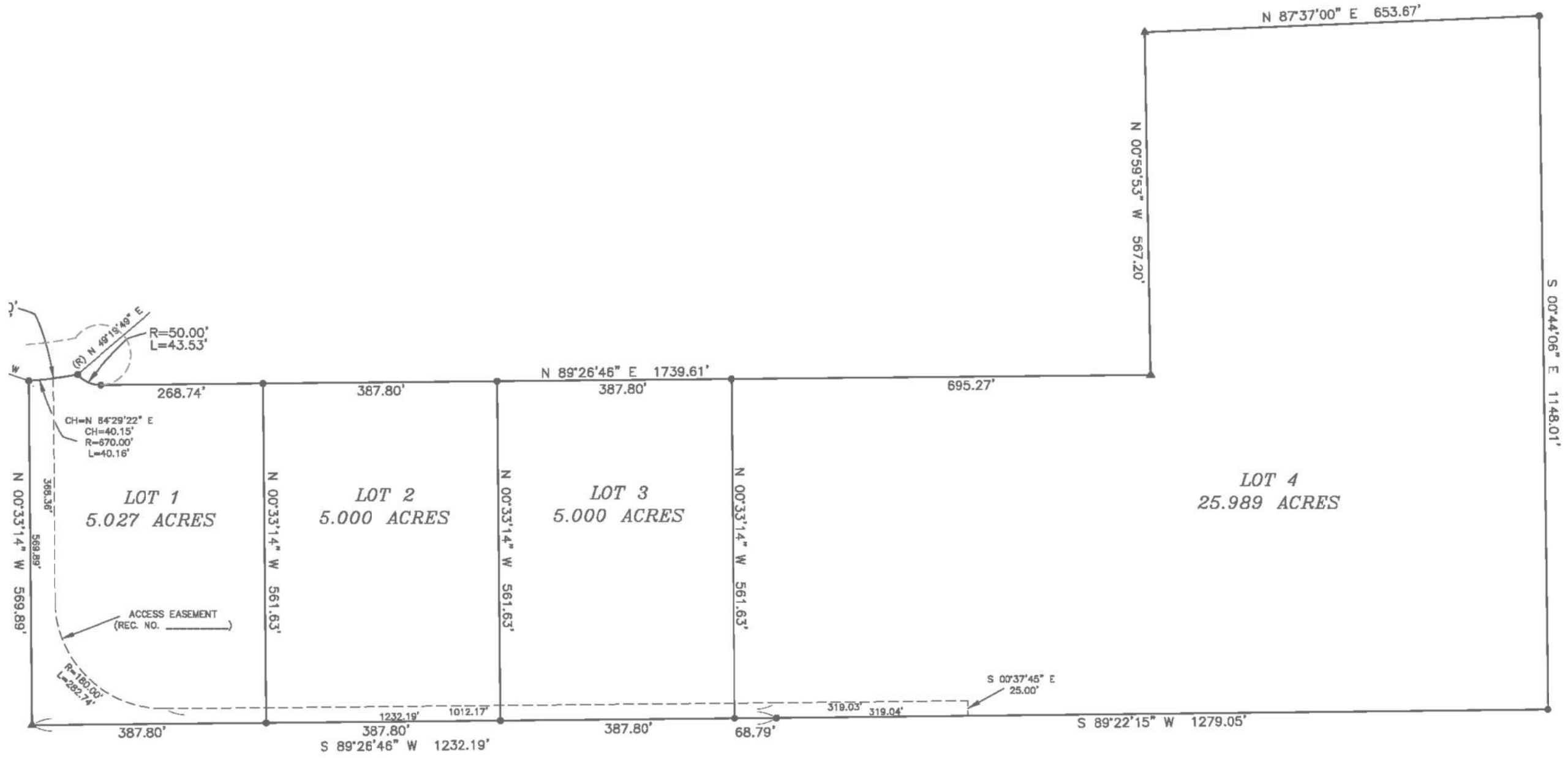
JOB No. 192447

FIG No. 1

DATE 5-2-2023

GRAUPNER SUBDIVISION

A SUBDIVISION OF A PART OF THE SOUTH 1/2 OF SECTION 32
 TOWNSHIP 11 SOUTH, RANGE 64 WEST OF THE 6TH P.M.,
 COUNTY OF EL PASO, STATE OF COLORADO.
 AREA = 41.016 ACRES, MORE OR LESS



AS REPLATTED

LEGEND

- SET NO. 5 REBAR WITH SURVEYORS CAP STAMPED "37634"
- ▲ RECOVERED AS NOTED
- BOUNDARY LINE
- - - EASEMENT LINE
- (M) MEASURED DIMENSION



NOT TO SCALE
 BASE MAP PROVIDED BY EAGLE LAND SURVEYING

JOB No. 192447



ROCKY MOUNTAIN GROUP

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 (970) 330-1071
Woodland Park Office:
 (719) 687-6077
Monument Office:
 (719) 488-2145
Pueblo / Canon City:
 (719) 544-7750

GRAUPNER SUBDIVISION
 TANNER TRAIL
 EL PASO COUNTY, CO
 GARRETT GRAUPNER

ENGINEER:	TM
DRAWN BY:	KZ
CHECKED BY:	TM
ISSUED:	5-02-2023
REVISION:	DATE:
	JOB #:

PROPOSED
 DEVELOPMENT
 PLAN

SHEET No.
FIG-2



ROCKY MOUNTAIN GROUP

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Colorado Springs, CO
80918
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(719) 544-7750



NOT TO SCALE
BASE MAP PROVIDED BY EAGLE LAND SURVEYING

GRAUPNER SUBDIVISION
TANNER TRAIL
EL PASO COUNTY, CO
GARRETT GRAUPNER

ENGINEER:	TM
DRAWN BY:	KZ
CHECKED BY:	TM
ISSUED:	3-24-2023
REVISION:	DATE: JOB #:

TEST BORING
LOCATION
PLAN

SHEET No.
FIG-3

TEST PIT TP-1			
DATE OBSERVED: 3/10/23			
SOIL DESCRIPTION	DEPTH (FT)	SYMBOL	SOIL TYPE
0 - 1.5 FT SAND (SINGLE GRAIN, STRUCTURELESS 35% > 2MM)	2ft		1 / R-0
1.5 - 4.0 FT SANDY CLAY, LOAM (GRANULAR, STRONG 45% > 2MM)			3 / R-1
4.0 - 8.0 FT SAND (SINGLE GRAIN, STRUCTURELESS 46% > 2MM)	6ft		1 / R-0
NO GROUNDWATER NO LIMITING LAYER	8ft		

TEST PIT TP-2			
DATE OBSERVED: 3/10/23			
SOIL DESCRIPTION	DEPTH (FT)	SYMBOL	SOIL TYPE
0 - 3.5 FT SAND (SINGLE GRAIN, STRUCTURELESS 35% > 2MM)	2ft		1 / R-0
3.5 - 4.5 FT SANDY, CLAY (GRANULAR, BLOCKY, MODERATE)			4
4.5 - 6.0 FT SANDY, CLAY, LOAM (GRANULAR, STRONG, 45% > 2MM)	6ft		3 / R-1
NO GROUNDWATER LIMITING LAYER @ 6 FEET BEDROCK	8ft		

SOIL DESCRIPTIONS



SAND



SANDY CLAY LOAM



SANDY CLAY

Architecture
Structural
Geotechnical



Materials Testing
Forensics
Civil / Planning

Engineers / Architects

SOUTHERN COLORADO OFFICE
2910 AUSTIN BLUFFS PKWY, SUITE 100,
COLORADO SPRINGS, CO 80918

(719) 548-0600 ~ WWW.RMGENGINEERS.COM
SOUTHERN COLORADO, DENVER METRO, NORTHERN COLORADO

TEST PIT LOGS

GRAUPNER SUBDIVISION
TANNER TRAIL
EL PASO COUNTY, COLORADO
GARRETT GRAUPNER

JOB No. 192447

FIG No. 4

DATE 5-2-2023



ROCKY MOUNTAIN GROUP

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Pueblo / Canon City:
 (719) 544-7750



⊠ DENOTES APPROXIMATE LOCATION OF TEST PITS PERFORMED INCONJUNCTION WITH THIS INVESTIGATION

○ DENOTES POTENTIAL OWTS LOCATIONS

□ DENOTES POTENTIAL HOME LOCATIONS



NOT TO SCALE
 BASE MAP PROVIDED BY EAGLE LAND SURVEYING

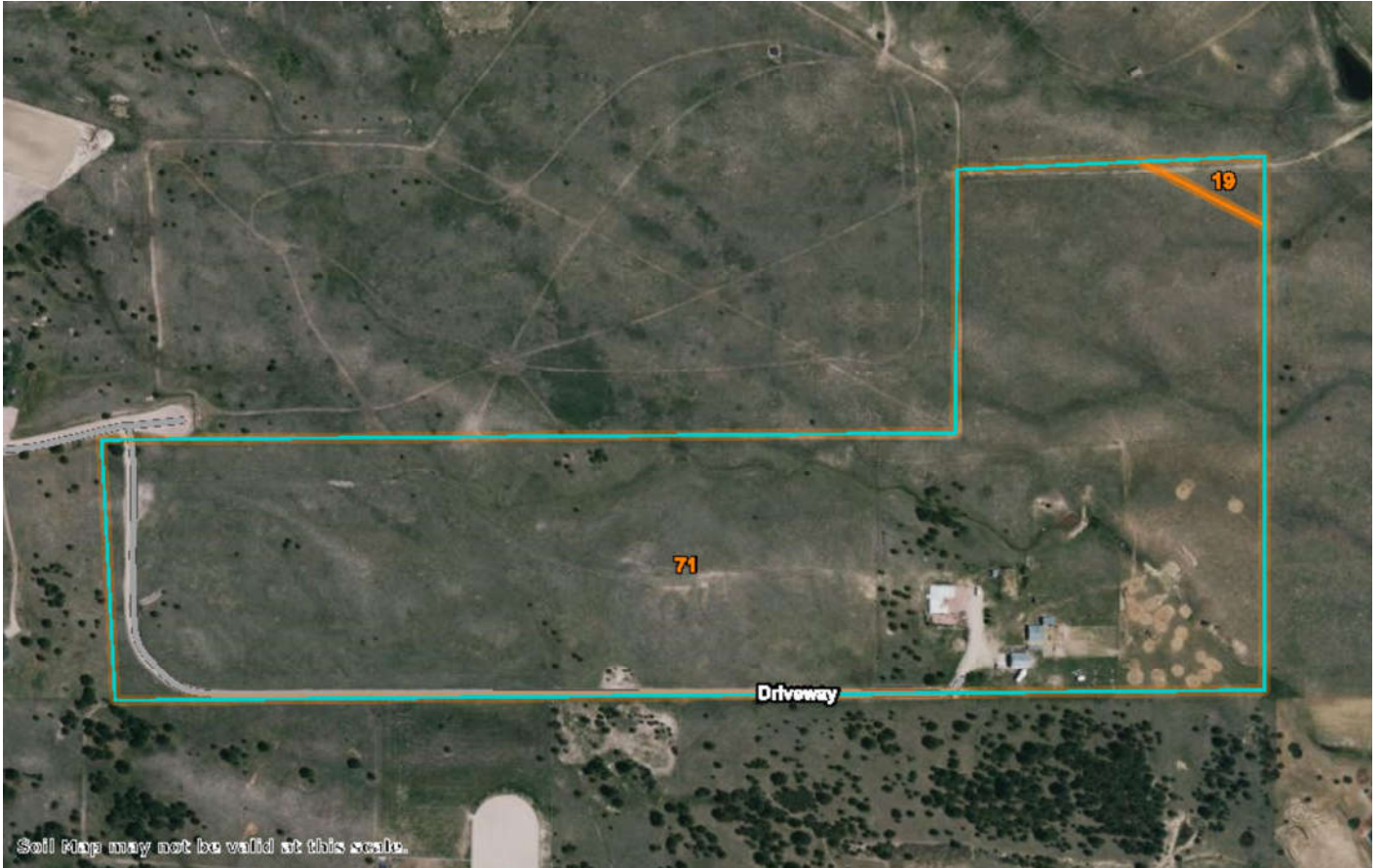
NOTE: THE CHOSEN ON-SITE WASTEWATER TREATMENT SYSTEM (OWTS) LOCATIONS ARE FOR ILLUSTRATION ONLY. IF THE EL PASO COUNTY HEALTH DEPARTMENT PHYSICAL SETBACK REQUIREMENTS ARE MET FOR EACH LOT, THERE ARE NO RESTRICTIONS ON THE PLACEMENT OF THE INDIVIDUAL OWTS.

ENGINEER:	TM
DRAWN BY:	KZ
CHECKED BY:	TM
ISSUED:	5-02-2023
REVISION:	DATE: JOB #:

SEPTIC SUITABILITY MAP

SHEET No. FIG-5

GRAUPNER SUBDIVISION
 TANNER TRAIL
 EL PASO COUNTY, CO
 GARRETT GRAUPNER



71 - PRING COURSE SANDY LOAM, 3 TO 8 PERCENT SLOPES
 19 - COLUMBINE GRAVELLY SAND LOAM, 0 TO 3 PERCENT SLOPES



NOT TO SCALE
 BASE MAP PROVIDED BY USDA



Southern Office
 Colorado Springs, CO
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Central Office:
 Englewood, CO 80112
 (303) 688-9475
Northern Office:
 Greeley / Evans, CO 80620
 (970) 330-1071

**USDA SOIL
 SURVEY MAP**
 GRAUPNER SUBDIVISION
 TANNER TRAIL
 EL PASO COUNTY, CO
 GARRETT GRAUPNER

JOB No. 192447
 FIG No. 6
 DATE 5-2-2023

EL PASO COUNTY HEALTH DEPARTMENT
COLORADO SPRINGS, COLORADO

#2864 P

SEWAGE DISPOSAL INSPECTION FORM

APPROVAL:
YES NO

#4132000010

DATE 4-19-85

ENVIRONMENTALIST Paul Brockhausen

LOCATION (street number) 14710 Tanager Trail B OCCUPANT Alan Taylor

LEGAL DESCRIPTION Lot 1 Woodlake E & B

TYPE OF CONSTRUCTION _____ NO. OF BEDROOMS 3

SYSTEM INSTALLED BY Orville Hansen

COMMERCIAL MFG. Pro Coat SIZE 1500 gal

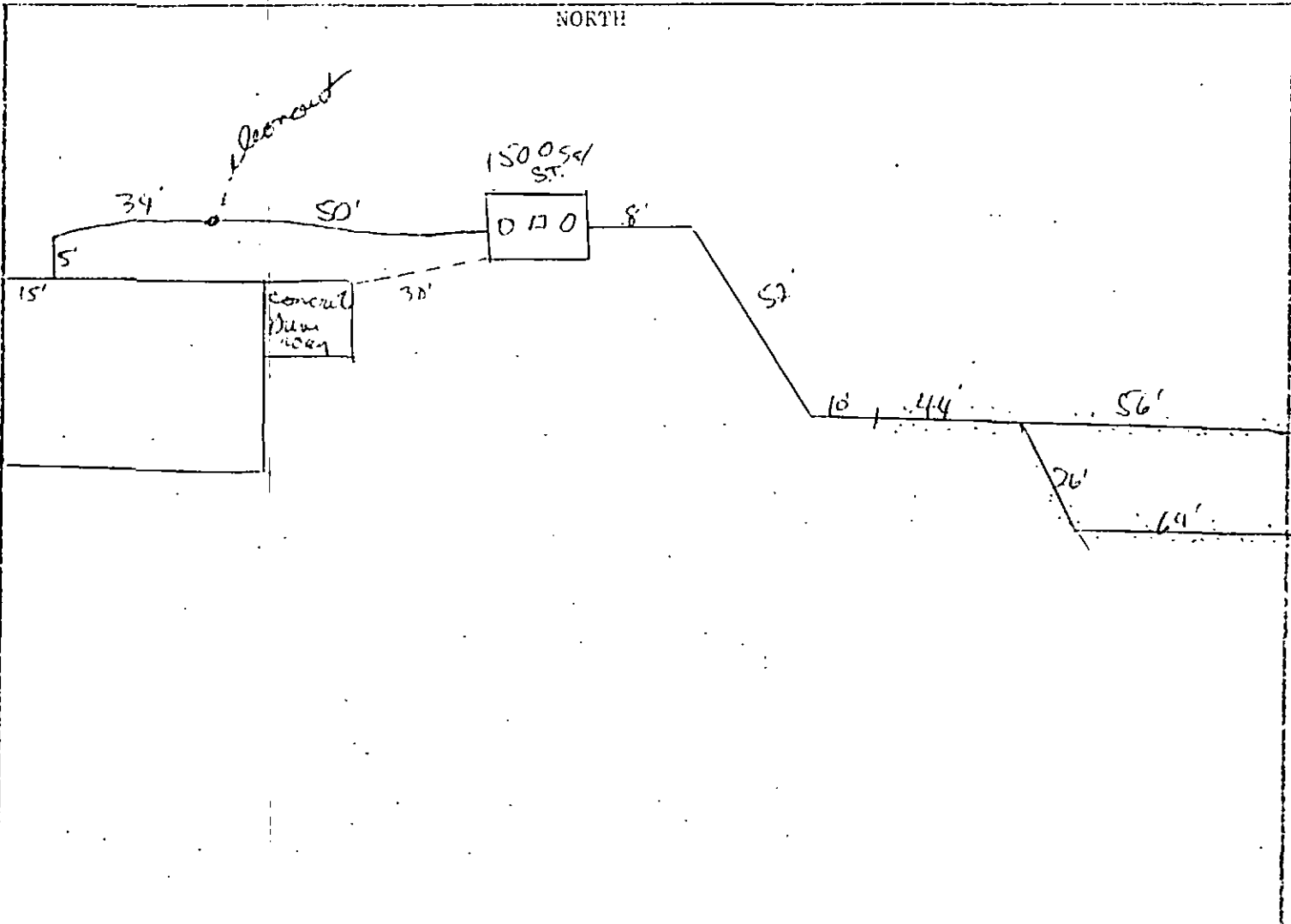
TYPE OF MATERIAL _____ NO. COMPARTMENTS _____

WIDTH _____ LENGTH _____ DEPTH (total) _____ LIQ. CAP. _____

DISPOSAL FIELD: PCD OR TRENCH DEPTH 2 1/2 - 3' WIDTH 3' LENGTH 182' SQ. FT. 546^{sq}

DISTANCE BETWEEN LINES 20' ROCK RR DEPTH 18" UNDER 12" OVER 2"

LEACHING PITS (NO.) _____ LINING MATERIAL _____ CAPACITY SQ. FT. _____



Acres: 41.

EL PASO COUNTY • COUNTY HEALTH DEPARTMENT

Permit NO 2864

501 North Foote Avenue • Colorado Springs, Colorado • 636-0125

Water Supply _____

PERMIT

Receipt No. 7118

TO CONSTRUCT, ALTER, REPAIR or MODIFY ANY INDIVIDUAL SEWAGE DISPOSAL SYSTEM

Issued To Glen & Bernadine S Tabor Date July 23, 1984

Address of Property 14710 Tanner Tr., Elbert, 80106 Phone 495-2062
(Permit valid at this address only)

Sewage-Disposal System work to be performed by Same as above Phone _____

This Permit is issued in accordance with 25-10-106 Colorado Revised Statute, 1973, as amended. PERMIT EXPIRES upon completion-installation of sewage-disposal system or at the end of six (6) months from date of issue — whichever occurs first — (unless work is in progress).

— THIS PERMIT DOES NOT DENOTE APPROVAL OF SEWAGE DISPOSAL REQUIREMENTS —

\$145.00 FEE NOT REFUNDABLE
PERMIT FEE

[Signature]
DIRECTOR, CITY-COUNTY HEALTH DEPARTMENT
[Signature]
ENVIRONMENTALIST

January 23, 1985
DATE OF EXPIRATION

NOTE: LEAVE ENTIRE SEWAGE-DISPOSAL SYSTEM UNCOVERED FOR FINAL INSPECTION. 48 HOUR ADVANCE NOTICE REQUIRED.

SEPTIC TANK SIZE	<u>1250</u>	GALLONS	TOTAL ABSORPTION AREA	<u>537</u>	SQ. FT.
TRENCH SYSTEM	BED SYSTEM		SEEPAGE PIT SYSTEM		
<u>179</u> ft. of trench <u>36</u> inches wide	_____ ft. x _____ ft.		_____ rings or _____ diam. x _____ w/d		

NOTES:

Serial distribtuion will probably be necessary. Keep trenches 100 feet from well, tank 50 feet from well.

The Health Office shall assume no responsibility in case of failure or inadequacy of a sewage-disposal system, beyond consulting in good faith with the property owner or representative. Free access to the property shall be authorized at reasonable times for the purpose of making such inspections as are necessary to determine compliance with requirements of this law.

El Paso County Health Department
501 North Foote Avenue
Colorado Springs, CO 80909-4598
(303) 636-0125

Julie

*Septic system
for main house*

APPLICATION FOR A PERMIT TO CONSTRUCT, REMODEL, OR INSTALL A SEWAGE DISPOSAL SYSTEM

NAME OF OWNER *GLEN + BERNADINE TABOR* HOME PHONE *495-2062* WORK PHONE *577-1265*

ADDRESS OF PROPERTY *14710 TANNER TR. ELBERT, 80106* DATE *7-2-84*

LEGAL DESCRIPTION OF PROPERTY *LOT 1 Woodlake Estates*

TAX SCHEDULE NUMBER *41,000-00-178* SYSTEM CONTRACTOR *SAME* PHONE

OWNER'S ADDRESS IF DIFFERENT

TYPE OF HOUSE CONSTRUCTION *Log* SOURCE AND TYPE OF WATER SUPPLY *Well*

SIZE OF LOT *41 Acs* MAXIMUM POTENTIAL NUMBER OF BEDROOMS *3* BASEMENT (yes or no)

PERCOLATION TEST RESULTS ATTACHED (yes or no)

A plot plan and accompanying information are essential; it may be drawn on the back of this application or be attached. Please include by measured distance the location of wells including neighbors' wells, springs, water supply lines, cisterns, buildings, proposed structures, property lines, property dimensions, subsoil drains, lakes, ponds, water courses, streams, and dry gulches. Please show the location of the proposed septic system by directions and distances from actual and/or proposed dwellings, structures, or fixed reference objects. Give complete directions to the property from major highways.

Applicant acknowledges that the completeness of the application is conditional upon such further mandatory and additional tests and reports as may be required by the department to be made and furnished by the applicant for purposes of evaluation of the application; and issuance of the permit is subject to such terms and conditions as deemed necessary to ensure compliance with rules and regulations adopted under Article 10, Title 25, C.R.S. 1973 as amended. The undersigned hereby certifies that all statements made, information and reports submitted by the applicant are or will be represented to be true and correct to the best of my knowledge and belief and are designed to be relied on by the El Paso County Health Dept. in evaluating the same for purposes of issuing the permit applied for herein. I further understand that any falsification or misrepresentation may result in the denial of the application or revocation of any permit granted based upon said application and in legal action for perjury as provided by law.

2 septic systems on the same property - (main house system) per this permit SIGNATURE *Bernadine Tabor*

HEALTH DEPARTMENT USE ONLY

PERMIT NUMBER RECEIPT NUMBER DATE TO LAND USE DEPARTMENT *7/6*

ABSORPTION AREA *537* TANK CAPACITY *1250* DATE OF SITE INSPECTION *7/10/84*

REMARKS: *Perc test data from 1982 is acceptable. Site is okay - gently sloping hill. Soil distribution will probably be necessary. Keep trenches 100' from well, tank 50' from well. 179 lined feet of 3' trench.*

APPLICATION IS APPROVED DENIED DATE *7/10/84* ENVIRONMENTALIST *Julie Schneider*