

Daniel Abeyta

**WATER RESOURCES REPORT
For
Aztec Subdivision
(Property Record Card 5200000303)**

March 2020

Prepared By:



Executive Summary:
Water Resources and Wastewater Report—Aztec Subdivision

A proposed development on property owned by Daniel Abeyta (Property Record Card 5200000303) consists of approximately 37.7 acres and is located at 13235 Vollmer Road in Colorado Springs, CO 80908. The development is located in Section 10, Township 12 South, Range 65 West. The proposed development is planned to consist of 4 residential properties which will be provided water services through individual residential wells drilled into the non-tributary Dawson Aquifer and wastewater served through individual on-site wastewater treatment systems (OWTS).

It is expected that each rural residential home in the proposed subdivision will require an average of 1.0 annual acre-feet of water (which uses represent annual allocations for domestic use, irrigation, commercial, replacement, and stock water). This anticipated water demand is consistent with historic needs for nearby developments in the Black Forest area. Overall annual demand is anticipated to consist of an annual average of 4.0 AF/year between the 4 proposed lots.

The estimated annual depletion to the designated basins by the end of the 300-year period is modeled as 0.103 AF/year or 2.57% of overall annual pumping within the development at full buildout. All depletions are expected to occur within the Upper Black Squirrel designated basin. At full buildout, return flows from the septic fields are projected to return 0.90 AF/year between the 4 proposed lots at 90% of the domestic flows. This projected amount is more than enough to cover estimated depletions out of the designated basin alluvium by year 300 of pumping.

TABLE OF CONTENTS

SECTION 1 INTRODUCTION

- 1.1 New Development Description

SECTION 2 PROJECTION OF WATER NEEDS

- 2.1 Analysis of Water Demands
Table 2-1 – *Projected Water Demands for Aztec Subdivision*

SECTION 3 PROPOSED WATER RIGHTS AND SYSTEM FACILITIES

- 3.1 Water Rights
Table 3 – *Summary of Available Legal Water Supply for Aztec Subdivision*
- 3.2 Source of Supply
- 3.3 Water Quality and Treatment
- 3.4 Water Storage
- 3.5 Impact on Existing Wells

SECTION 4 WASTEWATER PRODUCTION

- 4.1 Wastewater Loads
Table 4-1 – *Projected Wastewater Loads for Aztec Subdivision*
- 4.2 On-Site Wastewater Treatment Systems

SECTION 5 PROJECTED DEPLETIONS AND ASSOCIATED REPLACEMENT PLAN

APPENDICES

Appendix A – Preliminary Plot Plan Layout

Appendix B - Water Demands and Wastewater Loads

Appendix C- Overall Water Supply Inventory

Appendix D – Water Rights Decrees
1065-BD
1066-BD
1067-BD
1068-BD

Appendix E- On-site Wastewater Treatment System Evaluation

Appendix F- Water Quality Results

SECTION 1 INTRODUCTION

The purpose of this study is to provide a preliminary outline of the water resources, wastewater needs, and replacement requirements that would be necessary to support residential uses within the proposed 4-lot development of the Abeyta Subdivision.

1.1 New Development Description:

Development at the proposed Abeyta subdivision is estimated to consist of 37.7 acres subdivided into four lots with approximate acreage of 4.8, 4.79, 9.51, and 18.6 acres. The proposed subdivision is to be located near the intersection of Swan Road and Vollmer Road near the address of 13251 Vollmer Road in Colorado Springs, CO. The development is located in Section 10, Township 12 South, Range 65 West. The proposed lots are to be provided water through on-site individual wells drilled into the Dawson Aquifer. Wastewater service is to be provided via on-site septic systems designed to be non-evaporative.

Appendix A contains a preliminary layout for the proposed Abeyta Subdivision.

SECTION 2 PROJECTION OF WATER NEEDS

2.1 Analysis of Water Demands:

Provide justification for 0.25 acre-feet per residence. LDC Sec. 8.4.7(B)(7)(d) presumptive values calculate residential demand at 0.26 acre-feet per residence. Revise documents as necessary.

Expected water demands and return flows are calculated in **Appendix B**. Table 2-1 below estimates the projected water demands for development at the Abeyta Subdivision. Each well is proposed to divert 1.0 acre-feet of water annually for each one single family residence (0.25 acre-foot per residence for domestic indoor use; 0.50 acre-feet per residence would be dedicated to irrigation while 0.25 acre-feet per residence would be allocated for stock watering approximately 8 heads of cattle).

Table 2-1 -Projected Water Demands for Aztec Subdivision

<i># of Units</i>	<i>Land Use</i>	<i>Water Use Per Unit (AF/Unit)</i>	<i>Annual Demand (AF)</i>	<i>Average Daily Flow (ADF) (GPD)</i>	<i>Maximum Daily Flow (MDF) (@ 2.5 x ADF) (GPD)</i>	<i>Peak Hour Flow (@ 1.5 x MDF) (GPM)</i>
4	Residential (Rural, Well, OWTS)	1.0	4.0	3,571	8,927	9.3

SECTION 3 PROPOSED WATER RIGHTS AND SYSTEM FACILITIES

3.1 Water Rights:

Water rights adjudications have been decreed by the State of Colorado Ground Water Commission Findings in Water Right Nos. 1065-BD, 1066-BD, 1067-BD, and 1068-BD and are summarized in **Appendix C**. The Denver Basin water supply is available for use at the Abeyta property as summarized in **Table 3-1**.

Table 3-1
Summary of Available Legal Water Supply
for Abeyta Property Subdivision

Water	Annual 100-year Supply (Acre-Feet)	Annual 300-year Supply (Acre-Feet)
Dawson (NNT)	28.41	9.47
Denver (NT)	23.71	7.90
Arapahoe (NT)	16.66	5.55
Laramie-Fox Hills (NT)	10.74	3.58

The intent of the developer is to use the remaining water in the Dawson non-tributary aquifer to supply all residential uses described in Section 2 above. The estimated 9.47 AF/year available for 300-year supply in the Dawson aquifer is enough to serve the 4.0 AF/year estimated for the 4 proposed residential lots. Projected depletions to the alluvium from the proposed 300-year pumping period out of the Dawson Aquifer are presented in Section 5 of this report.

Proposed beneficial use of the water from the decrees includes domestic, irrigation, stock watering, commercial, and replacement purposes.

3.2 Source of Supply:

Domestic water demand will be met using individual wells drilled into the Dawson formation.

3.3 Water Quality and Treatment:

The water quality in the Dawson Aquifer in this area has typically been suitable for residential potable use. Water samples were obtained from an existing Dawson well located on one of the proposed lots in the subdivision (13251 Vollmer, Colorado Springs, CO), located on the north-east property of the proposed Aztec Subdivision. This well structure is a representative sample source for the individual residential wells within this subdivision. Water samples were obtained from the Daniel Abeyta's Well on December 11, 2019 with water quality testing performed by Colorado Analytical Laboratories per the El Paso County Land Development Code section 8.4.7(B). Final results from this water quality testing were received on January 6, 2020 and February 24, 2020 and can be found in **Appendix G**. The only results of concern were for low pH.

The Colorado Department of Public Health Environment recommends a drinking water pH of 6.5 – 8.5. Results from water sampling show the pH of the raw water from the Abeyta well to be 6.42. A low pH represents corrosive water. House distribution line material should be chosen based on low pH water. recommendations are PVC or PEX piping.

3.4 *Water Storage:*

Each single-family home will have its own individual pressure tank. The size and pressure of the tank will be determined by each property owner.

3.5 *Impact to Existing Wells:*

The largest lot in the subdivision, 18.6 acres, contains the Abeyta well from which water samples were taken. The additional three lots will be south of this property and will not impact any wells in the area as the Abeyta well is the closest in proximity. Even if lots 1, 2, and 3 drilled wells as close as possible to the western lot boundary, any and all new wells would be over 500 feet from the residential wells on the west side of Vollmer.

SECTION 4 WASTEWATER PRODUCTION

4.1 *Wastewater Loads*

Wastewater projections are based on similar residential historical use in the rural locations of the Pikes Peak region. There are 4 proposed residential units expected in the proposed development, all of which will all have on-site septic systems. The proposed source of replacement water will be from septic leaching field return flows released through the domestic use of Dawson ground water. Return flows from each lot will consist of an estimated 90% of the water used for in-house purposes. Therefore, assuming each residential lot uses a total annual amount for in-house use of 0.25 acre-feet, the return flow per lot would be 0.225 acre-feet annually (or 0.90 AF/year from all four (4) proposed lots). Please see Table 4-1 below for a more detailed representation of the estimated annual return flows to the Upper Black Squirrel Designated Basins. Of note, the proposed septic systems will be individually engineered according to specific individual soils evaluations obtained from each individual lot and be designed to promote non-evaporative conditions from the septic fields. A preliminary soils report for the development is provided in **Appendix E**. Overall, the soils report generated by Entech Engineering suggests that the site is suitable for individual on-site wastewater treatment systems (OWTS) provided that individual soil testing be conducted on each lot prior to construction.

Table 4-1 - Projected Return Flows to the Upper Black Squirrel Alluvial Aquifer

<i>Wastewater Loads</i>				
<i># of Units</i>	<i>Type</i>	<i>Average Daily Flow (ADF) (GPD)</i>	<i>Maximum Daily Flow (GPD)</i>	<i>Return Flow (AF/Year)</i>
4	Residential	803	980	0.90

SECTION 5 PROJECTED DEPLETIONS AND ASSOCIATED REPLACEMENT PLAN

5.1 Depletions vs. Replacement

The AUG3 program developed by the Colorado Department of Water Resources was utilized to estimate the annual depletion to the alluvial aquifer system of the Upper Black Squirrel Creek Designated Ground Water Basin over a 300-year period. Specifically, the DA02 model for the Upper Dawson aquifer was used to estimate the post-pumping depletion quantities for 4 wells located in Section 10, Township 12 South, Range 65 West. Annual pumping from the proposed development was assumed to be 4.00 AF/year over a 300-year pumping period as estimated in Table 2-1 above. The 2019 version of AUG_3's Designated Basin 5-year Timestep was utilized for this evaluation.

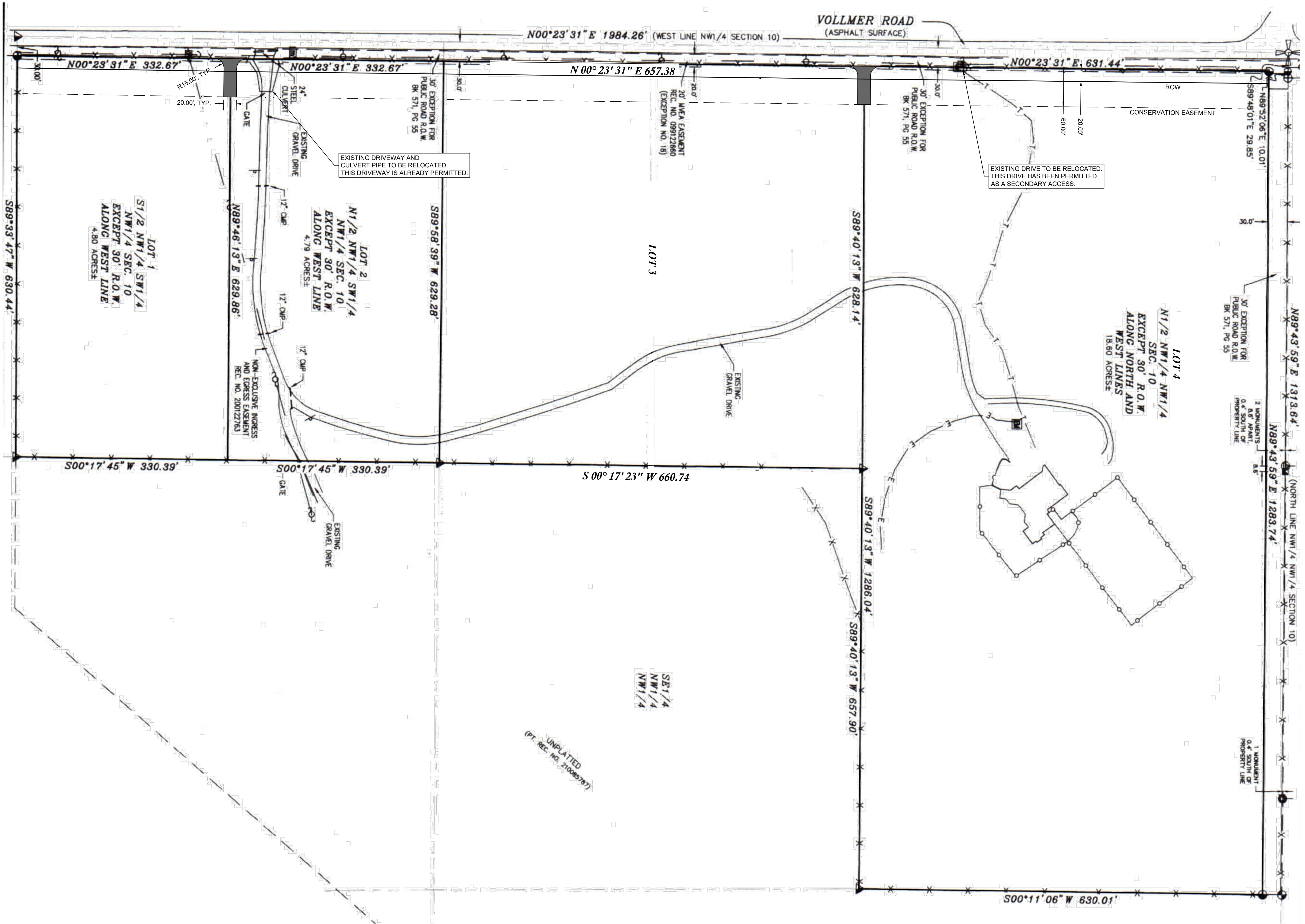
Based on the results from this model, the maximum designated basin depletion is 0.103 AF/Year (2.57% of annual pumping at full build-out) which would occur in year 300. The proposed replacement plan would utilize return flows from each on-site individual septic leach filed on the order of 0.225 AF/Year/SFE (residential) which is estimated to provide approximately 0.90 AF/year of return flows. Overall, these proposed return flows would be more than sufficient to augment the above estimated annual post-pumping depletions within the development. Replacement volumes generated from septic return flows Tables outlining the designated basin depletions and the overall 300-year stream depletion summaries can be found in **Appendix B**. The applicant's water attorney has submitted a replacement plan to the Division, with publication of the replacement plan approved on February 18th, 2020. Comments and approval from the Groundwater Commission should occur sometime in April, with an order on the replacement plan being granted sometime in May 2020.

Appendix A

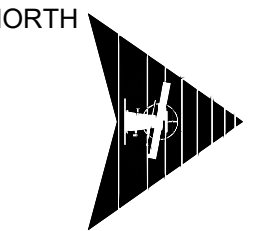
AZTEC RESIDENTIAL SUBDIVISION

CONSTRUCTION DOCUMENTS
COLORADO SPRINGS, COLORADO

EXHIBIT 1 CONCEPT



REVISION DATE	REVISION DESCRIPTION (DESCRIPTION)
000000	



SCALE: 1" = 70'

PROJECT #: 1908CS4030
CHECKED BY: BML
DRAWN BY: CNP

DATE: 11/8/2019

SHEET # **1**

TOTAL SHEETS 1

Appendix B

Appendix B
Dan Abeyta - Aztec Subdivision
Water Demands and Wastewater Loads Estimate (4-Lot Development)

Residential Constants

<i>Water (Rural)</i>	1.00	<i>AF/Year-SFE</i>
<i>Wastewater (Base Flow)</i>	201	<i>GPD/SFE</i>
<i>Wastewater (MDF)</i>	245	<i>GPD/SFE</i>
<i>Estimated Wastewater Flow</i>	0.225	<i>AF/Year-SFE</i>

Land Use	Density	Water Demands						Wastewater Loads			
		SFE	Unit Use	Acre-Feet	ADF (GPD)	Max Daily Use (GPD)	Peak Hour (GPM)	Return Flow AF/Year	SFE	Average Daily Flow	Max Day Daily Flow
Residential		4	1.00	4	3,571	8,928	9.30	0.9	4	803	980

Alluvial Depletion Information

*AUG-3 Denver Basin Depletion Model - Maximum Depletions - Section 10, Township 12S, Range 65 W
 Designated Basin_V2019 for use inside Upper Black Squirrel Designated Basin*

Dawson Aquifer - Not-Nontributary - Upper Black Squirrel - 1325 Vollmer Road, Colorado Springs, CO 80908

Designated Basin - Maximum Total Depletions				
Pumping Interval	Formation	Total Depl. (AF/yr)	Total Depl. (% of Pumping)	Year of Max. Depletion
300-year pumping period				
Pumping Period	Dawson (NNT)	0.103	2.57%	300

Appendix C

Appendix C
Dan Abeyta - Aztec Subdivision
Water Demands and Wastewater Loads Estimate (4-Lot Development)

Land Formation/Aquifer	Finding/Decree	Tributary Status	Volume	Annual Allocation 100 Year	Annual Allocation 300 Year	Notes	Saturated		Owner
			Acre-Feet	A-F/Year	A-F/Year		Sand Thickness	Specific Yield	
Dawson	1068-BD	NNT	2,941	28.41	9.47	Located within UBS Basin and Management District. Wells must be located in excess of 600 feet from other wells drilled into the Dawson	390	20%	Transferred from Peter R. Spahn Investment Trust to Dan Abeyta
Denver	1067-BD	NT	2,371	23.71	7.90	Located within UBS Basin and Management District. Wells must be located in excess of 600 feet from other wells drilled into the Denver	370	17%	Transferred from Peter R. Spahn Investment Trust to Dan Abeyta
Arapahoe	1066-BD	NT	1,666	16.66	5.55	Located within UBS Basin and Management District. Wells must be located in excess of 600 feet from other wells drilled into the Arapahoe	260	17%	Transferred from Peter R. Spahn Investment Trust to Dan Abeyta
Laramie-Fox Hills	1065-BD	NT	1,074	10.74	3.58	Located within UBS Basin and Management District. Wells must be located in excess of 600 feet from other wells drilled into the LFH	190	15%	Transferred from Peter R. Spahn Investment Trust to Dan Abeyta
Total Legal Supply			8,052	80	27				
Total Available for Use at Abeyta Subdivision			8,941		69				

- Beneficial Uses**
- Domestic
 - Industrial
 - Commercial
 - Irrigation
 - Augmentation
 - Stock watering
 - Recreational water feature ponds
 - Piscatorial
 - Wildlife
 - Replacement

Appendix D

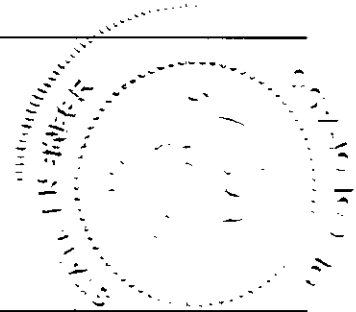
**COLORADO GROUND WATER COMMISSION
FINDINGS AND ORDER**

IN THE MATTER OF AN APPLICATION FOR DETERMINATION OF WATER RIGHT TO ALLOW THE WITHDRAWAL OF GROUND WATER IN THE UPPER BLACK SQUIRREL CREEK DESIGNATED GROUND WATER BASIN

APPLICANT: PETER R. SPAHN INVESTMENT TRUST

AQUIFER: LARAMIE-FOX HILLS

DETERMINATION NO.: **1065-BD**



In compliance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, Peter R. Spahn Investment Trust (hereinafter "applicant") submitted an application for determination of water right to allow the withdrawal of designated ground water from the Laramie-Fox Hills Aquifer.

FINDINGS

1. The application was received complete by the Colorado Ground Water Commission on September 22, 2006.
2. The applicant requests a determination of rights to designated ground water in the Laramie-Fox Hills Aquifer (hereinafter "aquifer") underlying 37.7 acres, generally described as the W $\frac{1}{2}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, the NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, and the NW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 10, Township 12 South, Range 65 West of the 6th Principal Meridian, in El Paso County. According to a signed statement dated September 19, 2006, the applicant owns the 37.7 acres of land, as further described in said affidavit which is attached hereto as Exhibit A, and claims control of the ground water in the aquifer underlying this land area.
3. The proposed annual amount of ground water to be allocated and withdrawn from the aquifer for intended beneficial uses is the maximum allowable amount.
4. The above described land area overlying the ground water claimed by the applicant is located within the boundaries of the Upper Black Squirrel Creek Designated Ground Water Basin and within the Upper Black Squirrel Creek Ground Water Management District. The Colorado Ground Water Commission (hereinafter "Commission") has jurisdiction.
5. The applicant intends to apply the allocated ground water to the following beneficial uses: indoor residential and commercial (home-based business), stock watering, irrigation, hot tub/swimming pool, and augmentation. The applicant's proposed place of use of the allocated ground water is the above described 37.7 acre land area.
6. The quantity of water in the aquifer underlying the 37.7 acres of land claimed by the applicant is 1,074 acre-feet. This determination was based on the following as specified in the Designated Basin Rules:
 - a. The average specific yield of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 15 percent.

- b. The average thickness of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 190 feet.
7. At this time, there is no substantial artificial recharge that would affect the aquifer within a one hundred year period.
 8. Pursuant to Section 37-90-107(7), C.R.S., and in accordance with the Designated Basin Rules, the Commission shall allocate ground water in the aquifer based on ownership of the overlying land and an aquifer life of one hundred years. Therefore, the maximum allowed average annual amount of ground water in the aquifer that may be allocated for withdrawal pursuant to the data in the paragraphs above for the 37.7 acres of overlying land claimed by the applicant is 10.7 acre-feet.
 9. A review of the records in the Office of the State Engineer has disclosed that none of the water in the aquifer underlying the land claimed by the applicant has been previously allocated or permitted for withdrawal.
 10. Pursuant to Section 37-90-107(7)(c)(III), C.R.S., an approved determination of water right shall be considered a final determination of the amount of ground water so determined; except that the Commission shall retain jurisdiction for subsequent adjustment of such amount to conform to the actual local aquifer characteristics from adequate information obtained from well drilling or test holes.
 11. The ability of wells permitted to withdraw the authorized amount of water from this non-renewable aquifer may be less than the one hundred years upon which the amount of water in the aquifer is allocated, due to anticipated water level declines.
 12. In accordance with Rule 5.3.6 of the Designated Basin Rules, it has been determined that withdrawal of ground water from the aquifer underlying the land claimed by the applicant will not, within one hundred years, deplete the flow of a natural stream or its alluvial aquifer at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal and, therefore, the ground water is nontributary ground water as defined in Rule 4.2.19 of the Designated Basin Rules. No more than 98% of the amount of ground water withdrawn annually shall be consumed, as required by the Designated Basin Rules.
 13. In accordance with Section 37-90-107(7), C.R.S., upon Commission approval of a determination of water right, well permits for wells to withdraw the authorized amount of water from the aquifer shall be available upon application, subject to the conditions of this determination and the Designated Basin Rules and subject to approval by the Commission.
 14. On October 5, 2006, in accordance with Rule 9.1 of the Designated Basin Rules, a letter was sent to the Upper Black Squirrel Creek Ground Water Management District requesting written recommendations concerning this application. No written recommendations from the district were received.
 15. The Commission Staff has evaluated the application relying on the claims to control of the ground water in the aquifer made by the applicant.

16. In accordance with Sections 37-90-107(7) and 37-90-112, C.R.S., the application was published in the Ranchland News newspaper on October 12 and 19, 2006.
17. No objections to the determination of water right and proposed allocation of ground water were received within the time limit set by statute.
18. In order to prevent unreasonable impairment to the existing water rights of others within the Upper Black Squirrel Creek Designated Ground Water Basin it is necessary to impose conditions on the determination of water right and proposed allocation of ground water. Under conditions as stated in the following Order, no unreasonable impairment of existing water rights will occur from approval of this determination of water right or from the issuance of well permits for wells to withdraw the authorized amount of allocated ground water from the aquifer.

ORDER

In accordance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, the Colorado Ground Water Commission orders that the application for determination of rights to designated ground water in the Laramie-Fox Hills Aquifer underlying 37.7 acres of land, generally described as the W $\frac{1}{2}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, the NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, and the NW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 10, Township 12 South, Range 65 West of the 6th Principal Meridian, is approved subject to the following conditions:

19. The allowed average annual amount of withdrawal of ground water from the aquifer shall not exceed 10.7 acre-feet. The allowed maximum annual amount of withdrawal may exceed the allowed average annual amount of withdrawal as long as the total volume of water withdrawn does not exceed the product of the number of years since the date of approval of this determination times the allowed average annual amount of withdrawal.
20. To conform to actual aquifer characteristics, the Commission may adjust the allowed average annual amount of ground water to be withdrawn from the aquifer based on analysis of geophysical logs or other site-specific data if such analysis indicates that the initial estimate of the volume of water in the aquifer was incorrect.
21. The applicant may pump the allowed average annual amount of withdrawal and the allowed maximum annual amount of withdrawal from one or more wells of a well field in any combination, so long as the total combined withdrawal of the wells does not exceed the amounts described in this Order.
22. No more than 98% of the ground water withdrawn annually shall be consumed. The Commission may require well owners to demonstrate periodically that no more than 98% of the water withdrawn is being consumed.
23. The use of ground water from this allocation shall be limited to the following beneficial uses: indoor residential and commercial (home-based business), stock watering, irrigation, hot tub/swimming pool, and augmentation. The place of use shall be limited to the above described 37.7 acre land area.

24. The applicant, or subsequent persons controlling this water right, shall record in the public records of the county - in which the claimed overlying land is located - notice of transfer of any portion of this water right to another within sixty days after the transfer, so that a title examination of the above described 37.7 acre land area, or any part thereof, shall reveal the changes affecting this water right. Such notice shall consist of a signed and dated deed which indicates the determination number, the aquifer, a description of the above described land area, the annual amount of ground water (acre-feet) transferred, name of the recipient, and the date of transfer.

25. Subject to the above conditions, well permits for wells to withdraw the allocated annual amount of water from the aquifer shall be available upon application subject to approval by the Commission and the following conditions:
 - a. The wells shall be located on the above described 37.7 acre overlying land area.

 - b. The wells must be constructed to withdraw water from only the Laramie-Fox Hills Aquifer. Upon application for a well permit to construct such a well, the estimated top and base of the aquifer at the proposed well location will be determined by the Commission and indicated on the approved well permit. Plain non-perforated casing must be installed, grouted and sealed to prevent diversion of ground water from other aquifers and the movement of ground water between aquifers.

 - c. The entire depth of each well must be geophysically logged prior to installing the casing as set forth in Rule 9 of the Statewide Nontributary Ground Water Rules, 2 CCR 402-7.

 - d. Each well shall be constructed within 200 feet of the location specified on the approved well permit, but must be more than 600 feet from any existing large-capacity well completed in the same aquifer.

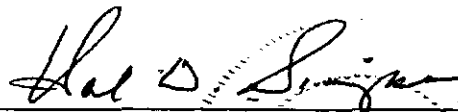
 - e. A totalizing flow meter or other Commission approved measuring device shall be installed on each well and maintained in good working order by the well owner. Annual diversion records shall be collected and maintained by the well owner and submitted to the Commission or the Upper Black Squirrel Ground Water Management District upon their request.

 - f. The well owner shall mark the well in a conspicuous place with the permit number and the name of the aquifer. The well owner shall take necessary means and precautions to preserve these markings.

26. A copy of this Findings and Order shall be recorded by the applicant in the public records of the county in which the claimed overlying land is located so that a title examination of the above described 37.7 acre overlying land area, or any part thereof, shall reveal the existence of this determination.

Applicant: Peter R. Spahn Investment Trust
Aquifer: Laramie-Fox Hills
Determination No.: 1065-BD

Dated this 29th day of November, 2006.



Hal D. Simpson
Executive Director
Colorado Ground Water Commission

By: Keith Vander Horst

Keith Vander Horst, P.E.
Supervisor, Designated Basins

Prepared by: SKR

GWS 1
06/09/00

1065-BD

Page 1 of 1

SEP 22 2006

STATE OF COLORADO
OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RESOURCES
1313 Sherman St. Room 821
Denver, CO 80203
(303) 866-3581 Fax (303) 866-3589

WATER RESOURCES
STATE ENGINEER
COLO.

NONTRIBUTARY GROUND WATER LANDOWNERSHIP STATEMENT

I (We) Peter R. Spahn Investment Trust
(Name(s))

Claim and say that I (we) am (are) the owner(s) of the following described property consisting of 37.7 acres in the County of El Paso, State of Colorado:

(Insert the property legal description)
W 1/2 NW 1/4 NW 1/4;
NE 1/4 NW 1/4 NW 1/4;
NW 1/4 SW 1/4 NW 1/4;
Sec. 10, T. 12S., R. 65W., 6th PM

and, that the ground water sought to be withdrawn from the Laramie-Fox Hill aquifer underlying the above-described and has not been conveyed to reserved to another, nor has consent been given to its withdrawal by another.

Further, I (we) claim and say that I (we) have read the statements and made herein; know the contents hereof; and that the same are true to my (our) knowledge.

Park State Bank & Trust, Trustee
Joseph E. Walnofer, Vice President

Joseph E. Walnofer VP 9/19/2006
Signature Date

Signature Date

.....
INSTRUCTIONS:

Please type or print neatly in black ink. This form may be reproduced by photocopy or word processing means.

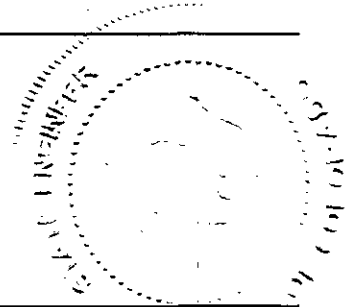
**COLORADO GROUND WATER COMMISSION
FINDINGS AND ORDER**

IN THE MATTER OF AN APPLICATION FOR DETERMINATION OF WATER RIGHT TO ALLOW THE WITHDRAWAL OF GROUND WATER IN THE UPPER BLACK SQUIRREL CREEK DESIGNATED GROUND WATER BASIN

APPLICANT: PETER R. SPAHN INVESTMENT TRUST

AQUIFER: ARAPAHOE

DETERMINATION NO.: 1066-BD



In compliance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, Peter R. Spahn Investment Trust (hereinafter "applicant") submitted an application for determination of water right to allow the withdrawal of designated ground water from the Arapahoe Aquifer.

FINDINGS

1. The application was received complete by the Colorado Ground Water Commission on September 22, 2006.
2. The applicant requests a determination of rights to designated ground water in the Arapahoe Aquifer (hereinafter "aquifer") underlying 37.7 acres, generally described as the W $\frac{1}{2}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, the NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, and the NW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 10, Township 12 South, Range 65 West of the 6th Principal Meridian, in El Paso County. According to a signed statement dated September 19, 2006, the applicant owns the 37.7 acres of land, as further described in said affidavit which is attached hereto as Exhibit A, and claims control of the ground water in the aquifer underlying this land area.
3. The proposed annual amount of ground water to be allocated and withdrawn from the aquifer for intended beneficial uses is the maximum allowable amount.
4. The above described land area overlying the ground water claimed by the applicant is located within the boundaries of the Upper Black Squirrel Creek Designated Ground Water Basin and within the Upper Black Squirrel Creek Ground Water Management District. The Colorado Ground Water Commission (hereinafter "Commission") has jurisdiction.
5. The applicant intends to apply the allocated ground water to the following beneficial uses: indoor residential and commercial (home-based business), stock watering, irrigation, hot tub/swimming pool, and augmentation. The applicant's proposed place of use of the allocated ground water is the above described 37.7 acre land area.
6. The quantity of water in the aquifer underlying the 37.7 acres of land claimed by the applicant is 1,666 acre-feet. This determination was based on the following as specified in the Designated Basin Rules:
 - a. The average specific yield of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 17 percent.

- b. The average thickness of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 260 feet.
7. At this time, there is no substantial artificial recharge that would affect the aquifer within a one hundred year period.
 8. Pursuant to Section 37-90-107(7), C.R.S., and in accordance with the Designated Basin Rules, the Commission shall allocate ground water in the aquifer based on ownership of the overlying land and an aquifer life of one hundred years. Therefore, the maximum allowed average annual amount of ground water in the aquifer that may be allocated for withdrawal pursuant to the data in the paragraphs above for the 37.7 acres of overlying land claimed by the applicant is 16.7 acre-feet.
 9. A review of the records in the Office of the State Engineer has disclosed that none of the water in the aquifer underlying the land claimed by the applicant has been previously allocated or permitted for withdrawal.
 10. Pursuant to Section 37-90-107(7)(c)(III), C.R.S., an approved determination of water right shall be considered a final determination of the amount of ground water so determined; except that the Commission shall retain jurisdiction for subsequent adjustment of such amount to conform to the actual local aquifer characteristics from adequate information obtained from well drilling or test holes.
 11. The ability of wells permitted to withdraw the authorized amount of water from this non-renewable aquifer may be less than the one hundred years upon which the amount of water in the aquifer is allocated, due to anticipated water level declines.
 12. In accordance with Rule 5.3.6 of the Designated Basin Rules, it has been determined that withdrawal of ground water from the aquifer underlying the land claimed by the applicant will not, within one hundred years, deplete the flow of a natural stream or its alluvial aquifer at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal and, therefore, the ground water is nontributary ground water as defined in Rule 4.2.19 of the Designated Basin Rules. No more than 98% of the amount of ground water withdrawn annually shall be consumed, as required by the Designated Basin Rules.
 13. In accordance with Section 37-90-107(7), C.R.S., upon Commission approval of a determination of water right, well permits for wells to withdraw the authorized amount of water from the aquifer shall be available upon application, subject to the conditions of this determination and the Designated Basin Rules and subject to approval by the Commission.
 14. On October 5, 2006, in accordance with Rule 9.1 of the Designated Basin Rules, a letter was sent to the Upper Black Squirrel Creek Ground Water Management District requesting written recommendations concerning this application. No written recommendations from the district were received.
 15. The Commission Staff has evaluated the application relying on the claims to control of the ground water in the aquifer made by the applicant.

16. In accordance with Sections 37-90-107(7) and 37-90-112, C.R.S., the application was published in the Ranchland News newspaper on October 12 and 19, 2006.
17. No objections to the determination of water right and proposed allocation of ground water were received within the time limit set by statute.
18. In order to prevent unreasonable impairment to the existing water rights of others within the Upper Black Squirrel Creek Designated Ground Water Basin it is necessary to impose conditions on the determination of water right and proposed allocation of ground water. Under conditions as stated in the following Order, no unreasonable impairment of existing water rights will occur from approval of this determination of water right or from the issuance of well permits for wells to withdraw the authorized amount of allocated ground water from the aquifer.

ORDER

In accordance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, the Colorado Ground Water Commission orders that the application for determination of rights to designated ground water in the Arapahoe Aquifer underlying 37.7 acres of land, generally described as the W $\frac{1}{2}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, the NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, and the NW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 10, Township 12 South, Range 65 West of the 6th Principal Meridian, is approved subject to the following conditions:

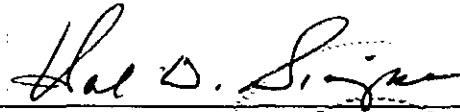
19. The allowed average annual amount of withdrawal of ground water from the aquifer shall not exceed 16.7 acre-feet. The allowed maximum annual amount of withdrawal may exceed the allowed average annual amount of withdrawal as long as the total volume of water withdrawn does not exceed the product of the number of years since the date of approval of this determination times the allowed average annual amount of withdrawal.
20. To conform to actual aquifer characteristics, the Commission may adjust the allowed average annual amount of ground water to be withdrawn from the aquifer based on analysis of geophysical logs or other site-specific data if such analysis indicates that the initial estimate of the volume of water in the aquifer was incorrect.
21. The applicant may pump the allowed average annual amount of withdrawal and the allowed maximum annual amount of withdrawal from one or more wells of a well field in any combination, so long as the total combined withdrawal of the wells does not exceed the amounts described in this Order.
22. No more than 98% of the ground water withdrawn annually shall be consumed. The Commission may require well owners to demonstrate periodically that no more than 98% of the water withdrawn is being consumed.
23. The use of ground water from this allocation shall be limited to the following beneficial uses: indoor residential and commercial (home-based business), stock watering, irrigation, hot tub/swimming pool, and augmentation. The place of use shall be limited to the above described 37.7 acre land area.

24. The applicant, or subsequent persons controlling this water right, shall record in the public records of the county - in which the claimed overlying land is located - notice of transfer of any portion of this water right to another within sixty days after the transfer, so that a title examination of the above described 37.7 acre land area, or any part thereof, shall reveal the changes affecting this water right. Such notice shall consist of a signed and dated deed which indicates the determination number, the aquifer, a description of the above described land area, the annual amount of ground water (acre-feet) transferred, name of the recipient, and the date of transfer.
25. Subject to the above conditions, well permits for wells to withdraw the allocated annual amount of water from the aquifer shall be available upon application subject to approval by the Commission and the following conditions:
 - a. The wells shall be located on the above described 37.7 acre overlying land area.
 - b. The wells must be constructed to withdraw water from only the Arapahoe Aquifer. Upon application for a well permit to construct such a well, the estimated top and base of the aquifer at the proposed well location will be determined by the Commission and indicated on the approved well permit. Plain non-perforated casing must be installed, grouted and sealed to prevent diversion of ground water from other aquifers and the movement of ground water between aquifers.
 - c. The entire depth of each well must be geophysically logged prior to installing the casing as set forth in Rule 9 of the Statewide Nontributary Ground Water Rules, 2 CCR 402-7.
 - d. Each well shall be constructed within 200 feet of the location specified on the approved well permit, but must be more than 600 feet from any existing large-capacity well completed in the same aquifer.
 - e. A totalizing flow meter or other Commission approved measuring device shall be installed on each well and maintained in good working order by the well owner. Annual diversion records shall be collected and maintained by the well owner and submitted to the Commission or the Upper Black Squirrel Ground Water Management District upon their request.
 - f. The well owner shall mark the well in a conspicuous place with the permit number and the name of the aquifer. The well owner shall take necessary means and precautions to preserve these markings.
26. A copy of this Findings and Order shall be recorded by the applicant in the public records of the county in which the claimed overlying land is located so that a title examination of the above described 37.7 acre overlying land area, or any part thereof, shall reveal the existence of this determination.

Applicant: Peter R. Spahn Investment Trust
Aquifer: Arapahoe
Determination No.: 1066-BD

Page 5

Dated this 29th day of November, 2006.



Hal D. Simpson
Executive Director
Colorado Ground Water Commission

By: 

Keith Vander Horst, P.E.
Supervisor, Designated Basins

Prepared by: SKR

GWS 1
06/09/00

1066-BD

Page 1 of 1

SEP 22 2006

STATE OF COLORADO
OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RESOURCES
1313 Sherman St. Room 821
Denver, CO 80203
(303) 866-3581 Fax (303) 866-3589

WATER RESOURCES
STATE ENGINEER
COLO.

NONTRIBUTARY GROUND WATER LANDOWNERSHIP STATEMENT

I (We) Peter R. Spahn Investment Trust
(Name(s))

Claim and say that I (we) am (are) the owner(s) of the following described property consisting of 37.7 acres in the County of El Paso, State of Colorado:

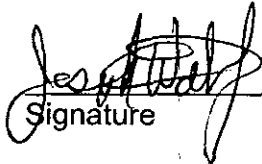
(Insert the property legal description)

W 1/2 NW 1/4 NW 1/4;
NE 1/4 NW 1/4 NW 1/4;
NW 1/4 SW 1/4 NW 1/4;
Sec. 10, T. 12S., R. 65W., 6th PM

and, that the ground water sought to be withdrawn from the Arapahoe aquifer underlying the above-described and has not been conveyed to reserved to another, nor has consent been given to its withdrawal by another.

Further, I (we) claim and say that I (we) have read the statements and made herein; know the contents hereof; and that the same are true to my (our) knowledge.

Park State Bank & Trust, Trustee
Joseph E. Walnofer, Vice President

 VP
Signature 9/19/2006
Date

Signature Date

.....
INSTRUCTIONS:

Please type or print neatly in black ink. This form may be reproduced by photocopy or word processing means.

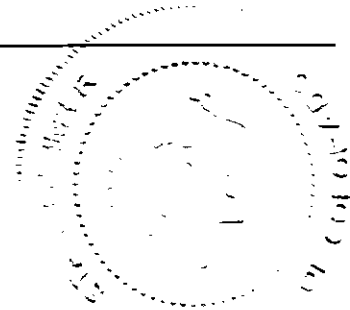
**COLORADO GROUND WATER COMMISSION
FINDINGS AND ORDER**

IN THE MATTER OF AN APPLICATION FOR DETERMINATION OF WATER RIGHT TO ALLOW THE WITHDRAWAL OF GROUND WATER IN THE UPPER BLACK SQUIRREL CREEK DESIGNATED GROUND WATER BASIN

APPLICANT: PETER R. SPAHN INVESTMENT TRUST

AQUIFER: DENVER

DETERMINATION NO.: **1067-BD**



In compliance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, Peter R. Spahn Investment Trust (hereinafter "applicant") submitted an application for determination of water right to allow the withdrawal of designated ground water from the Denver Aquifer.

FINDINGS

1. The application was received complete by the Colorado Ground Water Commission on September 22, 2006.
2. The applicant requests a determination of rights to designated ground water in the Denver Aquifer (hereinafter "aquifer") underlying 37.7 acres, generally described as the W $\frac{1}{2}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, the NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, and the NW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 10, Township 12 South, Range 65 West of the 6th Principal Meridian, in El Paso County. According to a signed statement dated September 19, 2006, the applicant owns the 37.7 acres of land, as further described in said affidavit which is attached hereto as Exhibit A, and claims control of the ground water in the aquifer underlying this land area.
3. The proposed annual amount of ground water to be allocated and withdrawn from the aquifer for intended beneficial uses is the maximum allowable amount.
4. The above described land area overlying the ground water claimed by the applicant is located within the boundaries of the Upper Black Squirrel Creek Designated Ground Water Basin and within the Upper Black Squirrel Creek Ground Water Management District. The Colorado Ground Water Commission (hereinafter "Commission") has jurisdiction.
5. The applicant intends to apply the allocated ground water to the following beneficial uses: indoor residential and commercial (home-based business), stock watering, irrigation, hot tub/swimming pool, and augmentation. The applicant's proposed place of use of the allocated ground water is the above described 37.7 acre land area.
6. The quantity of water in the aquifer underlying the 37.7 acres of land claimed by the applicant is 2,371 acre-feet. This determination was based on the following as specified in the Designated Basin Rules:
 - a. The average specific yield of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 17 percent.

- b. The average thickness of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 370 feet.
7. At this time, there is no substantial artificial recharge that would affect the aquifer within a one hundred year period.
 8. Pursuant to Section 37-90-107(7), C.R.S., and in accordance with the Designated Basin Rules, the Commission shall allocate ground water in the aquifer based on ownership of the overlying land and an aquifer life of one hundred years. Therefore, the maximum allowed average annual amount of ground water in the aquifer that may be allocated for withdrawal pursuant to the data in the paragraphs above for the 37.7 acres of overlying land claimed by the applicant is 23.7 acre-feet.
 9. A review of the records in the Office of the State Engineer has disclosed that none of the water in the aquifer underlying the land claimed by the applicant has been previously allocated or permitted for withdrawal.
 10. Pursuant to Section 37-90-107(7)(c)(III), C.R.S., an approved determination of water right shall be considered a final determination of the amount of ground water so determined; except that the Commission shall retain jurisdiction for subsequent adjustment of such amount to conform to the actual local aquifer characteristics from adequate information obtained from well drilling or test holes.
 11. The ability of wells permitted to withdraw the authorized amount of water from this non-renewable aquifer may be less than the one hundred years upon which the amount of water in the aquifer is allocated, due to anticipated water level declines.
 12. In accordance with Rule 5.3.6 of the Designated Basin Rules, it has been determined that withdrawal of ground water from the aquifer underlying the land claimed by the applicant will not, within one hundred years, deplete the flow of a natural stream or its alluvial aquifer at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal and, therefore, the ground water is nontributary ground water as defined in Rule 4.2.19 of the Designated Basin Rules. No more than 98% of the amount of ground water withdrawn annually shall be consumed, as required by the Designated Basin Rules.
 13. In accordance with Section 37-90-107(7), C.R.S., upon Commission approval of a determination of water right, well permits for wells to withdraw the authorized amount of water from the aquifer shall be available upon application, subject to the conditions of this determination and the Designated Basin Rules and subject to approval by the Commission.
 14. On October 5, 2006, in accordance with Rule 9.1 of the Designated Basin Rules, a letter was sent to the Upper Black Squirrel Creek Ground Water Management District requesting written recommendations concerning this application. No written recommendations from the district were received.
 15. The Commission Staff has evaluated the application relying on the claims to control of the ground water in the aquifer made by the applicant.

16. In accordance with Sections 37-90-107(7) and 37-90-112, C.R.S., the application was published in the Ranchland News newspaper on October 12 and 19, 2006.
17. No objections to the determination of water right and proposed allocation of ground water were received within the time limit set by statute.
18. In order to prevent unreasonable impairment to the existing water rights of others within the Upper Black Squirrel Creek Designated Ground Water Basin it is necessary to impose conditions on the determination of water right and proposed allocation of ground water. Under conditions as stated in the following Order, no unreasonable impairment of existing water rights will occur from approval of this determination of water right or from the issuance of well permits for wells to withdraw the authorized amount of allocated ground water from the aquifer.

ORDER


In accordance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, the Colorado Ground Water Commission orders that the application for determination of rights to designated ground water in the Denver Aquifer underlying 37.7 acres of land, generally described as the W $\frac{1}{2}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, the NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, and the NW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 10, Township 12 South, Range 65 West of the 6th Principal Meridian, is approved subject to the following conditions:

19. The allowed average annual amount of withdrawal of ground water from the aquifer shall not exceed 23.7 acre-feet. The allowed maximum annual amount of withdrawal may exceed the allowed average annual amount of withdrawal as long as the total volume of water withdrawn does not exceed the product of the number of years since the date of approval of this determination times the allowed average annual amount of withdrawal.
20. To conform to actual aquifer characteristics, the Commission may adjust the allowed average annual amount of ground water to be withdrawn from the aquifer based on analysis of geophysical logs or other site-specific data if such analysis indicates that the initial estimate of the volume of water in the aquifer was incorrect.
21. The applicant may pump the allowed average annual amount of withdrawal and the allowed maximum annual amount of withdrawal from one or more wells of a well field in any combination, so long as the total combined withdrawal of the wells does not exceed the amounts described in this Order.
22. No more than 98% of the ground water withdrawn annually shall be consumed. The Commission may require well owners to demonstrate periodically that no more than 98% of the water withdrawn is being consumed.
23. The use of ground water from this allocation shall be limited to the following beneficial uses: indoor residential and commercial (home-based business), stock watering, irrigation, hot tub/swimming pool, and augmentation. The place of use shall be limited to the above described 37.7 acre land area.

24. The applicant, or subsequent persons controlling this water right, shall record in the public records of the county - in which the claimed overlying land is located - notice of transfer of any portion of this water right to another within sixty days after the transfer, so that a title examination of the above described 37.7 acre land area, or any part thereof, shall reveal the changes affecting this water right. Such notice shall consist of a signed and dated deed which indicates the determination number, the aquifer, a description of the above described land area, the annual amount of ground water (acre-feet) transferred, name of the recipient, and the date of transfer.
25. Subject to the above conditions, well permits for wells to withdraw the allocated annual amount of water from the aquifer shall be available upon application subject to approval by the Commission and the following conditions:
 - a. The wells shall be located on the above described 37.7 acre overlying land area.
 - b. The wells must be constructed to withdraw water from only the Denver Aquifer. Upon application for a well permit to construct such a well, the estimated top and base of the aquifer at the proposed well location will be determined by the Commission and indicated on the approved well permit. Plain non-perforated casing must be installed, grouted and sealed to prevent diversion of ground water from other aquifers and the movement of ground water between aquifers.
 - c. The entire depth of each well must be geophysically logged prior to installing the casing as set forth in Rule 9 of the Statewide Nontributary Ground Water Rules, 2 CCR 402-7.
 - d. Each well shall be constructed within 200 feet of the location specified on the approved well permit, but must be more than 600 feet from any existing large-capacity well completed in the same aquifer.
 - e. A totalizing flow meter or other Commission approved measuring device shall be installed on each well and maintained in good working order by the well owner. Annual diversion records shall be collected and maintained by the well owner and submitted to the Commission or the Upper Black Squirrel Ground Water Management District upon their request.
 - f. The well owner shall mark the well in a conspicuous place with the permit number and the name of the aquifer. The well owner shall take necessary means and precautions to preserve these markings.
26. A copy of this Findings and Order shall be recorded by the applicant in the public records of the county in which the claimed overlying land is located so that a title examination of the above described 37.7 acre overlying land area, or any part thereof, shall reveal the existence of this determination.

Applicant: Peter R. Spahn Investment Trust
Aquifer: Denver
Determination No.: 1067-BD

Dated this 29th day of November, 2006.



Hal D. Simpson
Executive Director
Colorado Ground Water Commission

By: Keith Vander Horst
Keith Vander Horst, P.E.
Supervisor, Designated Basins

Prepared by: SKR

EXHIBIT A

GWS 1
06/09/00

1067-BD

RECEIVED

Page 1 of 1

SEP 22 2006

STATE OF COLORADO
OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RESOURCES
1313 Sherman St. Room 821
Denver, CO 80203
(303) 866-3581 Fax (303) 866-3589

WATER RESOURCES
STATE ENGINEER
COLO.

NONTRIBUTARY GROUND WATER LANDOWNERSHIP STATEMENT

I (We) Peter R. Spahn Investment Trust
(Name(s))

Claim and say that I (we) am (are) the owner(s) of the following described property consisting of 37.7 acres in the County of El Paso, State of Colorado:

(Insert the property legal description)
W 1/2 NW 1/4 NW 1/4;
NE 1/4 NW 1/4 NW 1/4;
NW 1/4 SW 1/4 NW 1/4;
Sec. 10, T. 12S., R. 65W., 6th PM

and, that the ground water sought to be withdrawn from the Denver aquifer underlying the above-described and has not been conveyed to reserved to another, nor has consent been given to its withdrawal by another.

Further, I (we) claim and say that I (we) have read the statements and made herein; know the contents hereof; and that the same are true to my (our) knowledge.

Park State Bank & Trust, Trustee
Joseph E. Walnofer, Vice President

Joseph E. Walnofer VP 9/19/2006
Signature Date

Signature Date

.....
INSTRUCTIONS:

Please type or print neatly in black ink. This form may be reproduced by photocopy or word processing means.

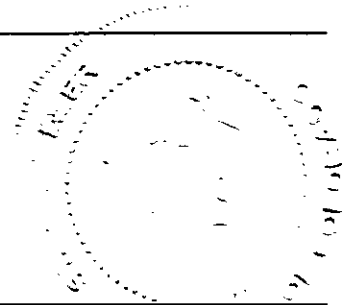
**COLORADO GROUND WATER COMMISSION
FINDINGS AND ORDER**

IN THE MATTER OF AN APPLICATION FOR DETERMINATION OF WATER RIGHT TO ALLOW THE WITHDRAWAL OF GROUND WATER IN THE UPPER BLACK SQUIRREL CREEK DESIGNATED GROUND WATER BASIN

APPLICANT: PETER R. SPAHN INVESTMENT TRUST

AQUIFER: DAWSON

DETERMINATION NO.: 1068-BD



In compliance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, Peter R. Spahn Investment Trust (hereinafter "applicant") submitted an application for determination of water right to allow the withdrawal of designated ground water from the Dawson Aquifer.

FINDINGS

1. The application was received complete by the Colorado Ground Water Commission on September 22, 2006.
2. The applicant requests a determination of rights to designated ground water in the Dawson Aquifer (hereinafter "aquifer") underlying 37.7 acres, generally described as the W $\frac{1}{2}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, the NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, and the NW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 10, Township 12 South, Range 65 West of the 6th Principal Meridian, in El Paso County. According to a signed statement dated September 19, 2006, the applicant owns the 37.7 acres of land, as further described in said affidavit which is attached hereto as Exhibit A, and claims control of the ground water in the aquifer underlying this land area.
3. The proposed annual amount of ground water to be allocated and withdrawn from the aquifer for intended beneficial uses is the maximum allowable amount.
4. The above described land area overlying the ground water claimed by the applicant is located within the boundaries of the Upper Black Squirrel Creek Designated Ground Water Basin and within the Upper Black Squirrel Creek Ground Water Management District. The Colorado Ground Water Commission (hereinafter "Commission") has jurisdiction.
5. The applicant intends to apply the allocated ground water to the following beneficial uses: indoor residential and commercial (home-based business), stock watering, irrigation, hot tub/swimming pool, and augmentation. The applicant's proposed place of use of the allocated ground water is the above described 37.7 acre land area.
6. The quantity of water in the aquifer underlying the 37.7 acres of land claimed by the applicant is 2,941 acre-feet. This determination was based on the following as specified in the Designated Basin Rules:
 - a. The average specific yield of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 20 percent.

- b. The average thickness of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 390 feet based on evaluation of the geologic log of an existing well, Permit No. 214120, located on the property. Use of this geologic log constitutes site specific data as provided for by Rule 5.3.4.2 of the Designated Basin Rules.
7. At this time, there is no substantial artificial recharge that would affect the aquifer within a one hundred year period.
 8. Pursuant to Section 37-90-107(7), C.R.S., and in accordance with the Designated Basin Rules, the Commission shall allocate ground water in the aquifer based on ownership of the overlying land and an aquifer life of one hundred years. Therefore, the maximum allowed average annual amount of ground water in the aquifer that may be allocated for withdrawal pursuant to the data in the paragraphs above for the 37.7 acres of overlying land claimed by the applicant is 29.4 acre-feet.
 9. In accordance with Rule 5.3.2.4 of the Designated Basin Rules, the maximum average annual amount of ground water available for allocation from the aquifer underlying the 37.7 acres of land claimed by the applicant is reduced to 28.4 acre-feet to allow for the annual withdrawal of a small capacity well which is completed in the aquifer, Permit No. 214120. Except for this well, review of the records in the Office of the State Engineer has disclosed that none of the water in the aquifer underlying the land claimed by the applicant has been previously allocated or permitted for withdrawal.
 10. Pursuant to Section 37-90-107(7)(c)(III), C.R.S., an approved determination of water right shall be considered a final determination of the amount of ground water so determined; except that the Commission shall retain jurisdiction for subsequent adjustment of such amount to conform to the actual local aquifer characteristics from adequate information obtained from well drilling or test holes.
 11. The ability of wells permitted to withdraw the authorized amount of water from this non-renewable aquifer may be less than the one hundred years upon which the amount of water in the aquifer is allocated, due to anticipated water level declines.
 12. In accordance with Rule 5.3.6 of the Designated Basin Rules, it has been determined that withdrawal of ground water from the aquifer underlying the land claimed by the applicant will, within one hundred years, deplete the flow of a natural stream or its alluvial aquifer at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal and, therefore, the ground water is considered to be not-nontributary ground water. Withdrawal of water from the aquifer underlying the claimed land area would impact the alluvial aquifer of Upper Black Squirrel Creek or its tributaries, which has been determined to be over-appropriated. Commission approval of a replacement plan - pursuant to Section 37-90-107.5, C.R.S., and Rule 5.6 of the Designated Basin Rules - providing for the actual depletion of the alluvial aquifer and adequate to prevent any material injury to existing water rights, would be required prior to approval of well permits for wells to be located on this land area to withdraw the allocated ground water from the aquifer.

13. In accordance with Section 37-90-107(7), C.R.S., upon Commission approval of a determination of water right, well permits for wells to withdraw the authorized amount of water from the aquifer shall be available upon application, subject to the conditions of this determination and the Designated Basin Rules and subject to approval by the Commission.
14. On October 5, 2006, in accordance with Rule 9.1 of the Designated Basin Rules, a letter was sent to the Upper Black Squirrel Creek Ground Water Management District requesting written recommendations concerning this application. No written recommendations from the district were received.
15. The Commission Staff has evaluated the application relying on the claims to control of the ground water in the aquifer made by the applicant.
16. In accordance with Sections 37-90-107(7) and 37-90-112, C.R.S., the application was published in the Ranchland News newspaper on October 12 and 19, 2006.
17. No objections to the determination of water right and proposed allocation of ground water were received within the time limit set by statute.
18. In order to prevent unreasonable impairment to the existing water rights of others within the Upper Black Squirrel Creek Designated Ground Water Basin it is necessary to impose conditions on the determination of water right and proposed allocation of ground water. Under conditions as stated in the following Order, no unreasonable impairment of existing water rights will occur from approval of this determination of water right or from the issuance of well permits for wells to withdraw the authorized amount of allocated ground water from the aquifer.

ORDER

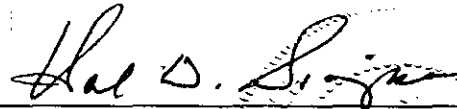
In accordance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, the Colorado Ground Water Commission orders that the application for determination of rights to designated ground water in the Dawson Aquifer underlying 37.7 acres of land, generally described as the $W\frac{1}{2}$ of the $NW\frac{1}{4}$ of the $NW\frac{1}{4}$, the $NE\frac{1}{4}$ of the $NW\frac{1}{4}$ of the $NW\frac{1}{4}$, and the $NW\frac{1}{4}$ of the $SW\frac{1}{4}$ of the $NW\frac{1}{4}$ of Section 10, Township 12 South, Range 65 West of the 6th Principal Meridian, is approved subject to the following conditions:

19. The allowed average annual amount of withdrawal of ground water from the aquifer shall not exceed 28.4 acre-feet. The allowed maximum annual amount of withdrawal may exceed the allowed average annual amount of withdrawal as long as the total volume of water withdrawn does not exceed the product of the number of years since the date of approval of this determination times the allowed average annual amount of withdrawal.
20. To conform to actual aquifer characteristics, the Commission may adjust the allowed average annual amount of ground water to be withdrawn from the aquifer based on analysis of geophysical logs or other site-specific data if such analysis indicates that the initial estimate of the volume of water in the aquifer was incorrect.


21. The applicant may pump the allowed average annual amount of withdrawal and the allowed maximum annual amount of withdrawal from one or more wells of a well field in any combination, so long as the total combined withdrawal of the wells does not exceed the amounts described in this Order.
22. Commission approval of a replacement plan, providing for actual depletion of affected alluvial aquifers and adequate to prevent any material injury to existing water rights in such alluvial aquifers is required prior to approval of well permits for wells to be located on the overlying land area to withdraw ground water from the aquifer.
23. The use of ground water from this allocation shall be limited to the following beneficial uses: indoor residential and commercial (home-based business), stock watering, irrigation, hot tub/swimming pool, and augmentation. The place of use shall be limited to the above described 37.7 acre land area.
24. The applicant, or subsequent persons controlling this water right, shall record in the public records of the county - in which the claimed overlying land is located - notice of transfer of any portion of this water right to another within sixty days after the transfer, so that a title examination of the above described 37.7 acre land area, or any part thereof, shall reveal the changes affecting this water right. Such notice shall consist of a signed and dated deed which indicates the determination number, the aquifer, a description of the above described land area, the annual amount of ground water (acre-feet) transferred, name of the recipient, and the date of transfer.
25. Subject to the above conditions, well permits for wells to withdraw the allocated annual amount of water from the aquifer shall be available upon application subject to approval by the Commission and the following conditions:
 - a. The wells shall be located on the above described 37.7 acre overlying land area.
 - b. The wells must be constructed to withdraw water from only the Dawson Aquifer. Upon application for a well permit to construct such a well, the estimated top and base of the aquifer at the proposed well location will be determined by the Commission and indicated on the approved well permit. Plain non-perforated casing must be installed, grouted and sealed to prevent diversion of ground water from other aquifers and the movement of ground water between aquifers.
 - c. The entire depth of each well must be geophysically logged prior to installing the casing as set forth in Rule 9 of the Statewide Nontributary Ground Water Rules, 2 CCR 402-7.
 - d. Each well shall be constructed within 200 feet of the location specified on the approved well permit, but must be more than 600 feet from any existing large-capacity well completed in the same aquifer.

- e. A totalizing flow meter or other Commission approved measuring device shall be installed on each well and maintained in good working order by the well owner. Annual diversion records shall be collected and maintained by the well owner and submitted to the Commission or the Upper Black Squirrel Ground Water Management District upon their request.
- f. The well owner shall mark the well in a conspicuous place with the permit number and the name of the aquifer. The well owner shall take necessary means and precautions to preserve these markings.
26. A copy of this Findings and Order shall be recorded by the applicant in the public records of the county in which the claimed overlying land is located so that a title examination of the above described 37.7 acre overlying land area, or any part thereof, shall reveal the existence of this determination.

Dated this 29th day of November, 2006.



Hal D. Simpson
Executive Director
Colorado Ground Water Commission

By: 

Keith Vander Horst, P.E.
Supervisor, Designated Basins

Prepared by: SKR

GWS 1
06/09/00

1068-BD

Page 1 of 1

SEP 22 2006

WATER RESOURCES
STATE ENGINEER
COLO.

STATE OF COLORADO
OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RESOURCES
1313 Sherman St. Room 821
Denver, CO 80203
(303) 866-3581 Fax (303) 866-3589

NONTRIBUTARY GROUND WATER LANDOWNERSHIP STATEMENT

I (We) Peter R. Spahn Investment Trust
(Name(s))

Claim and say that I (we) am (are) the owner(s) of the following described property consisting of 37.7 acres in the County of El Paso, State of Colorado:

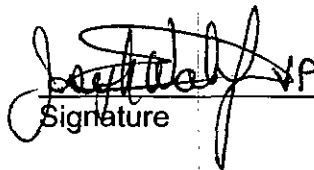
(Insert the property legal description)

W 1/2 NW 1/4 NW 1/4;
NE 1/4 NW 1/4 NW 1/4;
NW 1/4 SW 1/4 NW 1/4;
Sec. 10, T. 12S., R. 65W., 6th PM

and, that the ground water sought to be withdrawn from the Dawson aquifer underlying the above-described and has not been conveyed to reserved to another, nor has consent been given to its withdrawal by another.

Further, I (we) claim and say that I (we) have read the statements and made herein; know the contents hereof; and that the same are true to my (our) knowledge.

Park State Bank & Trust, Trustee
Joseph E. Walnofer, Vice President


Signature

9/19/2006
Date

Signature

Date

.....
INSTRUCTIONS:

Please type or print neatly in black ink. This form may be reproduced by photocopy or word processing means.

Appendix E

March 4, 2020

SMH Consultants
411 S. Tejon Street, Suite 1
Colorado Springs, CO 80903



ENTECH
ENGINEERING, INC.

505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
PHONE (719) 531-5599
FAX (719) 531-5238

Attn: Brett Louk

Re: Wastewater Study
Aztec Residential Subdivision
13235 Vollmer Road
Parcel No. 52000-00-303
El Paso County, Colorado

Dear Mr. Louk:

GENERAL SITE CONDITIONS AND PROJECT DESCRIPTION

The site is located in a portion of the NW¼ of Section 10, Township 12 South, Range 65 West of the 6th Principal Meridian in El Paso County, Colorado. The site is located approximately 5 miles northeast of Colorado Springs city limits, southeast of Swan Road and Vollmer Road in El Paso County, Colorado. The location of the site is as shown on the Vicinity Map, Figure 1.

The topography of the site is gradually to moderately sloping to the south to south-southeast, and to the north. The Palmer Divide bisects the central portion of the site. The head of a minor drainage is located in the southern portion of the property. Water was not observed in the drainage at the time of this investigation. The site boundaries are indicated on the USGS Map, Figure 2. Previous land uses have included undeveloped and a rural residential. The southern portion of the site is located in the northeastern extent of the Black Forest burn scar. The site contains field grasses, weeds, kinnikinnick, and ponderosa pines in the western portion of the site and around the existing house located on Lot 4. Site photographs, taken January 24, 2020, are included in Appendix A.

Total acreage involved in the proposed subdivision is 37.7-acres. Four rural residential lots are proposed as part of the replat. The proposed lot sizes range from 4.79-acres to 18.60-acres. An existing house is located on Lot 4 which will remain. The new lots will be serviced by individual wells and on-site wastewater treatment systems. The Site Plan with the proposed replat is presented in Figure 3.

SCOPE OF THE REPORT

The scope of the report will include the following:

- A general geologic analysis utilizing published geologic data. Detailed site-specific mapping will be conducted to obtain general information in respect to major geographic and geologic features, geologic descriptions and their effects on the development of the property with regards to on-site wastewater Treatment Systems.

FIELD INVESTIGATION

Our field investigation consisted of the preparation of a geologic map of bedrock features and significant surficial deposits. The Natural Resource Conservation Service (NRCS), previously the

SMH Consultants
Wastewater Study
Aztec Residential Subdivision
13235 Vollmer Road
Parcel No. 52000-00-303
El Paso County, Colorado

Soil Conservation Service (SCS) survey was also reviewed to evaluate the site. The position of mappable units within the subject property are shown on the Geologic Map. Our mapping procedures involved both field reconnaissance and measurements, and aerial photo reconnaissance and interpretation. The same mapping procedures have also been utilized to produce the Geology/Engineering Geology Map which identified pertinent geologic conditions affecting development. The field mapping was performed by personnel of Entech Engineering, Inc. on January 24, 2020.

Two test borings and two test pits were excavated on the site to determine general suitability for the use of on-site wastewater treatment systems and general soil characteristics for residential construction. The locations of the test pits are indicated on the Site Plan/Test Pit Location Map, Figure 3. The Test Pit Logs are presented in Appendix B. Results of this testing will be discussed later in this report.

Laboratory testing was also performed on some of the soils to classify and determine the soils engineering characteristics. Laboratory tests included grain-size analysis, ASTM D-422, and Atterberg Limits, ASTM D-4318. Results of the laboratory testing are included in Appendix C. A Summary of Laboratory Test Results is presented in Table 1.

SOIL AND GEOLOGIC CONDITIONS

Soil Survey

The Natural Resource Conservation Service (NRCS) (Reference 1, Figure 4), previously the Soil Conservation Service (Reference 2) has mapped three soil types on the site. Complete descriptions of the soil types are presented in Appendix D. In general, the soils consist of sandy loam to gravelly loamy sand and sandy clay loam. The soils are described as follows:

<u>Type</u>	<u>Description</u>
26	Elbeth Sandy Loam, 8 – 15% Slopes
40	Kettle Gravelly Loamy Sand, 3 – 8% Slopes
68	Peyton-Pring Complex, 3 – 8% Slopes

The soils have been described to have moderate to rapid permeabilities. The soils are described as well suited for use as homesites. Possible hazards with soils erosion are present on the site. The erosion potential can be controlled with vegetation. The soils have been described to have moderate erosion hazards (Reference 2).

Soils

The soils encountered in the test borings and test pits consisted of silty to slightly silty sand and sandy clay loam overlying weathered to formational clayey to silty sandstone. Bedrock was encountered at depths ranging from 3 to 7 feet. The upper sands were encountered at medium dense states and moderate moisture conditions, and the sandstone was encountered at very dense states and moderate moisture conditions. The samples of sand tested had approximately 8 to 25 percent of the soil size particles passing the No. 200 sieve. Atterberg Limits Testing resulted in the sand being non-plastic. The samples of sandstone tested had 17 to 23 percent of

SMH Consultants
Wastewater Study
Aztec Residential Subdivision
13235 Vollmer Road
Parcel No. 52000-00-303
El Paso County, Colorado

the soil size particles passing the No. 200 sieve. Atterberg Limits Testing on a sample of clayey sandstone resulted in a liquid limit of 41 and a plastic index of 20. FHA Swell Testing on a sample of the clayey sandstone resulted in an expansion pressure of 360 psf, which indicates a low expansion potential. Highly expansive claystone and siltstone lenses are commonly interbedded in the Dawson Formation.

Groundwater

Groundwater or signs of seasonally occurring water were not encountered in the test pits, which were excavated to 8 feet. Groundwater was not encountered in the test borings, which were drilled to 20 feet. It is anticipated groundwater will not affect shallow foundations on the majority of the site. Areas of potentially seasonal shallow groundwater have been mapped in the head of a minor drainage in the southern portion of the site that are discussed in the following sections. Fluctuations in groundwater conditions may occur due to variations in rainfall or other factors not readily apparent at this time. Isolated sand layers within the soil profile can carry water in the subsurface. Contractors should be cognizant of the potential for the occurrence of subsurface water features during construction.

Geology

Approximately 13 miles west of the site is a major structural feature known as the Rampart Range Fault. This fault marks the boundary between the Great Plains Physiographic Province and the Southern Rocky Mountain Province. The site exists within a large structural feature known as the Denver Basin. Bedrock in the area is typically gently dipping in a northerly direction (Reference 3). The bedrock underlying the site consists of the Dawson Formation of Cretaceous Age. The Dawson Formation typically consists of coarse-grained arkosic sandstone with interbedded layers of claystone or siltstone.

The geology of the site was evaluated using the *Geologic Map of the Black Forest*, by Thorson in 2003, (Reference 4, Figure 5). The Geology Map for the site is presented in Figure 6. Three mappable units were identified on this site which is described as follows:

- Qau Alluvium, Undivided of Holocene and Pleistocene Age:** These are sheetwash and stream deposited alluvium that exists in the western portion of the site associated with alluvial-filled valley heads. These materials typically consist of silty to clayey sands and gravel.

- QTa Alluvium of Palmer Divide of Early Pleistocene or Pliocene Age:** These materials consist of water-deposited stream terrace deposits located along the Palmer Divide. They typically consist of silty to clayey sands with gravelly lenses and may contain areas of pebble and cobble lenses.

- Qc/Tkd Colluvium of Quaternary Age overlying Dawson Formation of Tertiary to Cretaceous Age:** The materials consist of colluvial or residual soils overlying the bedrock materials on-site. The colluvial soils were deposited by the action of sheetwash and gravity. The residual soils were derived from the in-situ weathering of

SMH Consultants
Wastewater Study
Aztec Residential Subdivision
13235 Vollmer Road
Parcel No. 52000-00-303
El Paso County, Colorado

the bedrock on site. These materials typically consist of silty to clayey sand with potential areas of sandy clays. The bedrock consists of the Dawson Formation. The Dawson Formation typically consists of coarse-grained, arkosic sandstone with interbedded lenses of fine-grained sandstone, siltstone and claystone.

The soils listed above were mapped from site-specific mapping, the *Geologic Map of the Black Forest Quadrangle* distributed by the Colorado Geologic Survey in 2003 (Reference 4, Figure 5), The *Geologic Map of the Colorado Springs-Castle Rock Area*, distributed by the US Geological Survey in 1979 (Reference 5), and the *Geologic Map of the Pueblo 1° x 2° Quadrangle*, distributed by the US Geological Survey in 1978 (Reference 6). The test borings and test pits were used in evaluating the site and is included in Appendix B. The Geology Map prepared for the site is presented in Figure 6.

Drainage Areas

The head of a minor drainage exists in the southern portion of the site (Lot 1) that flows in southeasterly direction. No water was observed flowing in the drainages at the time of the investigation. An area of potentially seasonal shallow groundwater has been mapped in the drainage (Figure 6).

In potentially seasonal shallow groundwater areas, we would anticipate the potential for periodically high subsurface moisture conditions and highly organic soils. Due to the potential for seasonal high groundwater conditions, on-site wastewater treatment systems are not recommended in these areas. Due to lot sizes, it is anticipated these areas can be avoided. The site does not lie within any floodplain zones according to the FEMA Map No. 08041CO320 dated December 7, 2018 (Figure 7, Reference 7). Exact locations of floodplain and specific drainage studies are beyond the scope of this report. Individual wastewater treatment systems must be located a minimum of 25 feet from dry gulches and 50 feet from water courses or floodplains.

ON-SITE WASTEWATER TREATMENT

The Natural Resource Conservation Service (Reference 1), previously the Soil Conservation Service (Reference 2) has been mapped with three soil descriptions. The Soil Survey Map (Reference 1) is presented in Figure 4, and the Soil Survey Descriptions (Reference 2) are presented in Appendix D. The soils are described as having moderate to rapid percolation rates. The existing system on Lot 4 is a low pressure dosed system. Observations Of the leach area indicated that the system is operating properly. Records for the existing septic system located on Lot 4 are included in Appendix E.

Soils encountered in the tactile test pits consisted of gravelly sandy clay loam and gravelly sandy loam overlying weathered to formational silty sandstone. The limiting layers encountered in the test pit is the sandy clay loam and clayey sandstone, which corresponds with USDA Soil Types 3A and 4A with an LTAR values of 0.30 and 0.20 gallons per day per square foot. Weathered bedrock was encountered at approximately 3 feet in the test pit on Lot 3. Signs of seasonally occurring groundwater were not observed in the test pits. Absorption fields must be maintained a minimum of 4 feet above groundwater or bedrock, or confining layer. Should groundwater or bedrock be encountered within 6 feet of the surface, designed systems will be required. Designed

SMH Consultants
Wastewater Study
Aztec Residential Subdivision
13235 Vollmer Road
Parcel No. 52000-00-303
El Paso County, Colorado

systems are anticipated for Lot 3 and proposed Lot 2, however, areas may be encountered on the lots where conventional systems would be suitable.

In summary, it is our opinion the site is suitable for individual on-site wastewater treatment systems (OWTS) and that contamination of surface and subsurface water resources should not occur provided the OWTS sites are evaluated and installed according to El Paso County and State Guidelines and properly maintained. Based on the testing performed designed systems will be required for the new lot. The Septic Suitability Map is presented in Figure 8. Areas that should be avoided by septic systems are indicated on the septic suitability map. A possible house location, water well, and two septic sites for the new lots are indicated on Figure 8. **Individual soil testing is required for proposed construction on each lot prior to construction.** Absorption fields must be located a minimum of 100 feet from any well, including those on adjacent properties. Absorption fields must also be located a minimum of 50 feet from any drainages, floodplains or ponded areas and 25 feet from dry gulches.

CLOSURE

This report has been prepared for SMH Consultants, for application to the proposed project in accordance with generally accepted geologic soil and engineering practices. No other warranty expressed or implied is made.

We trust that this report has provided you with all the information that you required. Should you require additional information, please do not hesitate to contact Entech Engineering, Inc.

Respectfully Submitted,

ENTECH ENGINEERING, INC.

Reviewed by:


Logan L. Langford, P.G.
Geologist


Joseph C. Good, P.E.
President



LLL/ao

Encl.

Entech Job No. 200160
AAprojects/2020/200160 wws

SMH Consultants
Wastewater Study
Aztec Residential Subdivision
13235 Vollmer Road
Parcel No. 52000-00-303
El Paso County, Colorado

BIBLIOGRAPHY

1. Natural Resource Conservation *Service*, September 13, 2019. *Web Soil Survey*. United States Department Agriculture, <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
2. United States Department of Agriculture Soil Conservation Service. June 1981. *Soil Survey of El Paso County Area, Colorado*.
3. Scott, Glen R.; Taylor Richard B.; Epis, Rudy C; and Wobus, Reinhard A. 1978. *Geologic Structure Map of the Pueblo 1° x 2° Quadrangle, South-Central Colorado*. Sheet 2. U.S. Geologic Survey. Map I-1022, Sheet 2.
4. Thorson, Jon P., 2003. *Geologic Map of the Black Forest Quadrangle, El Paso County, Colorado*. Colorado Geological Survey. Open-File Report 03-6.
5. Trimble, Donald E. and Machette, Michael N. 1979. *Geologic Map of the Colorado Springs-Castle Rock Area, Front Range Urban Corridor, Colorado*. USGS, Map I-857-F.
6. Scott, Glen R.; Taylor Richard B.; Epis, Rudy C; and Wobus, Reinhard A. 1978. *Geologic Structure Map of the Pueblo 1° x 2° Quadrangle, South-Central Colorado*. Sheet 2. U.S. Geologic Survey. Map I-1022.
7. Federal Emergency Management Agency. December 7, 2018. *Flood Insurance Rate Maps for the City of Colorado Springs, Colorado*. Map Number 08041CO320G

TABLES

TABLE 1
SUMMARY OF LABORATORY TEST RESULTS

CLIENT SMH CONSULTANTS
 PROJECT 13235 VOLLMER ROAD
 JOB NO. 200160

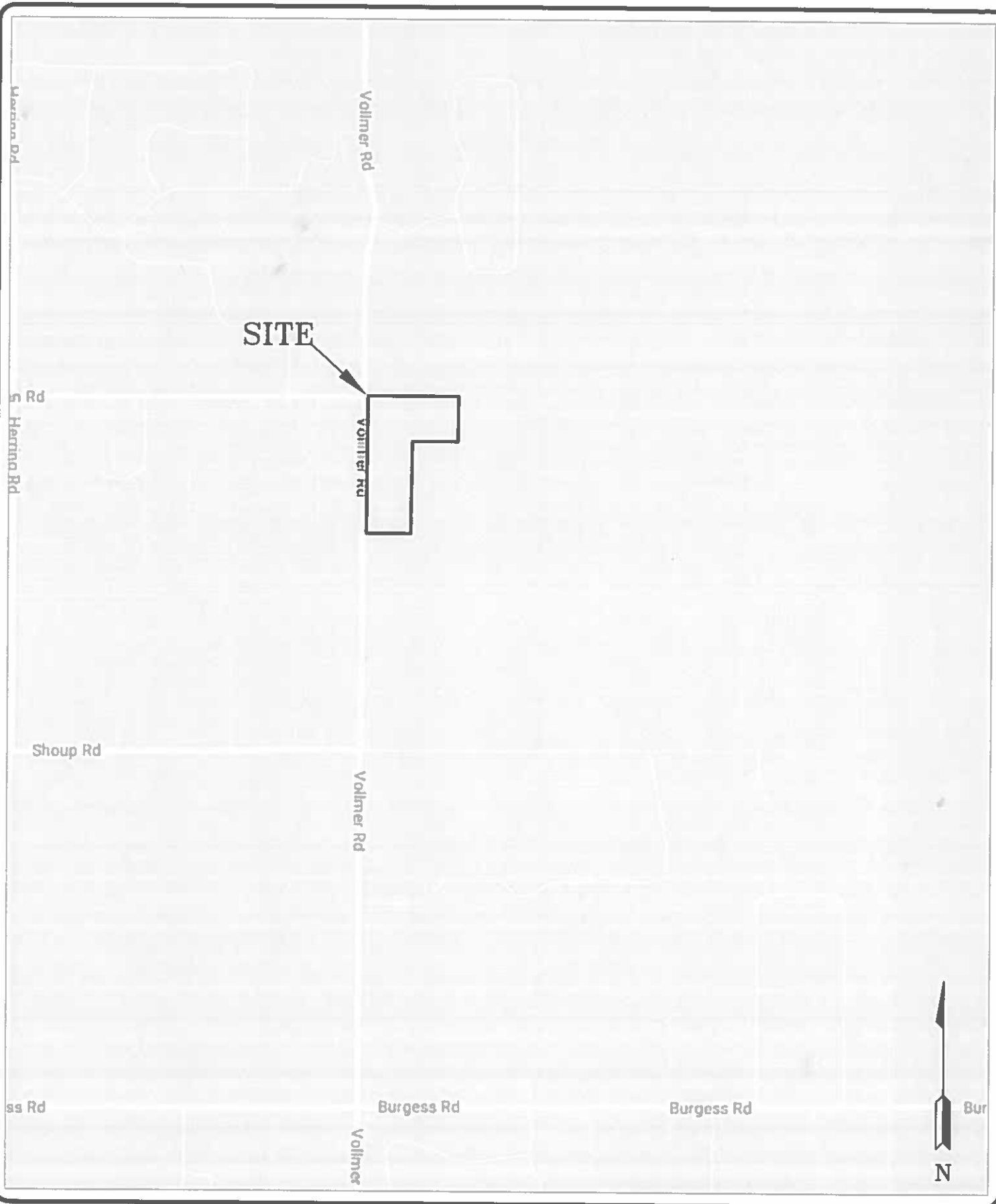
SOIL TYPE	TEST BORING NO.	DEPTH (FT)	WATER (%)	DRY DENSITY (PCF)	PASSING NO. 200 SIEVE (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	SULFATE (WT %)	FHA SWELL (PSF)	SWELL/ CONSOL (%)	UNIFIED CLASSIFICATION	SOIL DESCRIPTION
1	1	2-3			25.1						SM	SAND, SILTY
1	2	5			17.8	NV	NP				SM	SAND, SILTY
1	TP-2	5-6			8.0						SM-SW	SAND, SLIGHTLY SILTY
2	TP-1	6-7			16.5				360		SC	SANDSTONE, CLAYEY
2	1	15			23.0	41	20				SC	SANDSTONE, CLAYEY

Table 2: Summary Tactile Test Pit Results

Test Pit No.	USDA Soil Type	LTAR Value	Depth to Bedrock (ft.)	Depth to Seasonally Occurring Groundwater (ft.)
1	4A*	0.20*	3*	N/A
2	3A*	0.30*	N/A	N/A

*- Conditions that will require an engineered OWTS

FIGURES



SITE



ENTECH
ENGINEERING, INC.
 510 ELKTON DRIVE
 COLORADO SPRINGS, CO. 80907 (719) 531-5599

VICINITY MAP
 AZTEC RESIDENTIAL SUBDIVISION
 13235 VOLLMER ROAD
 EL PASO COUNTY, CO.
 FOR: SMH CONSULTANTS

JOB NO.:
 200160

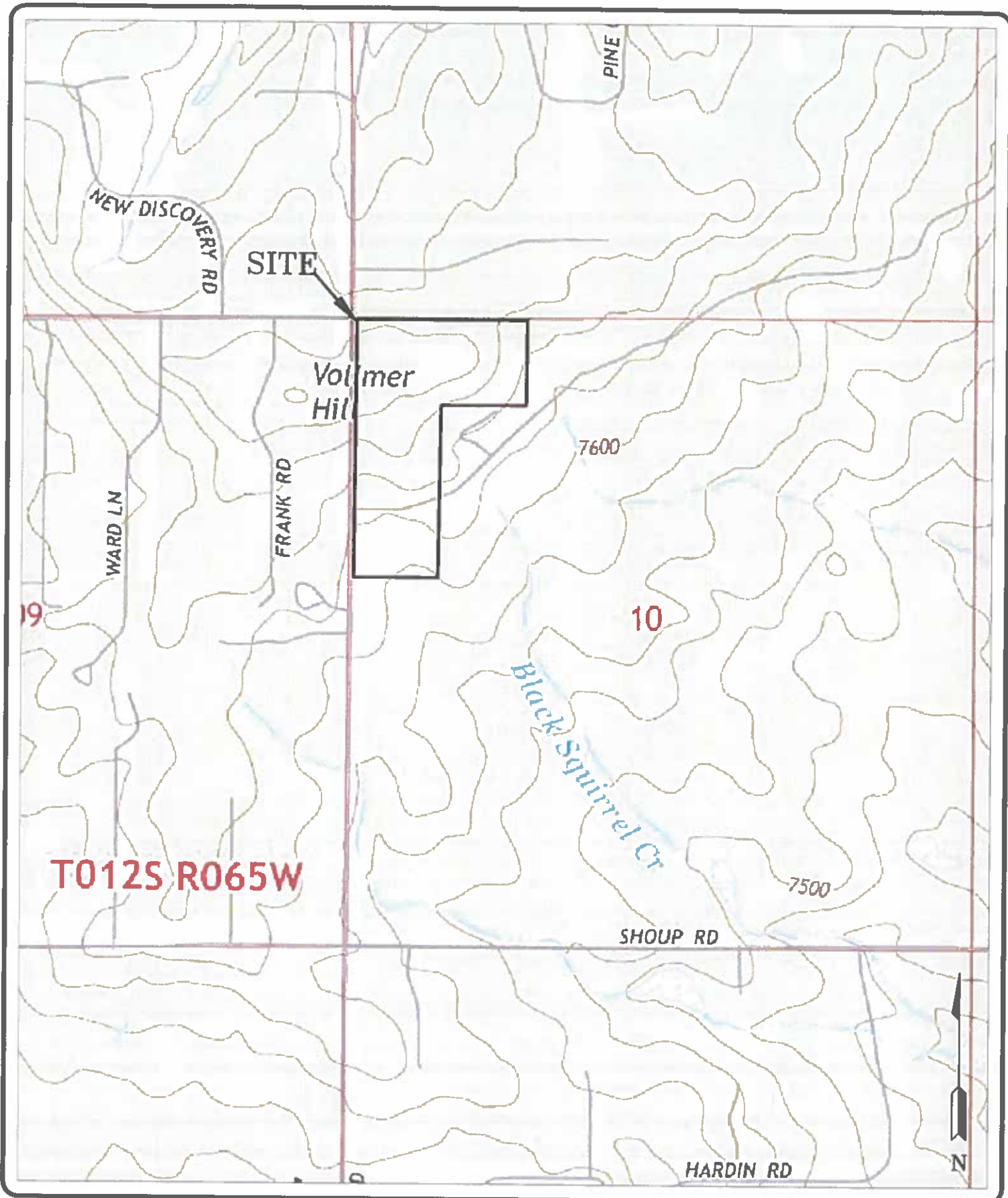
FIG NO.:
 1

DRAWN:
 LLL

DATE:
 3/4/20

CHECKED:

DATE:

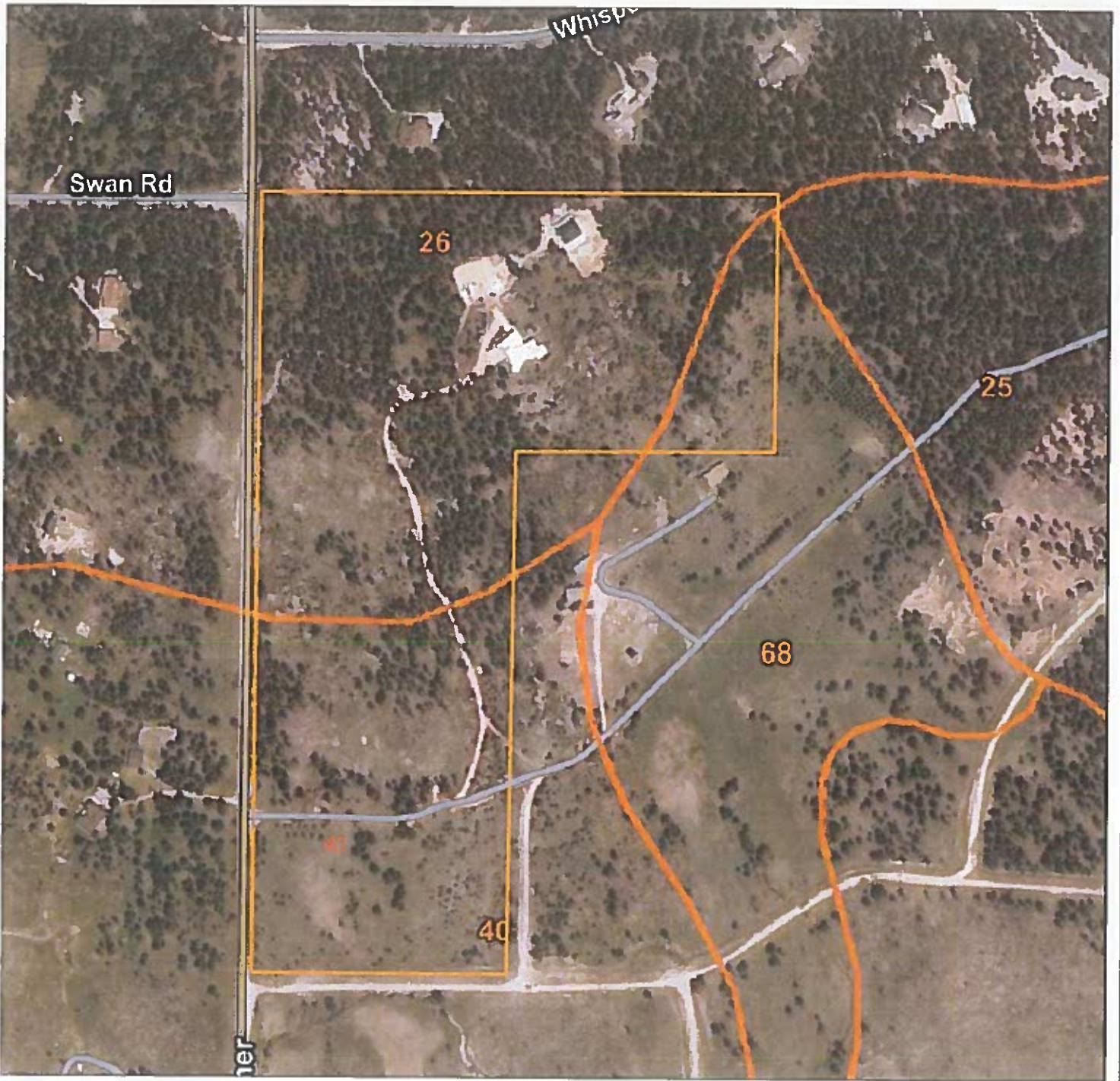


USGS MAP
AZTEC RESIDENTIAL SUBDIVISION
13235 VOLLMER ROAD
EL PASO COUNTY, CO.
FOR: SMH CONSULTANTS

JOB NO.:
200160

DRAWN: LLL	DATE: 3/4/20	CHECKED:	DATE:
---------------	-----------------	----------	-------

FIG NO.:
2



ENTECH
ENGINEERING, INC.
 505 ELKTON DRIVE
 COLORADO SPRINGS, CO. 80907 (719) 531-5299

SOIL SURVEY MAP
AZTEC RESIDENTIAL SUBDIVISION
 13235 VOLLMER ROAD
 EL PASO COUNTY, CO.
 SMH CONSULTANTS

JOB NO.:
200160

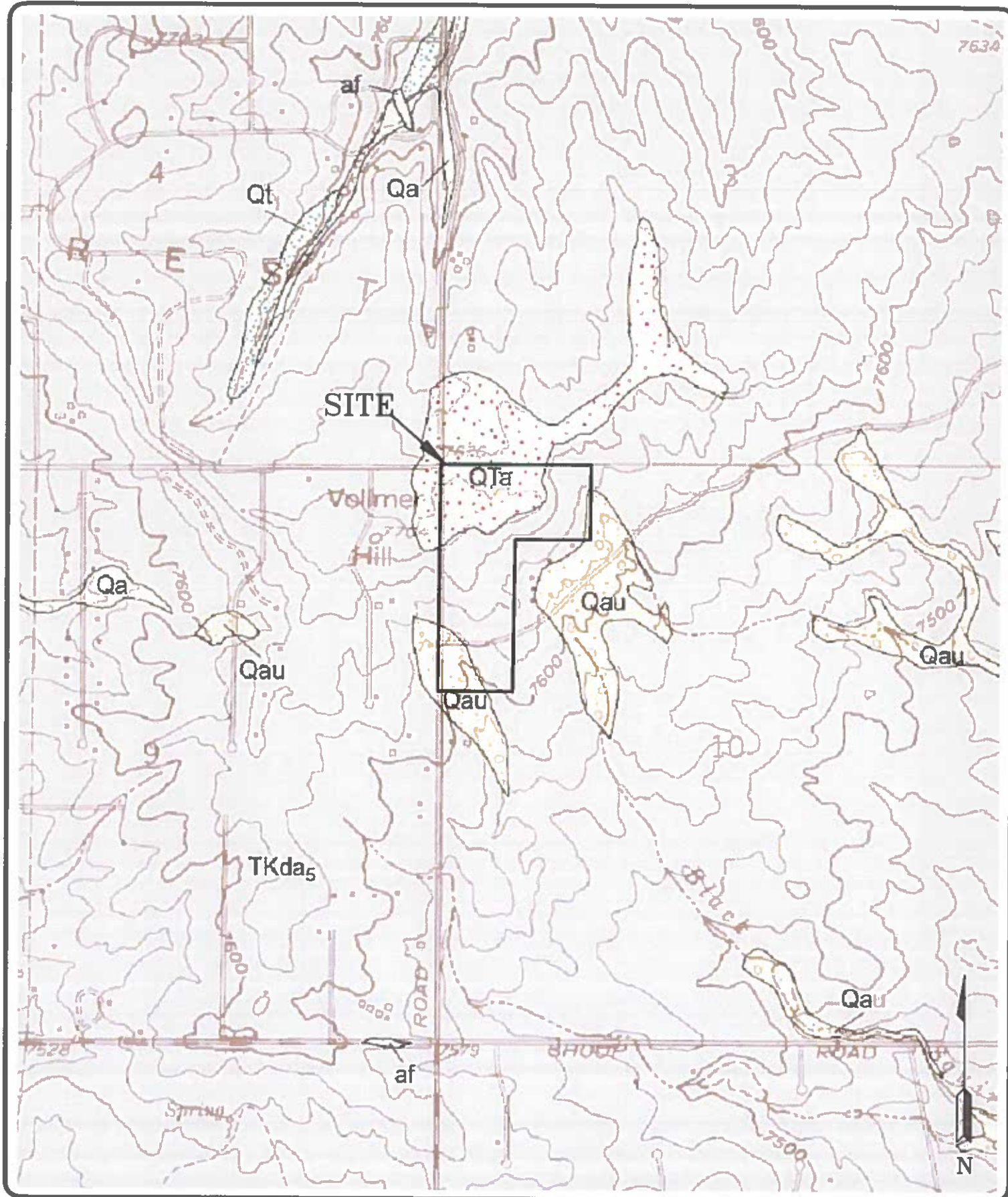
FIG NO.:
4

DRAWN:
LLL

DATE:
3/4/20

CHECKED:

DATE:



ENTECH
ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, CO. 80907 (719) 531-5299

BLACK FOREST QUADRANGLE GEOLOGIC MAP
AZTEC RESIDENTIAL SUBDIVISION
13235 VOLLMER ROAD
EL PASO COUNTY, CO.
SMH CONSULTANTS

DRAWN: LLL	DATE: 3/4/20	CHECKED:	DATE:
---------------	-----------------	----------	-------

JOB NO.:
200160

FIG NO.:
5



Legend:

- Qau - Alluvium Undivided of Holocene and Pleistocene Age:
sheetwash and stream deposited alluvium associated with alluvial-filled valley heads
- QTa - Alluvium of Palmer Divide of Early Pleistocene or Pliocene Age:
stream terrace deposits located along the Palmer Divide
- Qc/TKd - Colluvium of Quaternary Age overlying Dawson Formation of Tertiary to Cretaceous Age:
colluvial and residual soils overlying arkosic sandstone with interbedded fine-grained sandstone, siltstone and claystone
- psw - potentially shallow groundwater area



ENTECH
ENGINEERING, INC.
 585 ELKTON DRIVE
 COLORADO SPRINGS, CO. 80907 (719) 531-5799

ENGINEERING GEOLOGY MAP
AZTEC RESIDENTIAL SUBDIVISION
 13235 VOLLMER ROAD
 EL PASO COUNTY, CO.
 SMH CONSULTANTS

JOB NO.:
200160

FIG NO.:
6

DRAWN:
LLL

DATE:
3/4/20

CHECKED:

DATE:



ENTECH
ENGINEERING, INC.
525 ELKTON DRIVE
COLORADO SPRINGS, CO. 80907 (719) 531-5299

FEMA FLOODPLAIN MAP
AZTEC RESIDENTIAL SUBDIVISION
13235 VOLLMER ROAD
EL PASO COUNTY, CO.
SMH CONSULTANTS

DRAWN:
LLL

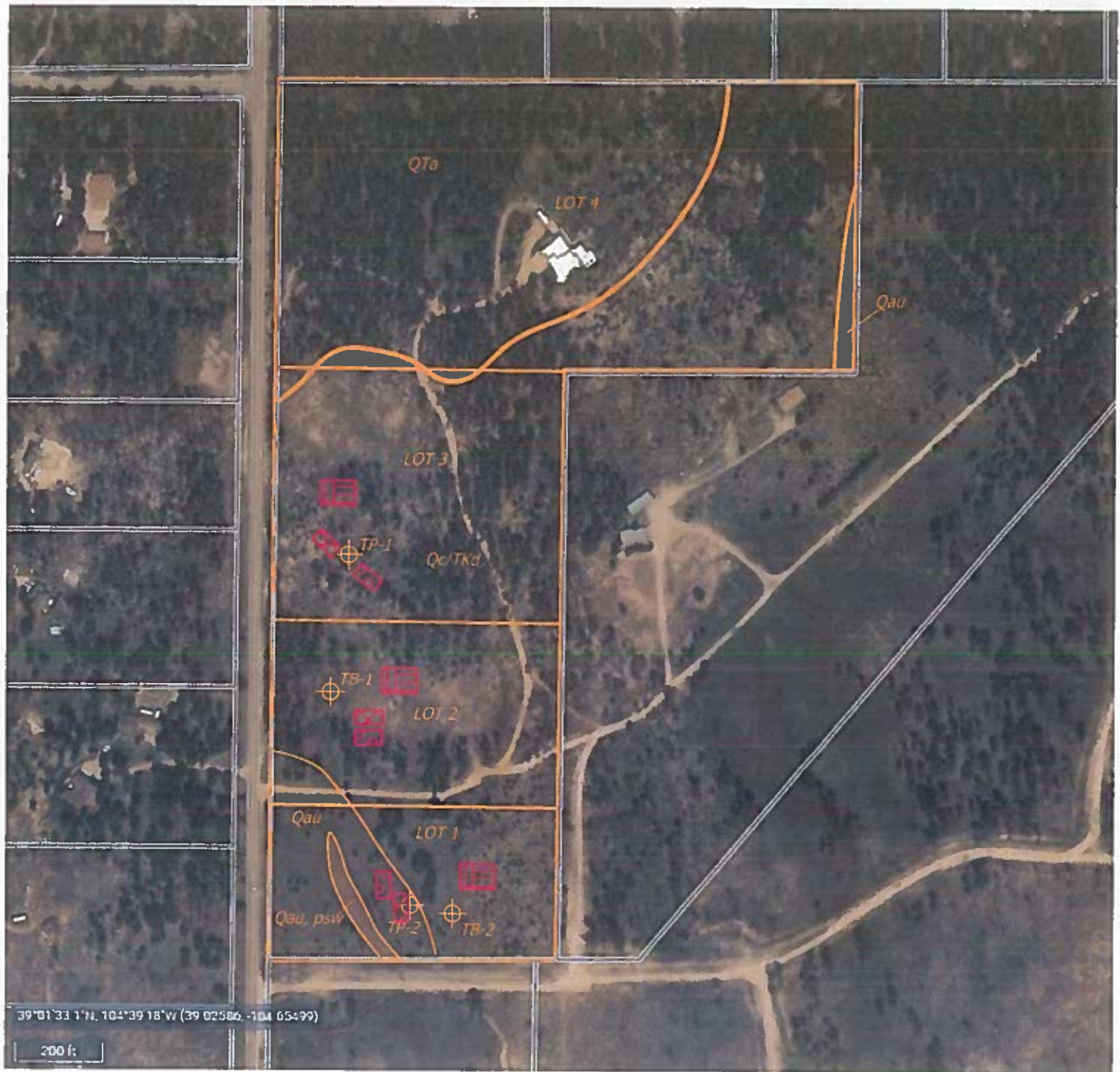
DATE:
3/4/20

CHECKED:





DATE:

JOB NO.:
200160

FIG NO.:
7



LEGEND:

-  - POSSIBLE OWTS LOCATIONS
-  - POSSIBLE OWTS ALTERNATE LOCATIONS
-  - POSSIBLE HOUSE LOCATIONS
-  - AREAS WHERE OWTS ARE NOT RECOMMENDED

W * - WATER WELLS MUST BE A MINIMUM OF 100 FT FROM OWTS ABSORPTION FIELDS



ENTECH
ENGINEERING, INC.
 505 ELKTON DRIVE
 COLORADO SPRINGS, CO. 80907 (719) 531-3299

SEPTIC SUITABILITY MAP
AZTEC RESIDENTIAL SUBDIVISION
 13235 VOLLMER ROAD
 EL PASO COUNTY, CO.
 SMH CONSULTANTS

JOB NO.:
200160

FIG NO.:
8

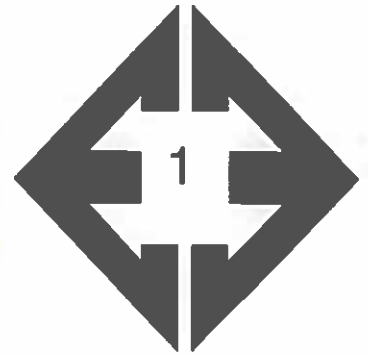
DRAWN:
LLL

DATE:
3/4/20

CHECKED:

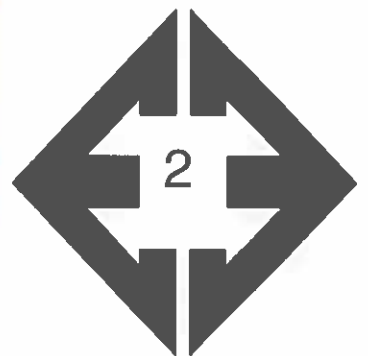
DATE:

APPENDIX A: Photographs



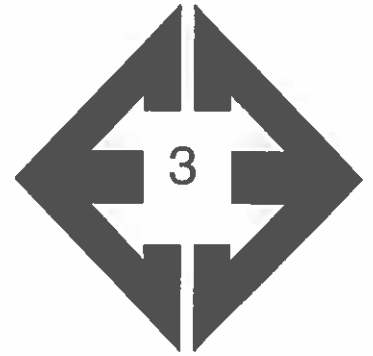
**Looking north towards
Lot 1 in the eastern
portion of the site.**

January 24, 2020



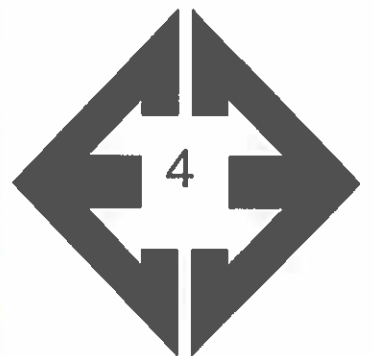
**Looking east from the
central portion of the
site.**

January 24, 2020



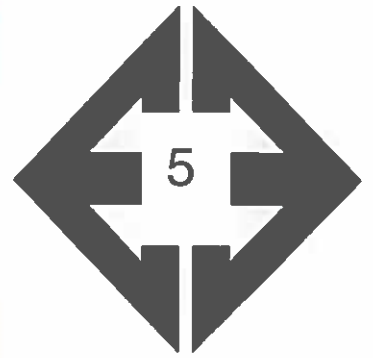
Looking south from
the central portion of
the site.

January 24, 2020



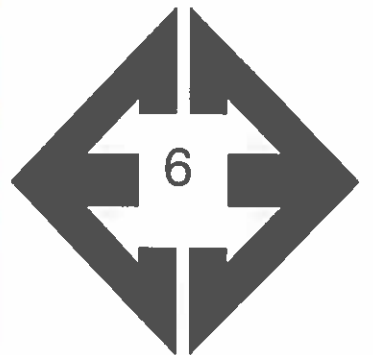
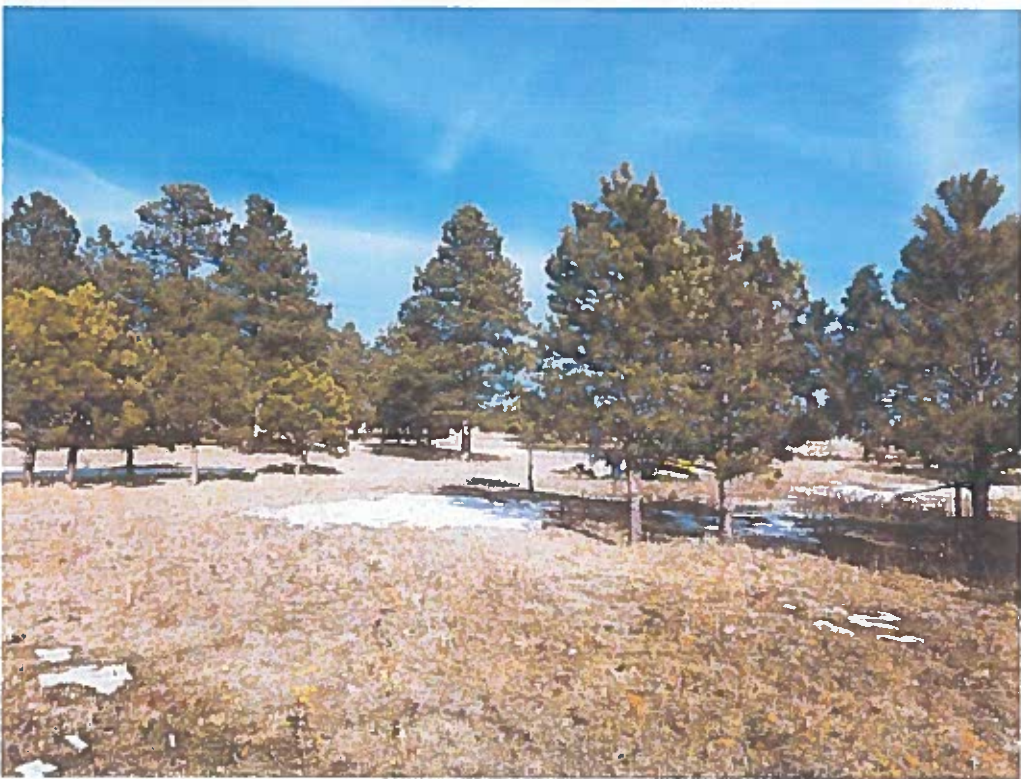
Looking north from the
southern portion of the
site.

January 24, 2020



Looking south along head of minor drainage in the southern portion of the site.

January 24, 2020



Looking east from the southern portion of site.

January 24, 2020

APPENDIX B: Test Boring and Test Pit Logs

TEST BORING NO. 1
 DATE DRILLED 2/4/2020
 Job # 200160

TEST BORING NO. 2
 DATE DRILLED 2/4/2020
 CLIENT SMH CONSULTANTS
 LOCATION 13235 VOLLMER ROAD

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 20', 2/4/20 SAND, SILTY, FINE TO COARSE GRAINED, TAN, LOOSE TO MEDIUM DENSE, MOIST	5			9	5.6	1	DRY TO 20', 2/4/20 SAND, SILTY, FINE TO COARSE GRAINED, TAN, LOOSE TO DENSE, MOIST	5			6	5.3	1
	5			13	6.0	1		5			30	8.3	1
SANDSTONE, CLAYEY, FINE TO COARSE GRAINED, VERY DENSE, MOIST	10			50	9.7	2	SANDSTONE, SILTY, FINE TO COARSE GRAINED, BROWN, VERY DENSE, MOIST	10			50	6.1	2
				5"							5"		
	15			50	11.1	2		15			50	6.1	2
				6"							4"		
	20			50	10.2	2		20			50	6.5	2
				6"							6"		



ENTECH
ENGINEERING, INC.

505 ELKTON DRIVE
 COLORADO SPRINGS COLORADO 80907

TEST BORING LOG

DRAWN

DATE

CHECKED: *W*

DATE 2/13/20

JOB NO.:
 200160

FIG NO.:
 B-1

LOT NO. 3
 TEST PIT NO. 1
 DATE EXCAVATED 1/24/2020
 Job # 200160

LOT NO. 1
 TEST PIT NO. 2
 DATE EXCAVATED 1/24/2020
 CLIENT SMH CONSULTANTS
 LOCATION 13235 VOLLMER RD

REMARKS

REMARKS

REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	USDA Soil Type	REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	USDA Soil Type
topsoil sandy loam, brown weathered to formational silty sandstone, fine to coarse grained, tan	1			ma		3A	topsoil sandy loam, brown sand clay loam, fine to coarse grained, light brown	1			ma		3A
	2							2					
	3							3					
weathered to formational clayey sandstone, fine to coarse grained, tan	4			ma		4A		4					
	5						sandy loam, fine to coarse grained, tan	5			gr	w	2A
	6							6					
	7							7					
	8							8					
	9							9					
	10							10					

Soil Structure Shape

- granular - gr
- platy - pl
- blocky - bl
- prismatic - pr
- single grain - sg
- massive - ma

Soil Structure Grade

- weak - w
- moderate - m
- strong - s
- loose - l



ENTECH
 ENGINEERING, INC.

505 ELKTON DRIVE
 COLORADO SPRINGS, COLORADO 80907

TEST PIT LOG

DRAWN

DATE

CHECKED

DATE

ELL

2/16/25

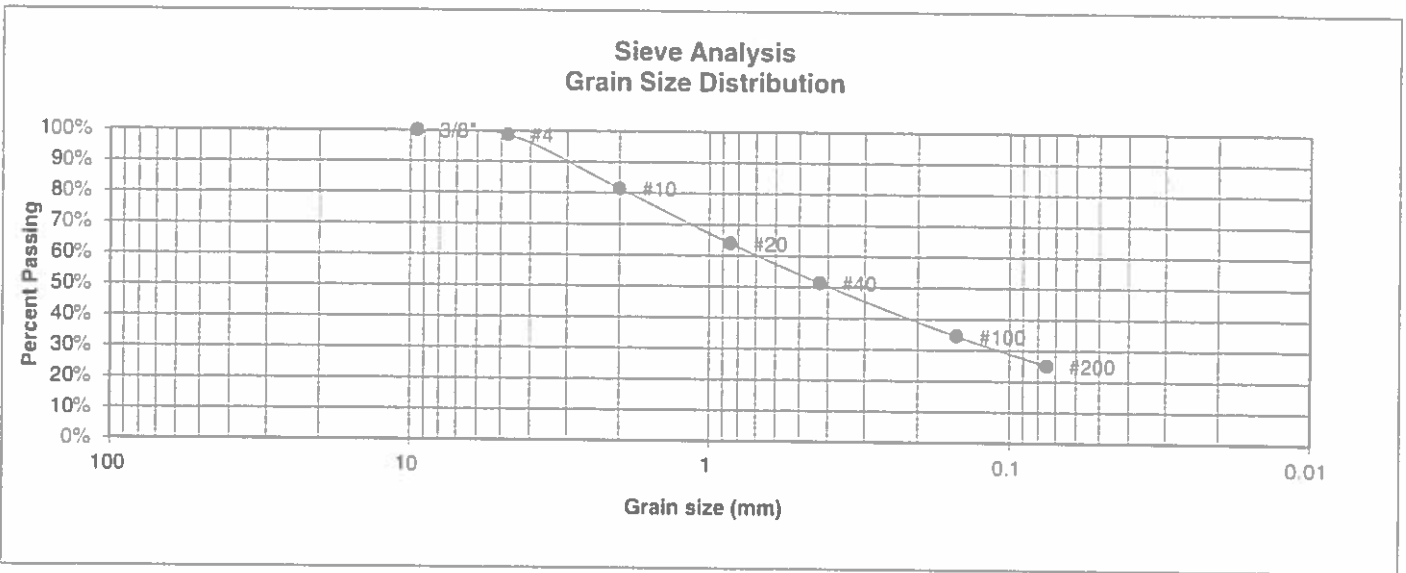
JOB NO:
 200160

FIG NO:
 B-2

APPENDIX C: Laboratory Test Results

UNIFIED CLASSIFICATION SM
 SOIL TYPE # 1
 TEST BORING # 1
 DEPTH (FT) 2-3

CLIENT SMH CONSULTANTS
 PROJECT 13235 VOLLMER ROAD
 JOB NO. 200160
 TEST BY BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	98.6%
10	81.4%
20	64.0%
40	51.3%
100	34.5%
200	25.1%

Atterberg Limits
 Plastic Limit
 Liquid Limit
 Plastic Index

Swell
 Moisture at start
 Moisture at finish
 Moisture increase
 Initial dry density (pcf)
 Swell (psf)



**ENTECH
ENGINEERING, INC.**
 505 ELKTON DRIVE
 COLORADO SPRINGS, COLORADO 80907

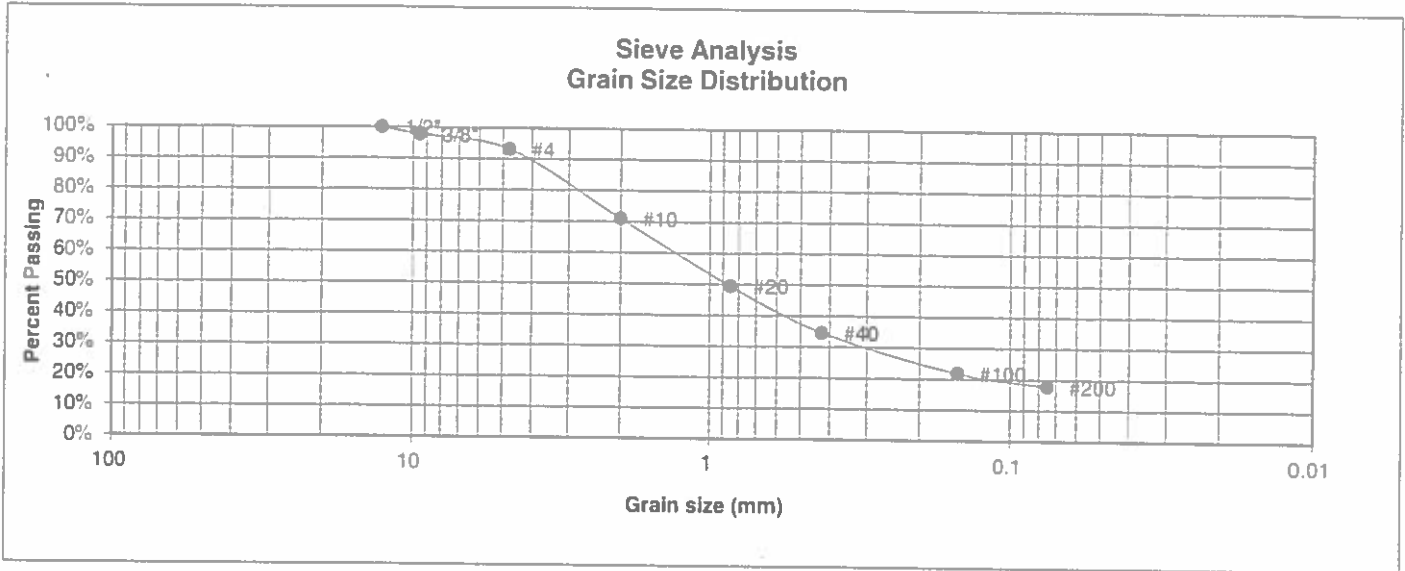
**LABORATORY TEST
RESULTS**

DRAWN	DATE	CHECKED	DATE
		<i>W</i>	2/10/20

JOB NO.:
200160

FIG NO.
C-1

UNIFIED CLASSIFICATION	SM	CLIENT	SMH CONSULTANTS
SOIL TYPE #	1	PROJECT	13235 VOLLMER ROAD
TEST BORING #	2	JOB NO.	200160
DEPTH (FT)	5	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	97.7%
4	93.1%
10	70.9%
20	49.5%
40	34.6%
100	21.9%
200	17.8%

Atterberg Limits	
Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

Swell	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	

ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

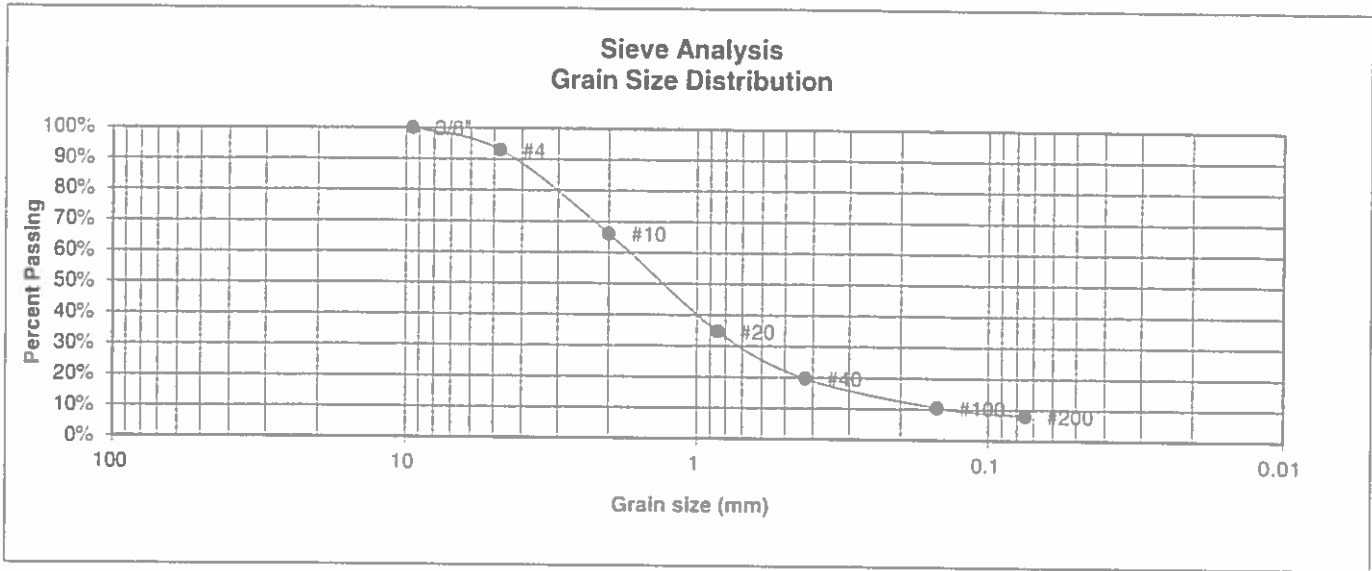
LABORATORY TEST RESULTS

DRAWN	DATE	CHECKED	DATE
		h	2/10/20

JOB NO.:
200160

FIG NO.:
C-2

BORING NO.	TP-2	UNIFIED CLASSIFICATION	SM-SW	TEST BY	BL
DEPTH(ft)	5-6	AASHTO CLASSIFICATION		JOB NO.	200160
CLIENT	SMH CONSULTANTS				
PROJECT	13235 VOLLMER ROAD				



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	93.0%
10	66.1%
20	34.7%
40	19.7%
100	10.5%
200	8.0%

Atterberg Limits
 Plastic Limit
 Liquid Limit
 Plastic Index

Swell
 Moisture at start
 Moisture at finish
 Moisture increase
 Initial dry density (pcf)
 Swell (psf)



ENTECH ENGINEERING, INC.
 505 ELKTON DRIVE
 COLORADO SPRINGS, COLORADO 80907

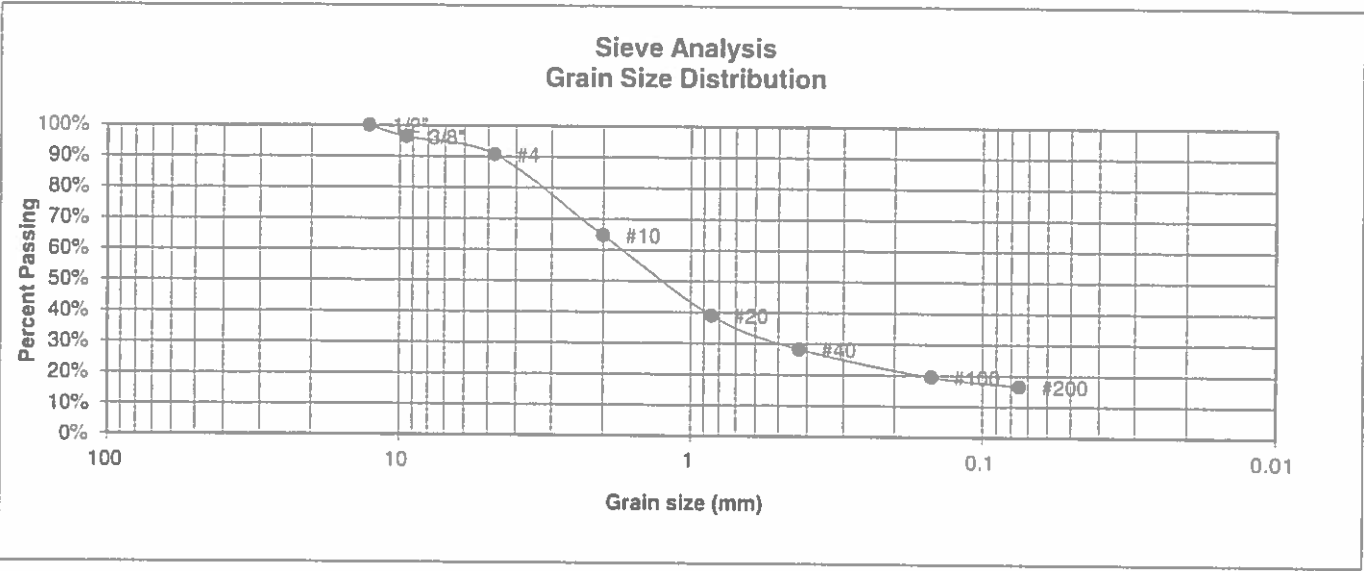
LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		LL	2/16/00

JOB NO.:
200160

 FIG NO:
C-3

BORING NO.	TP-1	UNIFIED CLASSIFICATION	SC	TEST BY	BL
DEPTH(ft)	6-7	AASHTO CLASSIFICATION		JOB NO.	200160
CLIENT	SMH CONSULTANTS				
PROJECT	13235 VOLLMER ROAD				



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	96.3%
4	90.7%
10	64.7%
20	39.0%
40	28.2%
100	19.5%
200	16.5%

Atterberg Limits	
Plastic Limit	
Liquid Limit	
Plastic Index	
Swell	
Moisture at start	12.3%
Moisture at finish	20.5%
Moisture increase	8.2%
Initial dry density (pcf)	99
Swell (psf)	360



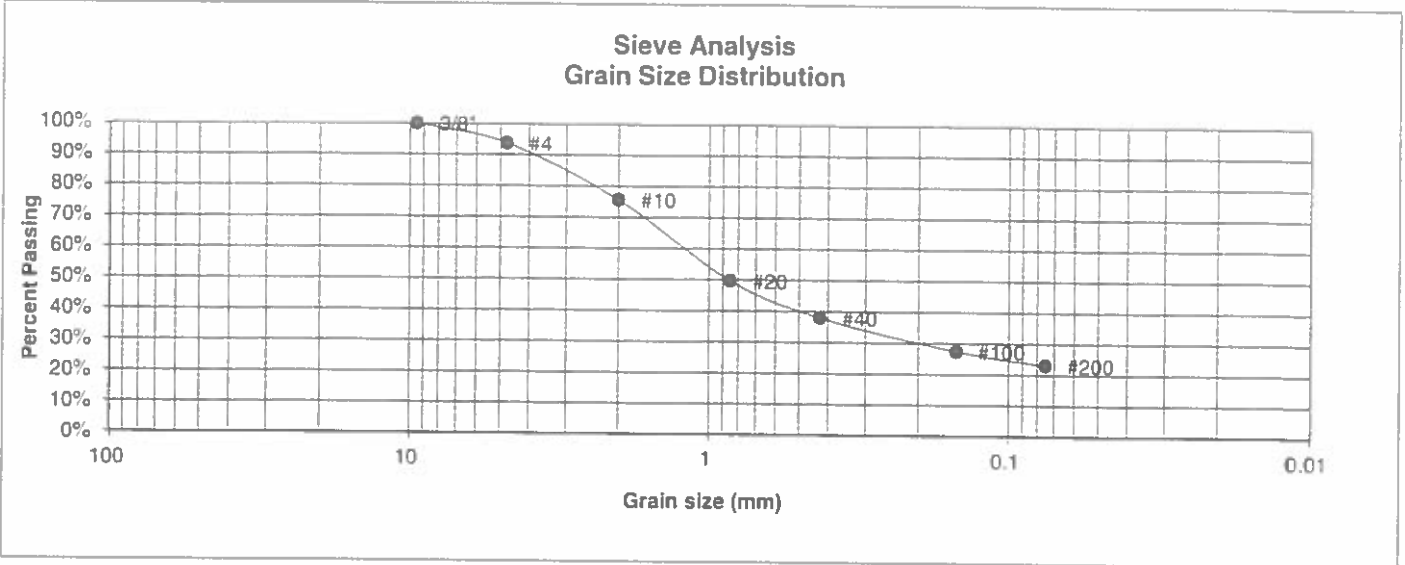
ENTECH ENGINEERING, INC.
 505 ELKTON DRIVE
 COLORADO SPRINGS, COLORADO 80907

LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		LLL	7/12/20

JOB NO.
200160
FIG NO.
C-4

UNIFIED CLASSIFICATION	SC	CLIENT	SMH CONSULTANTS
SOIL TYPE #	2	PROJECT	13235 VOLLMER ROAD
TEST BORING #	1	JOB NO.	200160
DEPTH (FT)	15	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	93.7%
10	75.6%
20	49.6%
40	37.9%
100	27.4%
200	23.0%

Atterberg Limits	
Plastic Limit	21
Liquid Limit	41
Plastic Index	20

Swell	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	



ENTECH
ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

LABORATORY TEST RESULTS

DRAWN	DATE	CHECKED: <i>h</i>	DATE: <i>2/10/20</i>
-------	------	-------------------	----------------------

JOB NO
200160

FIG NO
C-5

APPENDIX D: Soil Survey Descriptions

El Paso County Area, Colorado

26—Elbeth sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 367y

Elevation: 7,300 to 7,600 feet

Farmland classification: Not prime farmland

Map Unit Composition

Elbeth and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elbeth

Setting

Landform: Hills

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from arkose

Typical profile

A - 0 to 3 inches: sandy loam

E - 3 to 23 inches: loamy sand

Bt - 23 to 68 inches: sandy clay loam

C - 68 to 74 inches: sandy clay loam

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat):

Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

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 17, Sep 13, 2019

El Paso County Area, Colorado

40—Kettle gravelly loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 368g

Elevation: 7,000 to 7,700 feet

Farmland classification: Not prime farmland

Map Unit Composition

Kettle and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kettle

Setting

Landform: Hills

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Sandy alluvium derived from arkose

Typical profile

E - 0 to 16 inches: gravelly loamy sand

Bt - 16 to 40 inches: gravelly sandy loam

C - 40 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 3 to 8 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
(2.00 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 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Hydric soil rating: No

Minor Components

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 17, Sep 13, 2019

El Paso County Area, Colorado

68—Peyton-Pring complex, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 369f

Elevation: 6,800 to 7,600 feet

Farmland classification: Not prime farmland

Map Unit Composition

Peyton and similar soils: 40 percent

Pring and similar soils: 30 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peyton

Setting

Landform: Hills

Landform position (three-dimensional): Side slope

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 12 inches: sandy loam

Bt - 12 to 25 inches: sandy clay loam

BC - 25 to 35 inches: sandy loam

C - 35 to 60 inches: sandy loam

Properties and qualities

Slope: 3 to 5 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):

Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: B

Ecological site: Sandy Divide (R049BY216CO)

Hydric soil rating: No

Description of Pring

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Arkosic alluvium derived from sedimentary rock

Typical profile

A - 0 to 14 inches: coarse sandy loam
C - 14 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 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
(2.00 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 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: Loamy Park (R048AY222CO)
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 17, Sep 13, 2019

APPENDIX E: El Paso County Health Department Septic Records

APPROVED: YES NO # 5200000303 ENVIRONMENTALIST J. Christensen

Address 13235 Voller Rd 80908 Owner Peter Spalin

Legal Description NW 1/4 of section 10, R45W of the 6th PM
Residence , # of bedrooms 3; Commercial ; System Installer Slim Loop

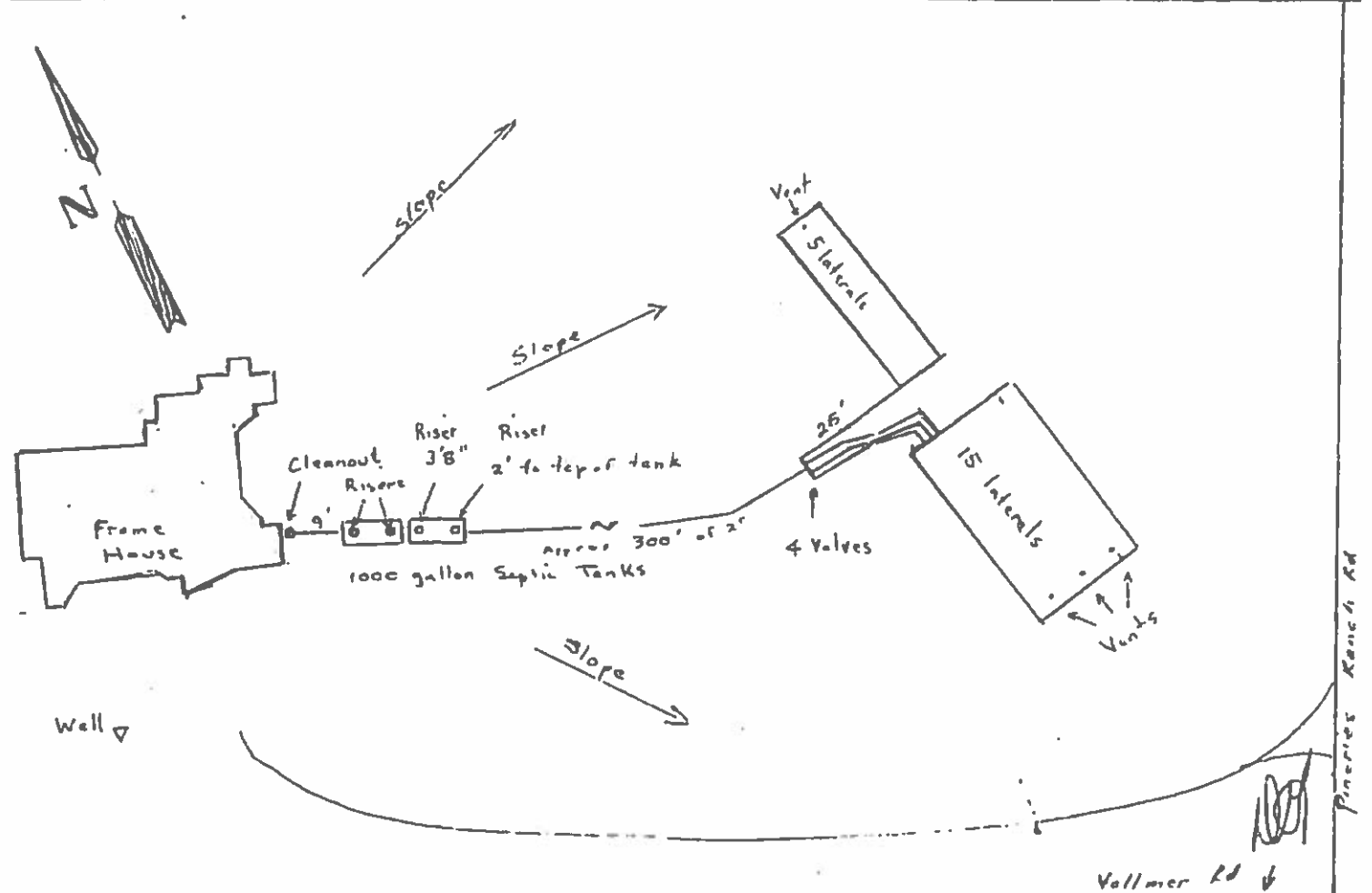
SEPTIC TANK:
Commercial ; Noncommercial ; L , W , WD
Construction Material Concrete, capacity 2 x 1000 gallons.

DISPOSAL FIELD:
Rock Systems:
Trench: depth , width , total length , sq. feet
Bed: depth , length , width , sq. feet
Rock type , depth , under PVC , over PVC
Seepage Pits: # of pits , total # of rings , working depth(s)
size of pit(s) L X W , lining material , total sq. feet

Rockless Systems: Low-Pressure Dosing System
Chamber: Type , number of chambers , bed , trench
sq. ft./section , reduction allowed %, sq. ft. required
total sq. ft. installed 4000, depth of installation 2'

Engineer Design or N, Designing Engineer Paul Bryant
Approval letter provided? or N 15 Jun 2000
Well 50 feet from tank or N 100 feet from leach field or N
Well installed at time of septic system inspection or N Public Water
*Approval will be revoked if in the future the well is found to be within 50 feet of the septic tank and/or 100 feet of the disposal field.

NOTES: Pump + Alarm to be installed in 2nd Chamber of 2nd septic tank.
Field zones were covered-backfilled plus snow covered at time of inspection with exception of ends. 2" sch 40 line from septic tank outlet to valves. 1 1/2" laterals.



EL PASO COUNTY
DEPARTMENT OF HEALTH AND ENVIRONMENT
301 S Union Blvd, Colorado Springs, Colorado 719-578-3126



INDIVIDUAL SEWAGE DISPOSAL SYSTEM PERMIT

WATER SOURCE: WELL

PERMIT NUMBER: ON0000760

OWNER NAME: PETER SPAHN

DATE PERMITTED: 7/13/99

ADDRESS: 13251 VOLLMER RD

CITY, STATE, ZIP: COLORADO SPRINGS 80908

PHONE NUMBER: 7194952203

INSTALLED BY: LOOP, SLIM

This permit is issued in accordance with 25-10-107 Colorado Revised Statutes. PERMIT EXPIRES upon completion-installation of sewage-disposal system or at the end of twelve (12) months from date of issue- whichever occurs first-(unless work is in progress). This permit is revokable if all stated requirements are not met.

Sewage disposal system to be installed by an El Paso County Licensed System Contractor or the property owner.

THIS PERMIT DOES NOT DENOTE APPROVAL OF ZONING AND ACREAGE REQUIREMENTS.

PERMIT FEE (NON REFUNDABLE):

~~New Permit - \$ 300.00~~

ISDS Repair - \$ 50.00

Voided/Altered permit - \$ 25.00

DIRECTOR, EL PASO COUNTY DEPARTMENT OF HEALTH AND ENVIRONMENT

Janet Christman 578-3141

ENVIRONMENTALIST / PHONE NUMBER

PERMIT EXPIRATION DATE:

Expires twelve months from date of issue

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

MINIMUM SEPTIC TANK SIZE: P. E. DESIGN GALLONS

MINIMUM ABSORPTION AREA REQUIRED P. E. DESIGN SQ FT

PLANNING DEPARTMENT

ENUMERATION

FLOOD PLAIN

WASTEWATER

COMMENTS:

THIS SYSTEM MUST BE DESIGNED BY A COLORADO REGISTERED PROFESSIONAL ENGINEER DUE TO BEDROCK AT 3 FEET BELOW NATIVE GROUND SURFACE. THE SYSTEM MUST BE INSPECTED BY THE HEALTH DEPARTMENT PRIOR TO BACKFILL AND A LETTER OF APPROVAL BY THE ENGINEER MUST BE FURNISHED THIS OFFICE FOR FINAL APPROVAL OF SYSTEM.

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 time for the purpose of making such inspections as are necessary to determine compliance with requirements of this law.

13251 Vollmer Rd #5200000366 E. 12-15-99

Inspector

Janet

Record I.D.: 760

EL PASO COUNTY ENVIRONMENTAL HEALTH SERVICES

301 South Union Boulevard • Colorado Springs, CO • 80910-3123 • (719) 578-3126



APPLICATION FOR A NEW REMODEL REPAIR OR ADDITION TO AN INDIVIDUAL SEWAGE DISPOSAL SYSTEM

Owner PETER R & KATHERINE F SPAHN Daytime Phone (719) 495-2203

Address of Property 13251 VOLLMER RD. City & Zip COLORADO SPRINGS, CO

Legal Description NW 1/4 OF THE NW 1/4 OF SECTION 10, T12S R65W OF THE 6TH PM. 80908

Master EL PASO COUNTY, CO Tax Schedule # 52000-00-119 Lot Size 40 ACRES Septic Contractor GAS EXCAVATION SIM LOOP

Inside City Limits No Yes-City Water Supply Well or Spring Cistern Public

Type of Building Frame Mobile Modular Other

Owner's MAILING Address 13251 VOLLMER RD. City, State & Zip COLORADO SPRINGS, CO 80908

MAIL PERMIT OR PICK UP PERMIT

MAXIMUM POTENTIAL BEDROOMS 3 PRS

Basement Y (N) Percolation Test Attached Y (N) Garbage Disposal Y (N) Clothes Washer Y (N)

I have supplied a plot plan as described on the back of this form. I acknowledge 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 an applicant for purposes of evaluating 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 pursuant to C.R.S. 25-10-107 et. seq. I hereby certify all 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 Department of Health and Environment in evaluating the same for purposes of issuing the permit applied for herein. I further understand 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.

OWNER'S SIGNATURE Peter R. Spahn Katherine F. Spahn Date 7/7/99

DEPARTMENT OF HEALTH USE ONLY

P.E. design Minimum Absorption Area P.E. design Minimum Tank Capacity Date of Site Inspection 07/08/99

REMARKS Perc test performed 12/98.

This system must be designed by a Colorado registered professional engineer due to bedrock at 3 ft. below native ground surface. The system must be inspected by the Health Dept. prior to backfill and a letter of approval by the engineer must be furnished this office for final approval of system.

EHS INSPECTOR Janet Christensen DATE 07/09/99 APPROVED DENIED PERMIT # 0N0000760 FEE NO FEE DATE TO PLANNING DEPT 7/8/99 DATE TO WASTEWATER DISTRICT attached

1) We require a copy of your percolation (PERC) TEST with an original professional engineer's (PE) stamp and signature.



A PLOT PLAN must be drawn (not to scale) on a 8 1/2 x 11 sheet of paper. The plot plan must include

- | | | |
|------------------------|--|---|
| 1) a north bearing | 4) all buildings (proposed or existing) | 7) driveway (proposed or existing and name of adjoining street) |
| 2) property lines | 5) proposed septic system site | |
| 3) property dimensions | 6) designated alternate septic system site | |

3) Initial any of the following features that apply to your property and include them on your plot plan.

- | | | |
|----------------------------------|--|--|
| <input type="checkbox"/> Well(s) | <input type="checkbox"/> Adjacent property well(s) | <input type="checkbox"/> Subsoil drain |
| <input type="checkbox"/> Cistern | <input type="checkbox"/> Water line | |

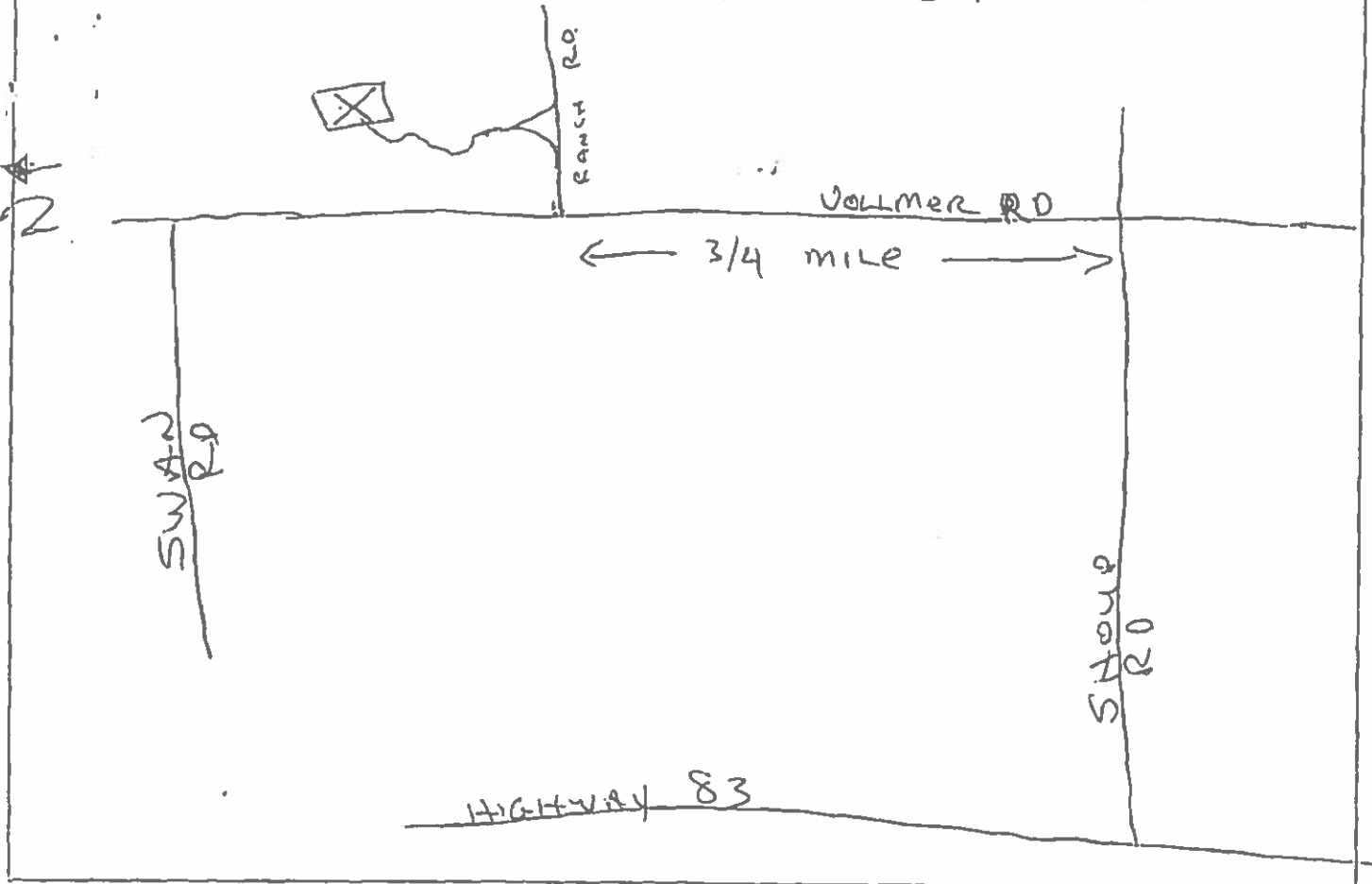
4) Initial any of the following that are within 100 feet of your proposed septic system and include on your plot plan.

- | | |
|--|---|
| <input type="checkbox"/> Spring(s) | <input type="checkbox"/> Lake(s) |
| <input type="checkbox"/> Pond(s) | <input type="checkbox"/> Stream(s) |
| <input type="checkbox"/> Dry Gulch(es) | <input type="checkbox"/> Natural drainage course(s) |

5) PROPERTY ADDRESS OR LOT NUMBER MUST BE POSTED AND CLEARLY VISIBLE FROM ROAD. PERC HOLES MUST BE CLEARLY MARKED.

6) GIVE COMPLETE DIRECTIONS TO THE PROPERTY FROM A MAIN HIGHWAY

13251 JOLLMER RD PINERIES RANCH



Appendix F

Analytical Results

TASK NO: 191212008

Report To: Doug Schwenke

Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Bill To: Doug Schwenke

Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Task No.: 191212008
Client PO:
Client Project: Abeyta

Date Received: 12/12/19
Date Reported: 1/6/20
Matrix: Water - Drinking

Lab Number	Customer Sample ID	Sample Date/Time	Test	Result	Method	Date Analyzed
191212008-01L	Abeyta	12/11/19 2:28 PM	Total Coliform	Absent	SM 9223	12/13/19
			E-Coli	Absent	SM 9223	12/13/19

Abbreviations/ References:

Absent = Coliform Not Detected
Present = Coliform Detected - Chlorination Recommended
Date Analyzed = Date Test Completed
SM = "Standard Methods for the Examination of Water and Wastewater"; APHA; 19th Edition; 1995



DATA APPROVED FOR RELEASE BY

Drinking Water Chain of Custody

1/2



LABORATORIES, INC.

Commerce City Lab
10411 Heinz Way
Commerce City CO 80640

Lakewood Service Center
12860 W. Cedar Dr. Suite 100A
Lakewood CO 80228

Phone: 303-659-2313

www.coloradolab.com

Report To Information		Bill To Information (If different from report to)		Project Information	
Company Name: <u>FRS-Hydro</u>	Company Name: _____	Company Name: _____	PWSID: <u>N/A</u>	System Name: _____	Compliance Samples: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Contact Name: <u>Dave Schwenke</u>	Contact Name: _____	Contact Name: _____	Send Results to CDPHE: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Task Number (Lab Use Only)	CAL Task No. <u>191212008</u>
Address: <u>5540 Tech Center Dr</u>	Address: _____	Address: _____	City: <u>CS</u>	State: <u>CO</u>	Zip: <u>80919</u>
City: <u>CS</u>	State: <u>CO</u>	Zip: <u>80919</u>	Phone: _____	Email: _____	PO Number: _____
Phone: <u>719-337-0572</u>	Sample Collector: <u>Stephanie Schwenke</u>	Sample Collector Phone: <u>719-331-5341</u>	PHASE I, II, V Drinking Water Analyses (check requested analysis)		
Email: <u>d.schwenke@frshydro.com</u>	ARR				

Date	Time	Client Sample ID / Sample Pt ID	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk/Lang. Index (Circle)	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	Cyanide	Gross Alpha/Beta	Radium 226/228	Radon	Uranium	Page 2 of 5
12/11	8:33am	#1	3																											
12/11	2:26pm	#2	1																											
12/11	2:28pm	#3	2																											
12/11	2:30pm	#4	1																											
	2:31pm	#5	1																											
	2:33pm	#6	2																											
	2:37pm	#7	1																											
	2:40pm	#8	1																											
	2:43pm	#9	1																											
	2:49pm	#10	2																											

Instructions: Please see enclosed doc. for call analysis's desired. No bottle verification for Orbit Field temp: 11.7°C

C/S Info: Delivered Via: FedEx Seals Present Yes No Headspace Yes No

Relinquished By: <u>[Signature]</u>	Date/Time: <u>12/11 3:35pm</u>	Received By: <u>[Signature]</u>	Date/Time: <u>12/12/19</u>	Relinquished Via: <u>FedEx</u>	C/S Charge: <input checked="" type="checkbox"/>	Temp. °C/Ice: <u>4</u>	Received By: <u>[Signature]</u>	Sample Pres. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Date/Time: _____
-------------------------------------	--------------------------------	---------------------------------	----------------------------	--------------------------------	---	------------------------	---------------------------------	--	------------------

Drinking Water Chain of Custody

2/2



LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information		Bill To Information (if different from report to)		State Form / Project Information	
Company Name: <u>DSS-Hydro</u>	Company Name: _____	PWSID: <u>N/A</u>	Address: <u>13935-Vermont</u>	City: <u>CO</u>	State/Zip: <u>CO 80228</u>
Contact Name: <u>Dave Schweserke</u>	Contact Name: _____	System Name: _____	City: <u>CO</u>	State: <u>CO</u>	Zip: <u>80228</u>
Address: <u>5540 Tech Center Dr</u>	Address: _____	Address: _____	County: <u>El Paso</u>	City: <u>CO</u>	State/Zip: <u>CO 80228</u>
City: <u>CO</u>	City: _____	City: _____	County: _____	City: _____	State/Zip: _____
Phone: <u>719-277-1212</u>	Phone: _____	Phone: _____	County: _____	City: _____	State/Zip: _____
Fax: _____	Fax: _____	Fax: _____	County: _____	City: _____	State/Zip: _____
Email: <u>d.schweserke@hydro.com</u>	Email: _____	Compliance Samples: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	County: _____	City: _____	State/Zip: _____
Sampler Name: <u>Stephane Schweserke</u>	PO No.: _____	Send Forms to State: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	County: _____	City: _____	State/Zip: _____

Task Number 191212008		PHASE I, II, V Drinking Water Analyses (check analysis)										Subcontract Analyses			
CAL Task No. _____		No. of Containers										Gross Alpha/Beta			
ARF		Residual Chlorine (mg/L) P/A Samples Only										Radium 226			
Date		Total Coliform P/A										Radium 228			
Time		504.1 EDB/DBCP										Radon			
Client Sample ID / EP Code		505 Pests/PCBs										Uranium			
Date		515.4 Herbicides													
Time		524.2 VOCs													
Client Sample ID / EP Code		525.2 SOCs-Pest													
Date		531.1 Carbamates													
Time		547 Glyphosate													
Client Sample ID / EP Code		548.1 Endothall													
Date		549.2 Diquat													
Time		524.2 THMs													
Client Sample ID / EP Code		552.2 HAA5s													
Date		Lead/Copper													
Time		Nitrate													
Client Sample ID / EP Code		Nitrite													
Date		Fluoride													
Time		Inorganics													
Client Sample ID / EP Code		Alk./Lang. Index													
Date		TOC DOC (Circle)													
Time		SUVA, UV 254 (Circle)													
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															
Date															
Time															
Client Sample ID / EP Code															

New Groundwater Source Sampling Request

ARF

Field Measurements

pH
Turbidity
Conductivity

General Parameters

Total Organic Carbon
Sodium
Calcium
Magnesium
Potassium
Total Hardness – CaCO₃
Total Alkalinity
Bicarbonate Alkalinity
Strontium
Total Dissolved Solids (TDS)

Microbiological

Total Coliform
E.Coli

Radionuclides

Radium 226 and Radium 228
Gross alpha particle activity -
 Including Radium 226 but not radon &
 uranium
Beta particle and photon radioactivity

VOCs

Vinyl chloride
Benzene
Carbon tetrachloride
1,2-Dichloroethane
Trichloroethylene
1,1,1 Trichloroethane
1,1-Dichloroethylene
Cis-1,2 Dichloroethylene
1,2-Dichloropropane
Ethylbenzene
Monochlorobenzene
o-Dichlorobenzene
p-Dichlorobenzene
Styrene
Tetrachloroethylene
Toluene
Trans-1,2 Dichloroethylene
Xylenes (total)
Dichloromethane (methylene chloride)
1,2,4-Trichlorobenzene
1,1,2-Trichloroethane

Inorganics

Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Copper
Cyanide (as free Cyanide)
Fluoride
Iron
Lead
Manganese
Mercury
Nickel
Nitrate
Nitrite
Selenium
Thallium
Uranium

Secondary MCLs

Aluminum
Chloride
Silver
Sulfate
Zinc

Synthetic Organic Chemicals (SOC)

Alachlor
Aldibarb1
Aldicarb sulfoxide
Aldicarb sulfone
Altrazine
Carbofuran
Chlordane
Dibromochloropropane
2,4 D
Ethylene dibromide
Heptachlor
Heptachlor epoxide
Lindane
Methoxychlor
Polychlorinated biphenyls
Pentachlorophenol
Toxaphene
2,4,5-TP(Silvex)
Benzopyrene
Dalapon
Di(2-ethylhexyl) adipate
Di(2-ethylhexyl)phthalate
Dinoseb
Dioxin
Diquat
Endothall
Endrin
Glyphosate
Hexachlorobenzene
Hexachlorocyclopentadiene
Oxamyl (Vydate)
Picloram
Simazine

ARF



INVOICE #: 191212008	
Invoice Date:	Jan 6, 2020
Date Received:	Dec 12, 2019

Bill To
 JDS Hydro Consultants
 Doug Schwenke
 5540 Tech Center Dr.
 Suite 100
 Colorado Springs CO 80919

Original Results To
 JDS Hydro Consultants
 Doug Schwenke
 5540 Tech Center Dr.
 Suite 100
 Colorado Springs CO 80919

<u>Client Project Name:</u> Abeyta	<u>Task Number:</u> 191212008	<u>Customer PO:</u>
---------------------------------------	----------------------------------	---------------------

Quantity	Item	Description	Unit Price	Extension
1	Water - Drinking	524.2 VOCS (Non-Compliance)	\$145.00	\$145.00
1	Water - Drinking	547 Glyphosate (Sub)	\$155.00	\$155.00
1	Water - Drinking	Chloride	\$17.00	\$17.00
1	Water - Drinking	Cyanide - Free	\$38.00	\$38.00
1	Water - Drinking	Fluoride	\$18.00	\$18.00
1	Water - Drinking	Inorganics	\$155.00	\$155.00
1	Water - Drinking	Langelier Index	\$57.00	\$57.00
1	Water - Drinking	Nitrate Nitrogen	\$17.00	\$17.00
1	Water - Drinking	Nitrite Nitrogen	\$17.00	\$17.00
1	Water - Drinking	Sulfate	\$17.00	\$17.00
1	Water - Drinking	TOC	\$35.00	\$35.00
1	Water - Drinking	Total Coliform P/A	\$23.00	\$23.00
1	Water - Drinking	Total Hardness - Total	\$0.00	\$0.00
1	Water - Drinking	Total Metals By ICP-MS	\$127.00	\$127.00
1	Water - Drinking	Total Metals By OES	\$48.00	\$48.00
1	Shipping	Cooler Shipment - UPS	\$10.00	\$10.00
1	Shipping	Sample Shipment to Outside Lab	\$30.00	\$30.00
Thank You! We Appreciate Your Business.			Total:	\$909.00

Payment Terms: Net 30
Pay From This Invoice.

*Remit Payment To: Colorado Analytical Lab
 P.O. Box 507
 Brighton, CO 80601*

*****We accept Mastercard and VISA*****

Invoices and results are sent via email only. If you have questions please call 303-659-2313.
 Records associated with samples submitted will be retained for 5 years from the date received.

10411 Heinz Way / Commerce City, CO 80640 / 303-659-2313
 Mailing Address: P.O. Box 507 / Brighton, CO 80601-0507

Analytical Results

TASK NO: 191212008

Report To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Bill To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Task No.: 191212008
Client PO:
Client Project: Abeyta

Date Received: 12/12/19
Date Reported: 1/6/20
Matrix: Water - Drinking

Customer Sample ID Abeyta
Sample Date/Time: 12/11/19 2:28 PM
Lab Number: 191212008-01

Test	Result	Method	ML	Date Analyzed	Analyzed By
Bicarbonate	42.6 mg/L as CaCO3	SM 2320-B	0.1	12/16/19	ERL
Calcium as CaCO3	26.0 mg/L	EPA 200.7	0.1	12/16/19	MBN
Carbonate	< 0.1 mg/L as CaCO3	SM 2320-B	0.1	12/16/19	ERL
Hydroxide	< 0.1 mg/L as CaCO3	SM 2320-B	0.1	12/16/19	ERL
Langelier Index	-2.24 units	SM 2330-B		12/18/19	SAN
pH	6.42 units	SM 4500-H-B	0.01	12/12/19	MBN
Temperature	20 °C	SM 4500-H-B	1	12/12/19	MBN
Total Alkalinity	42.6 mg/L as CaCO3	SM 2320-B	0.1	12/16/19	ERL
Total Dissolved Solids	80 mg/L	SM 2540-C	5	12/17/19	ISG

Abbreviations/ References:

ML = Minimum Level = LRL = RL
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 mls = Most Probable Number Index/ 100 mls
Date Analyzed = Date Test Completed



DATA APPROVED FOR RELEASE BY

Drinking Water Chain of Custody

1/2



LABORATORIES, INC.

Commerce City Lab
10411 Heinz Way
Commerce City CO 80640

Lakewood Service Center
12860 W. Cedar Dr. Suite 100A
Lakewood CO 80228

Phone: 303-659-2313

www.coloradolab.com

Report To Information		Bill To Information (If different from report to)		Project Information	
Company Name: <u>FRS-Hydro</u>	Company Name: _____	Company Name: _____	PWSID: <u>N/A</u>	System Name: _____	Compliance Samples: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Contact Name: <u>Dave Schwenke</u>	Contact Name: _____	Contact Name: _____	Send Results to CDPHE: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Task Number (Lab Use Only)	CAL Task No. <u>191212008</u>
Address: <u>5540 Tech Center Dr</u>	Address: _____	Address: _____	City: <u>CS</u>	State: _____	Zip: _____
City: <u>CS</u>	State: <u>CO</u>	Zip: <u>80919</u>	Phone: _____	PO Number: _____	ARR
Phone: <u>719-337-0572</u>	Sample Collector: <u>Stephanie Schwenke</u>	Sample Collector Phone: <u>719-331-5341</u>	Email: _____	PHASE I, II, V Drinking Water Analyses (check requested analysis)	

Date	Time	Client Sample ID / Sample Pt ID	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk/Lang. Index (Circle)	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	Cyanide	Gross Alpha/Beta	Radium 226/228	Radon	Uranium	Page 2 of 5
12/11	8:33am	#1	3																											
12/11	2:26pm	#2	1																											
12/11	2:28pm	#3	2																											
12/11	2:30pm	#4	1																											
	2:31pm	#5	1																											
	2:33pm	#6	2																											
	2:37pm	#7	1																											
	2:40pm	#8	1																											
	2:43pm	#9	1																											
	2:49pm	#10	2																											

Instructions: Please see enclosed doc. for call analysis desired. No bottle verification. Field temp: 11.7°C. Field pH: 6.15

Reinquished By: [Signature] Date/Time: 12/11 3:35pm Received By: [Signature] Date/Time: 12/12/19 Delivered Via: FedEx Relinquished By: [Signature] Date/Time: [Signature] Temp. °C/Ice: 4 Sample Pres. Yes No Headspace Yes No

805

Drinking Water Chain of Custody

2/2



LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information		Bill To Information (if different from report to)		State Form / Project Information	
Company Name: <u>DSS-Hydro</u>	Company Name: _____	PWSID: <u>N/A</u>	Address: <u>13935-Vermont</u>	City: <u>CO</u>	State/Zip: <u>CO 80228</u>
Contact Name: <u>Dave Schweserke</u>	Contact Name: _____	System Name: _____	City: <u>CO</u>	State: <u>CO</u>	Zip: <u>80228</u>
Address: <u>5540 Tech Center Dr</u>	Address: _____	Address: _____	County: <u>El Paso</u>	City: <u>CO</u>	State/Zip: <u>CO 80228</u>
City: <u>CO</u>	City: _____	City: _____	County: _____	City: _____	State/Zip: _____
Phone: <u>719-277-1212</u>	Phone: _____	Phone: _____	County: _____	City: _____	State/Zip: _____
Fax: _____	Fax: _____	Fax: _____	County: _____	City: _____	State/Zip: _____
Email: <u>d.schweserke@hydro.com</u>	Email: _____	Compliance Samples: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	County: _____	City: _____	State/Zip: _____
Sampler Name: <u>Stephane Schweserke</u>	PO No.: _____	Send Forms to State: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	County: _____	City: _____	State/Zip: _____

Task Number: 191212008

PHASE I, II, V Drinking Water Analyses (check analysis)

Subcontract Analyses

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 THMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC DOC (Circle)	SUVA, UV 254 (Circle)	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium	
12/1	2:45pm	A11	2																											
	2:47pm	A13	2																											
	2:50pm	A14	2																											
	2:55pm	AK	2																											
	3:00pm	A11	2																											

Instructions: 29 + 2 blanks

Seals Present Yes No Headspace Yes No

Relinquished By: <u>[Signature]</u>	Date/Time: <u>12/11 3:30pm</u>	Received By: <u>[Signature]</u>	Date/Time: <u>12/12/19</u>	Delivered Via: <u>Fedex</u>	CS Change: <input checked="" type="checkbox"/>	Temp. <u>4</u> °C/Ice <u>Y</u>	Received By: <u>[Signature]</u>	Sample Pres. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Date/Time: <u>12/12/19</u>
-------------------------------------	--------------------------------	---------------------------------	----------------------------	-----------------------------	--	--------------------------------	---------------------------------	--	----------------------------

New Groundwater Source Sampling Request

ARF

Field Measurements

pH
Turbidity
Conductivity

General Parameters

Total Organic Carbon
Sodium
Calcium
Magnesium
Potassium
Total Hardness – CaCO₃
Total Alkalinity
Bicarbonate Alkalinity
Strontium
Total Dissolved Solids (TDS)

Microbiological

Total Coliform
E.Coli

Radionuclides

Radium 226 and Radium 228
Gross alpha particle activity -
 Including Radium 226 but not radon &
 uranium
Beta particle and photon radioactivity

VOCs

Vinyl chloride
Benzene
Carbon tetrachloride
1,2-Dichloroethane
Trichloroethylene
1,1,1 Trichloroethane
1,1-Dichloroethylene
Cis-1,2 Dichloroethylene
1,2-Dichloropropane
Ethylbenzene
Monochlorobenzene
o-Dichlorobenzene
p-Dichlorobenzene
Styrene
Tetrachloroethylene
Toluene
Trans-1,2 Dichloroethylene
Xylenes (total)
Dichloromethane (methylene chloride)
1,2,4-Trichlorobenzene
1,1,2-Trichloroethane

Inorganics

Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Copper
Cyanide (as free Cyanide)
Fluoride
Iron
Lead
Manganese
Mercury
Nickel
Nitrate
Nitrite
Selenium
Thallium
Uranium

Secondary MCLs

Aluminum
Chloride
Silver
Sulfate
Zinc

Synthetic Organic Chemicals (SOC)

Alachlor
Aldibarb1
Aldicarb sulfoxide
Aldicarb sulfone
Altrazine
Carbofuran
Chlordane
Dibromochloropropane
2,4 D
Ethylene dibromide
Heptachlor
Heptachlor epoxide
Lindane
Methoxychlor
Polychlorinated biphenyls
Pentachlorophenol
Toxaphene
2,4,5-TP(Silvex)
Benzopyrene
Dalapon
Di(2-ethylhexyl) adipate
Di(2-ethylhexyl)phthalate
Dinoseb
Dioxin
Diquat
Endothall
Endrin
Glyphosate
Hexachlorobenzene
Hexachlorocyclopentadiene
Oxamyl (Vydate)
Picloram
Simazine

ARF

Analytical Results

TASK NO: 191212008

Report To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Bill To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Task No.: 191212008	Date Received: 12/12/19
Client PO:	Date Reported: 1/6/20
Client Project: Abeyta	Matrix: Water - Drinking

Customer Sample ID Abeyta
Sample Date/Time: 12/11/19 2:28 PM
Lab Number: 191212008-01

Test	Result	Method	ML	Date Analyzed	Analyzed By	MCL
Glyphosate	< 6.0 ug/L	EPA 547	6.0 ug/L	12/23/19	Outside Lab	700

Abbreviations/ References:

ML = Minimum Level = LRL = RL
MCL = Maximum Contaminant Level per The EPA
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 mls = Most Probable Number Index/ 100 mls
Date Analyzed = Date Test Completed



DATA APPROVED FOR RELEASE BY

Drinking Water Chain of Custody

1/2



LABORATORIES, INC.

Commerce City Lab
10411 Heinz Way
Commerce City CO 80640

Lakewood Service Center
12860 W. Cedar Dr. Suite 100A
Lakewood CO 80228

Phone: 303-659-2313

www.coloradolab.com

Report To Information		Bill To Information (If different from report to)		Project Information	
Company Name: <u>FRS-Hydro</u>	Company Name: _____	Company Name: _____	PWSID: <u>N/A</u>	Compliance Samples: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Send Results to CDPHE: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Contact Name: <u>Dave Schweske</u>	Contact Name: _____	Contact Name: _____	System Name: _____	Task Number (Lab Use Only)	
Address: <u>5540 Tech Center Dr</u>	Address: _____	Address: _____	City: _____	State: _____	Zip: _____
City: <u>CS</u>	State: <u>CO</u>	Zip: <u>80919</u>	City: _____	State: _____	Zip: _____
Phone: <u>719-337-0572</u>	Phone: _____	Phone: _____	Email: _____	PO Number: _____	
Email: <u>d.schweske@frshydro.com</u>	Sample Collector: <u>Stephanie Schweske</u>				
Sample Collector: <u>Stephanie Schweske</u>	Sample Collector Phone: <u>719-331-5341</u>				

PHASE I, II, V Drinking Water Analyses (check requested analysis)

Subcontract Analyses

Date	Time	Client Sample ID / Sample Pt ID	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk/Lang. Index (Circle)	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	Cyanide	Gross Alpha/Beta	Radium 226/228	Radon	Uranium	
12/11	8:33am	#1	3																											
12/11	2:26pm	#2	1																											
12/11	2:28pm	#3	2																											
12/11	2:30pm	#4	1																											
12/11	2:31pm	#5	1																											
12/11	2:33pm	#6	2																											
12/11	2:37pm	#7	1																											
12/11	2:40pm	#8	1																											
12/11	2:43pm	#9	1																											
12/11	2:43pm	#10	2																											

Instructions:

Please see enclosed doc. for call analysis's desired. No bottle verification. Field temp: 11.7°C. Field pH: 6.15

C/S Info:

Seals Present Yes No Headspace Yes No

Relinquished By: <u>[Signature]</u>	Date/Time: <u>12/11 3:35pm</u>	Received By: <u>[Signature]</u>	Date/Time: <u>12/12/19</u>	Delivered Via: <u>FedEx</u>	Relinquished By: <u>[Signature]</u>	Date/Time: <u>12/12/19</u>	C/S Charge: <input checked="" type="checkbox"/>	Temp. °C/Ice: <u>4</u>	Received By: <u>[Signature]</u>	Sample Pres. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Date/Time: _____
-------------------------------------	--------------------------------	---------------------------------	----------------------------	-----------------------------	-------------------------------------	----------------------------	---	------------------------	---------------------------------	--	------------------

805

Drinking Water Chain of Custody

2/2



LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information		Bill To Information (if different from report to)		State Form / Project Information	
Company Name: <u>DSS-Hydro</u>	Company Name: _____	PWSID: <u>N/A</u>	Address: <u>13935-Vermont</u>	City: <u>CO</u>	State/Zip: <u>CO 80228</u>
Contact Name: <u>Dave Schweserke</u>	Contact Name: _____	System Name: _____	City: <u>CO</u>	State/Zip: <u>CO 80228</u>	County: <u>El Paso</u>
Address: <u>5540 Tech Center Dr</u>	Address: _____	Address: _____	City: <u>CO</u>	State/Zip: <u>CO 80228</u>	County: _____
City: <u>CO</u>	City: _____	City: _____	City: _____	State/Zip: _____	County: _____
State/Zip: <u>CO 80228</u>	State/Zip: _____	State/Zip: _____	State/Zip: _____	State/Zip: _____	County: _____
Phone: <u>719-277-1212</u>	Phone: _____	Phone: _____	Phone: _____	Phone: _____	County: _____
Fax: _____	Fax: _____	Fax: _____	Fax: _____	Fax: _____	County: _____
Email: <u>d.schweserke@hydro.com</u>	Email: _____	Compliance Samples: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Compliance Samples: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Compliance Samples: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Compliance Samples: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Sampler Name: <u>Stephane Schweserke</u>	PO No.: _____	Send Forms to State: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Send Forms to State: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Send Forms to State: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Send Forms to State: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Task Number: 191212008 CAL Task No. 191212008

Abate ARF

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 THMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC DOC (Circle)	SUVA, UV 254 (Circle)	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
12/1	2:45pm	A11	2																										
	2:47pm	A13	2																										
	2:50pm	A14	2																										
	2:55pm	AK	2																										
	3:00pm	A11	2																										

Instructions: 29 + 2 blanks

Seals Present Yes No Headspace Yes No

Relinquished By: <u>[Signature]</u>	Date/Time: <u>12/11 3:30pm</u>	Received By: <u>[Signature]</u>	Date/Time: <u>12/12/19</u>	Delivered Via: <u>Fedex</u>	CS Change: <input checked="" type="checkbox"/>	Temp. <u>4</u> °C/Ice <u>Y</u>	Received By: <u>[Signature]</u>	Date/Time: <u>[Signature]</u>	Sample Pres. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Date/Time: <u>[Signature]</u>
-------------------------------------	--------------------------------	---------------------------------	----------------------------	-----------------------------	--	--------------------------------	---------------------------------	-------------------------------	--	-------------------------------

New Groundwater Source Sampling Request

ARF

Field Measurements

pH
Turbidity
Conductivity

General Parameters

Total Organic Carbon
Sodium
Calcium
Magnesium
Potassium
Total Hardness – CaCO₃
Total Alkalinity
Bicarbonate Alkalinity
Strontium
Total Dissolved Solids (TDS)

Microbiological

Total Coliform
E.Coli

Radionuclides

Radium 226 and Radium 228
Gross alpha particle activity -
 Including Radium 226 but not radon &
 uranium
Beta particle and photon radioactivity

VOCs

Vinyl chloride
Benzene
Carbon tetrachloride
1,2-Dichloroethane
Trichloroethylene
1,1,1 Trichloroethane
1,1-Dichloroethylene
Cis-1,2 Dichloroethylene
1,2-Dichloropropane
Ethylbenzene
Monochlorobenzene
o-Dichlorobenzene
p-Dichlorobenzene
Styrene
Tetrachloroethylene
Toluene
Trans-1,2 Dichloroethylene
Xylenes (total)
Dichloromethane (methylene chloride)
1,2,4-Trichlorobenzene
1,1,2-Trichloroethane

Inorganics

Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Copper
Cyanide (as free Cyanide)
Fluoride
Iron
Lead
Manganese
Mercury
Nickel
Nitrate
Nitrite
Selenium
Thallium
Uranium

Secondary MCLs

Aluminum
Chloride
Silver
Sulfate
Zinc

Synthetic Organic Chemicals (SOC)

Alachlor
Aldibarb1
Aldicarb sulfoxide
Aldicarb sulfone
Altrazine
Carbofuran
Chlordane
Dibromochloropropane
2,4 D
Ethylene dibromide
Heptachlor
Heptachlor epoxide
Lindane
Methoxychlor
Polychlorinated biphenyls
Pentachlorophenol
Toxaphene
2,4,5-TP(Silvex)
Benzopyrene
Dalapon
Di(2-ethylhexyl) adipate
Di(2-ethylhexyl)phthalate
Dinoseb
Dioxin
Diquat
Endothall
Endrin
Glyphosate
Hexachlorobenzene
Hexachlorocyclopentadiene
Oxamyl (Vydate)
Picloram
Simazine

ARF

Analytical Results

TASK NO: 191212008

Report To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Bill To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Task No.: 191212008
Client PO:
Client Project: Abeyta

Date Received: 12/12/19
Date Reported: 1/6/20
Matrix: Water - Drinking

Customer Sample ID Abeyta
Sample Date/Time: 12/11/19 2:28 PM
Lab Number: 191212008-01

Test	Result	Method	ML	Date Analyzed	Analyzed By	MCL
Chloride	1.6 mg/L	EPA 300.0	0.1 mg/L	12/12/19	MAT	
Fluoride	0.18 mg/L	EPA 300.0	0.09 mg/L	12/12/19	MAT	4
Nitrate Nitrogen	0.40 mg/L	EPA 300.0	0.05 mg/L	12/12/19	MAT	10
Nitrite Nitrogen	< 0.03 mg/L	EPA 300.0	0.03 mg/L	12/12/19	MAT	1
Sulfate	2.7 mg/L	EPA 300.0	0.1 mg/L	12/12/19	MAT	
Cyanide-Free	< 0.005 mg/L	EPA 335.4	0.005 mg/L	12/18/19	CES	
Dibromochloropropane	< 0.02 ug/L	EPA 504.1	0.02 ug/L	12/17/19	SPF	0.2
Ethylene dibromide	< 0.01 ug/L	EPA 504.1	0.01 ug/L	12/17/19	SPF	0.05
Aldrin	< 0.05 ug/L	EPA 505	0.05 ug/L	12/14/19	SPF	
Chlordane	< 0.2 ug/L	EPA 505	0.2 ug/L	12/14/19	SPF	2
Dieldrin	< 0.05 ug/L	EPA 505	0.05 ug/L	12/14/19	SPF	
Endrin	< 0.01 ug/L	EPA 505	0.01 ug/L	12/14/19	SPF	2
Heptachlor epoxide	< 0.02 ug/L	EPA 505	0.02 ug/L	12/14/19	SPF	0.2
Hexachlorobenzene	< 0.1 ug/L	EPA 505	0.1 ug/L	12/14/19	SPF	1
Hexachlorocyclopentadiene	< 0.1 ug/L	EPA 505	0.1 ug/L	12/14/19	SPF	50
Lindane	< 0.02 ug/L	EPA 505	0.02 ug/L	12/14/19	SPF	0.2
Methoxychlor	< 0.1 ug/L	EPA 505	0.1 ug/L	12/14/19	SPF	40
Polychlorinated biphenyl's	< 0.1 ug/L	EPA 505	0.1 ug/L	12/14/19	SPF	0.5
Toxaphene	< 1 ug/L	EPA 505	1 ug/L	12/14/19	SPF	3

Abbreviations/ References:

ML = Minimum Level = LRL = RL
MCL = Maximum Contaminant Level per The EPA
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 mls = Most Probable Number Index/ 100 mls
Date Analyzed = Date Test Completed



DATA APPROVED FOR RELEASE BY

Analytical Results

TASK NO: 191212008

Report To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Bill To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Task No.: 191212008
Client PO:
Client Project: Abeyta

Date Received: 12/12/19
Date Reported: 1/6/20
Matrix: Water - Drinking

Customer Sample ID Abeyta
Sample Date/Time: 12/11/19 2:28 PM
Lab Number: 191212008-01

Test	Result	Method	ML	Date Analyzed	Analyzed By	MCL
2,4,5-TP	< 0.2 ug/L	EPA 515.4	0.2 ug/L	12/19/19	mbs	50
2,4,-D	< 0.1 ug/L	EPA 515.4	0.1 ug/L	12/19/19	mbs	70
Dalapon	< 1.0 ug/L	EPA 515.4	1.0 ug/L	12/19/19	mbs	200
Dicamba	< 0.5 ug/L	EPA 515.4	0.5 ug/L	12/19/19	mbs	
Dinoseb	< 0.2 ug/L	EPA 515.4	0.2 ug/L	12/19/19	mbs	7
Pentachlorophenol	< 0.04 ug/L	EPA 515.4	0.04 ug/L	12/19/19	mbs	1
Picloram	< 0.1 ug/L	EPA 515.4	0.1 ug/L	12/19/19	mbs	500
Alachlor	< 0.2 ug/L	EPA 525.2	0.2 ug/L	12/19/19	LEH	2
Atrazine	< 0.1 ug/L	EPA 525.2	0.1 ug/L	12/19/19	LEH	3
Benzo(a)pyrene	< 0.02 ug/L	EPA 525.2	0.02 ug/L	12/19/19	LEH	0.2
Butachlor	< 0.25 ug/L	EPA 525.2	0.25 ug/L	12/19/19	LEH	
Di(2-ethylhexyl)adipate	< 0.6 ug/L	EPA 525.2	0.6 ug/L	12/19/19	LEH	400
Di(2-ethylhexyl)phthalate	< 0.6 ug/L	EPA 525.2	0.6 ug/L	12/19/19	LEH	6
Heptachlor	< 0.04 ug/L	EPA 525.2	0.04 ug/L	12/19/19	LEH	0.4
Metolachlor	< 0.25 ug/L	EPA 525.2	0.25 ug/L	12/19/19	LEH	
Metribuzin	< 0.25 ug/L	EPA 525.2	0.25 ug/L	12/19/19	LEH	
Propachlor	< 0.25 ug/L	EPA 525.2	0.25 ug/L	12/19/19	LEH	
Simazine	< 0.07 ug/L	EPA 525.2	0.07 ug/L	12/19/19	LEH	4
3-Hydroxycarbofuran	< 0.5 ug/L	EPA 531.1	0.5 ug/L	1/3/20	MBS	
Aldicarb	< 0.6 ug/L	EPA 531.1	0.6 ug/L	1/3/20	MBS	
Aldicarb sulfone	< 1.0 ug/L	EPA 531.1	1.0 ug/L	1/3/20	MBS	

Abbreviations/ References:

ML = Minimum Level = LRL = RL
MCL = Maximum Contaminant Level per The EPA
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 mls = Most Probable Number Index/ 100 mls
Date Analyzed = Date Test Completed



DATA APPROVED FOR RELEASE BY

Analytical Results

TASK NO: 191212008

Report To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Bill To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Task No.: 191212008
Client PO:
Client Project: Abeyta

Date Received: 12/12/19
Date Reported: 1/6/20
Matrix: Water - Drinking

Customer Sample ID Abeyta
Sample Date/Time: 12/11/19 2:28 PM
Lab Number: 191212008-01

Test	Result	Method	ML	Date Analyzed	Analyzed By	MCL
Aldicarb sulfoxide	< 0.7 ug/L	EPA 531.1	0.7 ug/L	1/3/20	MBS	
Carbaryl	< 0.5 ug/L	EPA 531.1	0.5 ug/L	1/3/20	MBS	
Carbofuran	< 0.9 ug/L	EPA 531.1	0.9 ug/L	1/3/20	MBS	40
Methomyl	< 0.5 ug/L	EPA 531.1	0.5 ug/L	1/3/20	MBS	
Oxamyl	< 1.0 ug/L	EPA 531.1	1.0 ug/L	1/3/20	MBS	200
Endothall	< 9 ug/L	EPA 548.1	9 ug/L	12/18/19	LEH	100
Diquat	< 0.4 ug/L	EPA 549.2	0.4 ug/L	12/16/19	Michael	20
1,1,1,2-Tetrachloroethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
1,1,1-Trichloroethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	200
1,1,2,2-Tetrachloroethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
1,1,2-Trichloroethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	5
1,1-Dichloroethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
1,1-Dichloroethylene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	7
1,1-Dichloropropene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
1,2,3-Trichlorobenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
1,2,3-Trichloropropane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
1,2,4-Trichlorobenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	70
1,2,4-Trimethylbenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
1,2-Dichloroethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	5
1,2-Dichloropropane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	5

Abbreviations/ References:

ML = Minimum Level = LRL = RL
MCL = Maximum Contaminant Level per The EPA
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 mls = Most Probable Number Index/ 100 mls
Date Analyzed = Date Test Completed



DATA APPROVED FOR RELEASE BY

Analytical Results

TASK NO: 191212008

Report To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Bill To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Task No.: 191212008
Client PO:
Client Project: Abeyta

Date Received: 12/12/19
Date Reported: 1/6/20
Matrix: Water - Drinking

Customer Sample ID Abeyta
Sample Date/Time: 12/11/19 2:28 PM
Lab Number: 191212008-01

Test	Result	Method	ML	Date Analyzed	Analyzed By	MCL
1,3,5-Trimethylbenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
1,3-Dichloropropane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
1,3-Dichloropropene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Benzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	5
Bromobenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Bromochloromethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Bromodichloromethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Bromoform	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Bromomethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Carbon Tetrachloride	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	5
Chlorodibromomethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Chloroethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Chloroform	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Chloromethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
cis-1,2-Dichloroethylene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	70
Dibromomethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Dichlorodifluoromethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Dichloromethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	5
Ethylbenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	700
Fluorotrichloromethane	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Hexachlorobutadiene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Isopropylbenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	

Abbreviations/ References:

ML = Minimum Level = LRL = RL
MCL = Maximum Contaminant Level per The EPA
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 mls = Most Probable Number Index/ 100 mls
Date Analyzed = Date Test Completed



DATA APPROVED FOR RELEASE BY

Analytical Results

TASK NO: 191212008

Report To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Bill To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Task No.: 191212008
Client PO:
Client Project: Abeyta

Date Received: 12/12/19
Date Reported: 1/6/20
Matrix: Water - Drinking

Customer Sample ID Abeyta
Sample Date/Time: 12/11/19 2:28 PM
Lab Number: 191212008-01

Test	Result	Method	ML	Date Analyzed	Analyzed By	MCL
m-Dichlorobenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Monochlorobenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	100
Naphthalene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
n-Butylbenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
n-Propylbenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
o-Chlorotoluene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
o-Dichlorobenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	600
Para-Dichlorobenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	75
p-Chlorotoluene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
p-Isopropyltoluene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
sec-Butylbenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Styrene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	100
tert-Butylbenzene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	
Tetrachloroethylene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	5
Toluene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	1000
Total Trihalomethanes	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	80
trans-1,2-Dichloroethylene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	100
Trichloroethylene	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	5
Vinyl chloride	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	2
Xylenes (total)	< 0.5 ug/L	EPA-524.2	0.5 ug/L	12/19/19	LEH	10000
Total Organic Carbon	< 0.5 mg/L	SM 5310-C	0.5 mg/L	12/17/19	ISG	

Abbreviations/ References:

ML = Minimum Level = LRL = RL
MCL = Maximum Contaminant Level per The EPA
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 mls = Most Probable Number Index/ 100 mls
Date Analyzed = Date Test Completed



DATA APPROVED FOR RELEASE BY

Analytical Results

TASK NO: 191212008

Report To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Bill To: Doug Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Task No.: 191212008
Client PO:
Client Project: Abeyta

Date Received: 12/12/19
Date Reported: 1/6/20
Matrix: Water - Drinking

Customer Sample ID Abeyta
Sample Date/Time: 12/11/19 2:28 PM
Lab Number: 191212008-01

Test	Result	Method	ML	Date Analyzed	Analyzed By	MCL
<i>Total</i>						
Calcium	10.1 mg/L	EPA 200.7	0.1 mg/L	12/16/19	MBN	
Iron	< 0.005 mg/L	EPA 200.7	0.005 mg/L	12/16/19	MBN	0.3
Magnesium	1.44 mg/L	EPA 200.7	0.02 mg/L	12/16/19	MBN	
Potassium	1.2 mg/L	EPA 200.7	0.1 mg/L	12/16/19	MBN	
Sodium	8.0 mg/L	EPA 200.7	0.1 mg/L	12/16/19	MBN	N/A
Aluminum	< 0.001 mg/L	EPA 200.8	0.001 mg/L	12/13/19	IPC	0.05
Antimony	< 0.001 mg/L	EPA 200.8	0.001 mg/L	12/13/19	IPC	0.006
Arsenic	< 0.001 mg/L	EPA 200.8	0.001 mg/L	12/13/19	IPC	0.01
Barium	0.034 mg/L	EPA 200.8	0.001 mg/L	12/13/19	IPC	2
Beryllium	< 0.001 mg/L	EPA 200.8	0.001 mg/L	12/13/19	IPC	0.004
Cadmium	< 0.001 mg/L	EPA 200.8	0.001 mg/L	12/13/19	IPC	0.005
Chromium	< 0.001 mg/L	EPA 200.8	0.001 mg/L	12/13/19	IPC	0.1
Copper	0.0625 mg/L	EPA 200.8	0.0008 mg/L	12/13/19	IPC	1.3
Lead	0.0008 mg/L	EPA 200.8	0.0001 mg/L	12/13/19	IPC	0.015
Manganese	< 0.0008 mg/L	EPA 200.8	0.0008 mg/L	12/13/19	IPC	0.05
Mercury	< 0.0001 mg/L	EPA 200.8	0.0001 mg/L	12/13/19	IPC	0.002
Nickel	< 0.001 mg/L	EPA 200.8	0.001 mg/L	12/13/19	IPC	N/A
Selenium	0.002 mg/L	EPA 200.8	0.001 mg/L	12/13/19	IPC	0.05
Silver	< 0.0001 mg/L	EPA 200.8	0.0001 mg/L	12/13/19	IPC	
Strontium	0.096 mg/L	EPA 200.8	0.005 mg/L	12/13/19	IPC	
Thallium	< 0.001 mg/L	EPA 200.8	0.001 mg/L	12/13/19	IPC	0.002

Abbreviations/ References:

ML = Minimum Level = LRL = RL
MCL = Maximum Contaminant Level per The EPA
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 mls = Most Probable Number Index/ 100 mls
Date Analyzed = Date Test Completed



DATA APPROVED FOR RELEASE BY

Analytical Results

TASK NO: 191212008

Report To: Doug Schwenke
Company: JDS Hydro Consultants
 5540 Tech Center Dr.
 Suite 100
 Colorado Springs CO 80919

Bill To: Doug Schwenke
Company: JDS Hydro Consultants
 5540 Tech Center Dr.
 Suite 100
 Colorado Springs CO 80919

Task No.: 191212008
Client PO:
Client Project: Abeyta

Date Received: 12/12/19
Date Reported: 1/6/20
Matrix: Water - Drinking

Customer Sample ID Abeyta
Sample Date/Time: 12/11/19 2:28 PM
Lab Number: 191212008-01

Test	Result	Method	ML	Date Analyzed	Analyzed By	MCL
<i>Total</i>						
Uranium	< 0.0002 mg/L	EPA 200.8	0.0002 mg/L	12/13/19	IPC	0.03
Zinc	0.095 mg/L	EPA 200.8	0.001 mg/L	12/13/19	IPC	5
Total Hardness	31.2 mg/L as CaCO3	SM 2340-B	0.1 mg/L as CaCO3	12/16/19	MBN	

Abbreviations/ References:

ML = Minimum Level = LRL = RL
 MCL = Maximum Contaminant Level per The EPA
 mg/L = Milligrams Per Liter or PPM
 ug/L = Micrograms Per Liter or PPB
 mpn/100 mls = Most Probable Number Index/ 100 mls
 Date Analyzed = Date Test Completed



DATA APPROVED FOR RELEASE BY

New Groundwater Source Sampling Request

ARF

Field Measurements

pH
Turbidity
Conductivity

General Parameters

Total Organic Carbon
Sodium
Calcium
Magnesium
Potassium
Total Hardness – CaCO₃
Total Alkalinity
Bicarbonate Alkalinity
Strontium
Total Dissolved Solids (TDS)

Microbiological

Total Coliform
E.Coli

Radionuclides

Radium 226 and Radium 228
Gross alpha particle activity -
 Including Radium 226 but not radon &
 uranium
Beta particle and photon radioactivity

VOCs

Vinyl chloride
Benzene
Carbon tetrachloride
1,2-Dichloroethane
Trichloroethylene
1,1,1 Trichloroethane
1,1-Dichloroethylene
Cis-1,2 Dichloroethylene
1,2-Dichloropropane
Ethylbenzene
Monochlorobenzene
o-Dichlorobenzene
p-Dichlorobenzene
Styrene
Tetrachloroethylene
Toluene
Trans-1,2 Dichloroethylene
Xylenes (total)
Dichloromethane (methylene chloride)
1,2,4-Trichlorobenzene
1,1,2-Trichloroethane

Inorganics

Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Copper
Cyanide (as free Cyanide)
Fluoride
Iron
Lead
Manganese
Mercury
Nickel
Nitrate
Nitrite
Selenium
Thallium
Uranium

Secondary MCLs

Aluminum
Chloride
Silver
Sulfate
Zinc

Synthetic Organic Chemicals (SOC)

Alachlor
Aldibarb1
Aldicarb sulfoxide
Aldicarb sulfone
Altrazine
Carbofuran
Chlordane
Dibromochloropropane
2,4 D
Ethylene dibromide
Heptachlor
Heptachlor epoxide
Lindane
Methoxychlor
Polychlorinated biphenyls
Pentachlorophenol
Toxaphene
2,4,5-TP(Silvex)
Benzopyrene
Dalapon
Di(2-ethylhexyl) adipate
Di(2-ethylhexyl)phthalate
Dinoseb
Dioxin
Diquat
Endothall
Endrin
Glyphosate
Hexachlorobenzene
Hexachlorocyclopentadiene
Oxamyl (Vydate)
Picloram
Simazine

ARF



Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80403 USA
Tel: (303) 279-4501
Fax: (303) 278-1528

Lab Control ID: 19M03573
Received: Dec 16, 2019
Reported: Feb 20, 2020
Purchase Order No.
None Received

Customer ID: 20040H
Account ID: Z01034

Stuart Nielson
Colorado Analytical Laboratories, Inc.
10411 Heinz Way
Commerce City, CO 80640

ANALYTICAL REPORT

*Report may only be copied in its entirety.
Results reported herein relate only to discrete samples
submitted by the client. Hazen Research, Inc. does not warrant
that the results are representative of anything other than the
samples that were received in the laboratory*

By: 

Jessica Axen
Analytical Laboratories Director



Hazen Research, Inc.
 4601 Indiana Street
 Golden, CO 80403 USA
 Tel: (303) 279-4501
 Fax: (303) 278-1528

Lab Control ID: 19M03573
 Received: Dec 16, 2019
 Reported: Feb 20, 2020
 Purchase Order No.
 None Received

Customer ID: 20040H
 Account ID: Z01034

ANALYTICAL REPORT

Stuart Nielson
 Colorado Analytical Laboratories, Inc.

Lab Sample ID			19M03573-001					
Customer Sample ID			191212009-01 - Abeyta sampled on 12/11/19 @ 1426 by Stephanie S.					
Parameter	Units	Code	Precision* Detection			Analysis		
			Result	+/-	Limit	Method	Date / Time	Analyst
Gross Alpha	pCi/L	T	2.2	1.7	0.1	SM 7110 B	12/19/19 @ 0815	SS
Gross Beta	pCi/L	T	<3.7	2.4	3.7	SM 7110 B	12/19/19 @ 0815	SS
Radium-226	pCi/L	T	0.6	0.2	0.1	SM 7500-Ra B	2/5/20 @ 1045	SA
Radium-228	pCi/L	T	2.2	0.9	0.3	EPA Ra-05	2/13/20 @ 0825	JR

Certification ID's: CO/EPA CO00008; CT PH-0152; KS E-10265; NJ CO008; NYSELAP (NELAC Certified) 11417; RI LAO00284; WI 998376610, TX T104704256-15-6

*Variability of the radioactive decay process (counting error) at the 95% confidence level, 1.96 sigma.

Codes: (T) = Total (D) = Dissolved (S) = Suspended (R) = Total Residual (AR) = As Received < = Less Than

Batch QC Summary Form

Analyte: Gross Alpha

Control Standard/LFB: ID: C-11 pCi/mL: 57.4 (use 1 diluted)

Spike Solution: ID: C-11 pCi/mL: 57.4 (use 1 mL)

Spike Recovery Calculation: Sample: Tap*

Calculation:
$$\frac{(54.7) (1.000) - (0.0) (0.200)}{57.4} \times 100 = 95\%$$

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/- 30 %	x		
Spike Recovery	70 - 130 %	x		
Blank	< or = 3 x Uncertainty	x		
Duplicate 1	95% confidence interval overlap	x		
Duplicate 2 *	95% confidence interval overlap			x

* Required for batch size greater than 10 samples.

Conclusions:

 x Batch QC Passes**
 Batch QC Fails
 Batch QC Passes, with exceptions**:

Reruns Required: _____

Narrative:

**All QC data provided in this section of the report met the acceptance criteria specified in the analytical methods and procedures. State Maximum Contamination Levels (MCLs) are not evaluated in this report.

Batch Listing by Lab Control Number:

19M03594 _____
19M03559 _____
19M03571 _____
19M03572 _____
19M03573 _____
19M03590 _____
19M03596 _____
19M03552 _____
19M03577 _____

Evaluator:

Gynnea Rockwell _____

12/20/2019

Date

Batch QC Summary Form

Analyte: Gross Beta

Control Standard/LFB: ID: C-11 pCi/mL: 44 (use 1 diluted)

Spike Solution: ID: C-11 pCi/mL: 44 (use 1 mL)

Spike Recovery Calculation: Sample: Tap*

$$\text{Calculation: } \frac{(38.5) - (1.000) - (0.0)}{44} \times 100 = 88\%$$

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/- 20 %	x		
Spike Recovery	80 - 120 %	x		
Blank	< or = 3 x Uncertainty	x		
Duplicate 1	95% confidence interval overlap	x		
Duplicate 2 *	95% confidence interval overlap			x

* Required for batch size greater than 10 samples.

Conclusions:

 x Batch QC Passes**
 Batch QC Fails
 Batch QC Passes, with exceptions**:

Reruns Required: _____

Narrative:

**All QC data provided in this section of the report met the acceptance criteria specified in the analytical methods and procedures. State Maximum Contamination Levels (MCLs) are not evaluated in this report.

Batch Listing by Lab Control Number:

19M03594 _____
19M03559 _____
19M03571 _____
19M03572 _____
19M03573 _____
19M03590 _____
19M03596 _____
19M03552 _____
19M03577 _____

Evaluator:

Gynnea Rockwell _____

12/20/2019

Date

Batch QC Summary Form

Analyte: Radium-226

Control Standard/LFB: ID: NBL-6A pCi/mL: 23 (use 2 diluted)

Spike Solution: ID: NBL-6A pCi/mL: 23 (use 2 mL)

Spike Recovery Calculation: Sample: 20M01235-002b

$$\text{Calculation: } \frac{(44.3) (1.000) - (0.0) (1.000)}{46} \times 100 = 96\%$$

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/- 20 %	x		
Spike Recovery	80 - 120 %	x		
Blank	< or = 3 x Uncertainty	x		
Duplicate 1	95% confidence interval overlap	x		
Duplicate 2 *	95% confidence interval overlap			x

* Required for batch size greater than 10 samples.

Conclusions:

 x Batch QC Passes**
 Batch QC Fails
 Batch QC Passes, with exceptions**:

Reruns Required: _____

Narrative:

**All QC data provided in this section of the report met the acceptance criteria specified in the analytical methods and procedures. State Maximum Contamination Levels (MCLs) are not evaluated in this report.

Batch Listing by Lab Control Number:

20M01235 _____
19M03579 _____
19M03580 _____
19M03581 _____
19M03582 _____
19M03583 _____
19M03584 _____
19M03573 _____

Evaluator:

Gynnea Rockwell _____

02/10/2020

Date

Batch QC Summary Form

Analyte: Radium-228

Control Standard/LFB: ID: NBL-7A pCi/mL: 13.2 (use 10 diluted)

Spike Solution: ID: NBL-7A pCi/mL: 13.2 (use 10 mL)

Spike Recovery Calculation: Sample: 19M03571-002d

Calculation:
$$\frac{(140.4) (1.000) - (0.9) (1.000)}{132} \times 100 = 106\%$$

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/- 20 %	x		
Spike Recovery	80 - 120 %	x		
Blank	< or = 3 x Uncertainty	x		
Duplicate 1	95% confidence interval overlap	x		
Duplicate 2 *	95% confidence interval overlap			x

* Required for batch size greater than 10 samples.

Conclusions:

 x Batch QC Passes**
 Batch QC Fails
 Batch QC Passes, with exceptions**:

Reruns Required: _____

Narrative:

**All QC data provided in this section of the report met the acceptance criteria specified in the analytical methods and procedures. State Maximum Contamination Levels (MCLs) are not evaluated in this report.

Batch Listing by Lab Control Number:

19M03549 _____
20M01235 _____
19M03561 _____
19M03571 _____
19M03573 _____
19M03579 _____

Evaluator:
 _____

_____ 02/20/2020
 Date

