

WATER RESOURCES REPORT

for

***FALCON FIELD METROPOLITAN DISTRICT
FALCON, CO***

January 2021

Prepared By:



FALCON FIELD METROPOLITAN DISTRICT

WATER RESOURCES REPORT

January 2021

Prepared for:

Falcon Field Metropolitan District
c/o White Bear Ankele Tanaka & Waldron
2154 E Commons Avenue, Suite 2000
Centennial, Colorado 80228

Prepared by:

JDS-Hydro Consultants, Inc.
5540 Tech Center Drive, Suite 100
Colorado Springs, CO 80919

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1.0 INTRODUCTION AND EXECUTIVE SUMMARY

The purpose of this report is to address the specific water needs of the Falcon Field Metropolitan District and its development.

EXECUTIVE SUMMARY: The Woodmen Hills Metropolitan District (WHMD, the District) has adequate water supply to meet the needs of the Falcon Field Metropolitan District on a 300-year basis. Additionally, the Woodmen Hills Metropolitan District has adequate wastewater system and treatment capacity to provide wastewater service to this development.

2.0 PROJECTED LAND USES

2.1 Projected Land Uses

Lands within the subject area have been planned as commercial development. This report pertains to full build-out of the Falcon Field development. Please refer to the *Land Use Exhibit* in **Appendix B**.

2.2 Water Demands for the Subject Property

All parcels within the subject area have been planned as commercial development. A Water Supply Information Summary is included in **Appendix E**. *Table 2-1* provides a summary of expected water demands and wastewater loads.

Table 2-1

Land Use	Water				Wastewater
	Area (Acres)	SFE Usage (AF)	SFE's per Acre	Total Indoor & Irrigation (AF)	(@ 172 GPD per SFE) (GPD)
Commercial	<i>Note 1</i> 39.20	0.353	<i>Note 2</i> 4.0	55.350	26,970
TOTALS	39.20	0.353	4.0	55.350	26,970

Note 1: Only counting lot acreage. Not including drainage tracts and rights-of-way.

Note 2: Assuming 4 SFE's per acre

3.0 DISTRICT WATER NEEDS AND PROJECTED DEMANDS

3.1 Actual Water Demand Summary

The Woodmen Hills Metropolitan District tracks water demands and water use on an annual basis. The three most recent water use data are as follows:

Table 3-1: Three-Year Use History

Year	Annual Water Use (AF)	SFE (No.)	Unit User Characteristic (AF/SFE)
2017	779.54	2,679	0.291
2018	800.33	2,815	0.284
2019	830.49	2,914	0.285

3.2 Unit Water User Characteristics

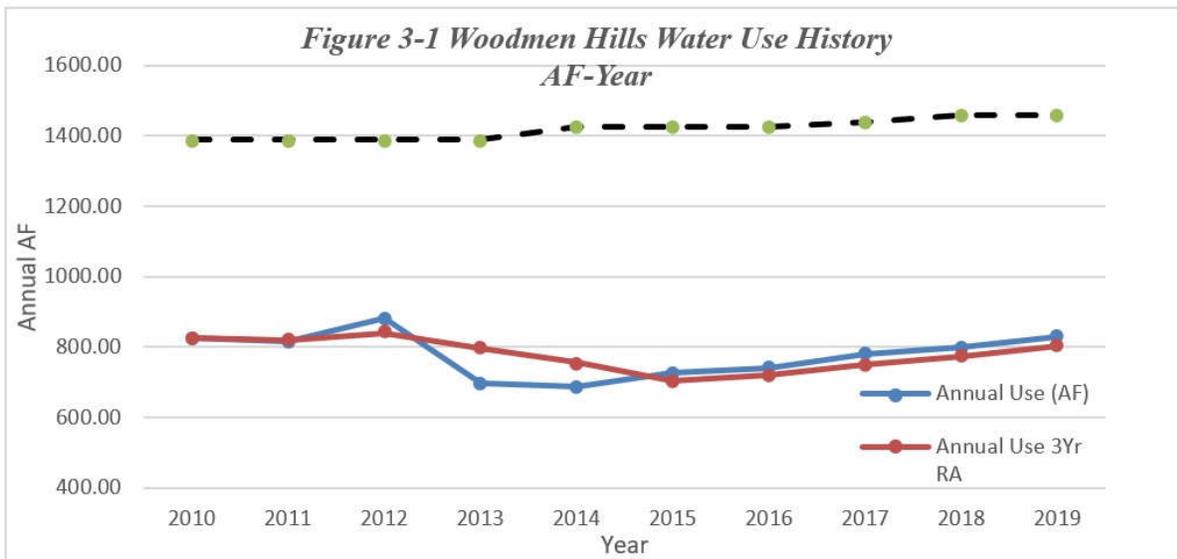
Unit water user characteristics are counted on a Single Family Equivalent (SFE) basis. The actual delivered unit user characteristic varies year to year, and averages about 0.29 annual acre-feet (AF). The District has adopted a 0.353 AF/SFE/day planning demand factor that covers not only actual use, but also covers reserves, system losses, and water accountability.

All single-family homes are counted as one SFE. Commercial and non-residential land uses are projected in terms of SFE, where a single tap might be the equivalent to more than one SFE. If and when any multi-family development is proposed in Woodmen Hills, an adjustment will be allocated in which a dwelling unit may be less than one (1) SFE.

Over the last 10 years, the unit user characteristic has been trending downward due to water conservation awareness, limitations on turf grass, low-flow fixtures, and inverted block rates, which encourage water conservation. Although there is reasonable belief that the downward trend is likely to continue, WHMD has not assumed additional downward trending into long-range planning, but will address the trend as it actually materializes.

3.3 Current Demands versus Supply

In 2019, WHMD used 830 acre-feet of water out of a potential supply of 1,459 acre-feet on a 300-year basis – about 57% of supply. The use of overall supply has varied over the last decade, with a maximum of 63% of 300-year supply being used in the year 2012 and a minimum use of 48% in 2014. This number will vary based on timing of water acquisitions, annual weather, and various other factors. See Figure 3-1 for a graph of WHMD’s percent demand compared to the 300-year water supply.



4.0 WATER RIGHTS AND SUPPLY

4.1 District Water Rights

The District has numerous and varied local and off-site water rights. The rights include both renewable sources and Denver Basin non-renewable sources. The Property’s total legal supply on a 300-year basis currently stands at 1,459.48 annual acre-feet₃₀₀. A narrative description of the nature of those supplies is discussed in subsequent sections. **Appendix C** contains the District’s current legal water supply inventory, and **Appendix F** contains determinations and decrees for the proposed subdivision.

4.2 Adequacy of Water Rights

Current water rights holdings are adequate for current demands and average expected buildout demands. The District’s planning or desired holdings are also within 20% of meeting 2040 and 2060 buildout projections on a 300-year basis (District buildout is expected to occur prior to 2040). The perceived planning shortage would be 23.5 annual acre-feet. However, the District expects to make acquisitions far in excess of the perceived 23.5 acre-feet shortage.

- Current Use 830 acre-feet
- Buildout Average Need 1,276 acre-feet (includes 2040 and 2060)
- Buildout Planning Target 1,483 acre-feet (includes 2040 and 2060)
- Existing 300-Year Rights 1,459.5 acre-feet₃₀₀

The District’s current water rights supply provides for a conjunctive water supply, mixing fully-consumable, non-renewable, and renewable sources. While current 300-year supplies exceed expected full buildout (including 2040 and 2060 scenarios), WHMD is actively pursuing long-term, additional future supplies to bolster its long-term water security and address anticipated physical depletions of non-renewable water.

4.3 Description of Current Water Rights

The District’s current water rights include renewable and non-renewable supplies in the Denver Basin. These are each discussed further in this section.

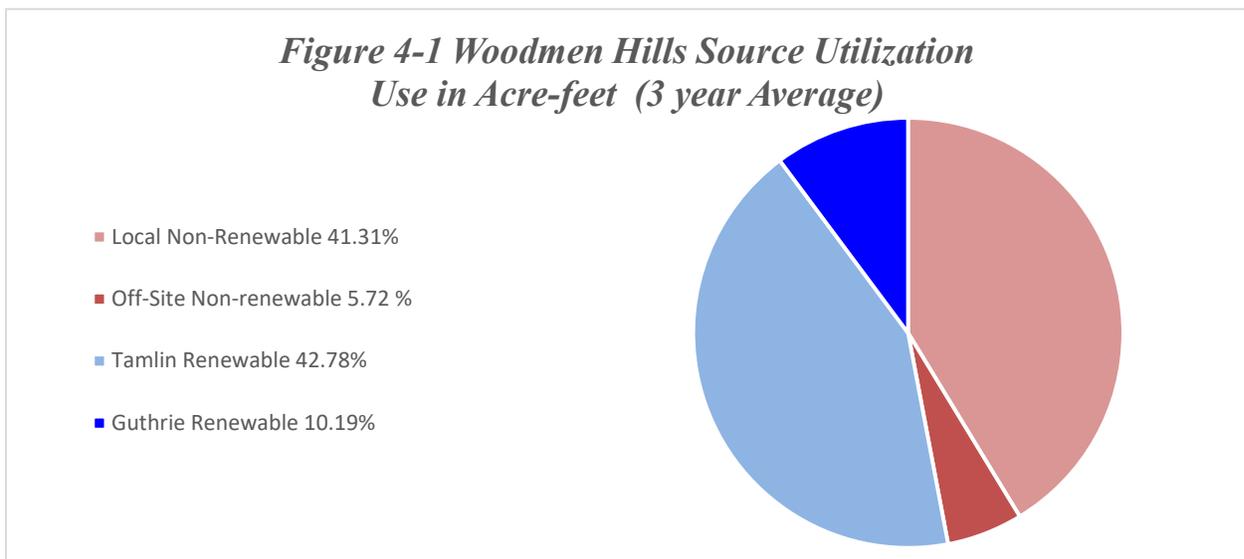
Renewable Water Supply

Woodmen Hills and the surrounding area are within a designated groundwater basin known as the Upper Black Squirrel (UBS) Groundwater Management District. Rules regarding use, access, and other management issues are governed by the UBS and the State Groundwater Commission. These rules vary from other areas in the State. Water types managed within the District are alluvial groundwater that exists in the uppermost sands, which are only 15 to 25 feet deep in the Falcon area, but up to 350 feet deep in the Guthrie Ranch area. Alluvial water in the UBS is “over-appropriated,” meaning no additional alluvial water rights are available. Therefore, acquisition of alluvial rights is limited to the purchase of someone else’s existing alluvial rights. The Guthrie alluvial rights were obtained in such a fashion. Alluvial rights are renewable.

The District has renewable resources in two categories. One is a direct alluvial pumping right in the UBS basin at Guthrie, and the other is a perpetual, contractual right through Cherokee Metropolitan District (Cherokee, CMD). The direct alluvial right is for 89 annual acre-feet and, as a renewable right, it does not need to be counted on a 300-year basis. It is currently fully and physically available, and is used at about an average of 90% of its full capacity.

The second renewable source is a 350 annual acre-feet contractual and perpetual right through Cherokee. It is typically used near its face value capacity since it is perpetual at about 98%. This water is delivered to the District through a three-mile long, off-site system to the south of the District.

In prior years, the renewable rights supplied about 53% of the District’s annual needs. Figure 4-1 illustrates WHMD’s source of supply breakdown of renewable and non-renewable sources.



Non-Renewable Denver Basin Supply

The second type of groundwater in the Falcon area is Denver Basin water. The Denver Basin is a vast, deep-rock aquifer that stretches from south of Falcon northerly to beyond Denver. Rights that are granted in the Denver basin are based on the ownership of the surface property; the larger the parcel, the larger the allocation. This water is much deeper, ranging up to 2,650 feet deep. Denver Basin water is considered finite and therefore non-renewable water. In the Falcon area, there are four main formations that make up the Denver Basin: Dawson, Denver, Arapahoe, and Laramie-Fox Hills, described from top to bottom.

The District has numerous determinations under the existing District boundaries, which total 779 annual acre-feet on a 300-year basis, and 2,356 annual acre-feet on a 100-year basis. Except maybe for support of future Aquifer Storage/Recharge (ASR) projects, it is not anticipated that the number of local well sites will be increased in the near future. Although there is significant unused pumping capability in the Falcon area, the District has relied less on their local sources in the past five to ten years.

The District has also acquired additional off-site Denver Basin rights.

These areas have yet to be fully developed as physical supply. The Hart well field already has future easements and well sites dedicated, but because there is no current need, no wells have been drilled yet in the Hart area. Because the Guthrie area has not been accessed by any other Denver Basin users at this time, its physical capacity has remained strong. Not counting the Dawson or Denver formations, the Guthrie and Hart areas have a total of 860 annual acre-feet₁₀₀ and 287 acre-feet₃₀₀. The Guthrie Denver Basin well field is currently only being pumped at a fraction of its full capability (less than 20%). The Guthrie well field is the location where WHMD expects additional physical sources (additional wells) will be drilled as needed in the near future (next 10 to 20 years).

5.0 WATER SYSTEM FACILITIES AND PHYSICAL SUPPLY

5.1 Source of Supply

Woodmen Hills has multiple sources of supply as discussed below.

Local Wells

The District has 11 wells in the Falcon area, mainly in the Arapahoe and Laramie-Fox Hills formations. These wells are all within the District's service area boundary.

Off-Site Wells

The District operates four (4) Denver Basin wells at the Guthrie field, which is about 12 miles east of the Falcon area. The Denver Basin wells are in the Arapahoe and Laramie-Fox Hills formations.

Off-Site Alluvial Wells

Additionally, the District owns and operates two (2) alluvial wells in the Guthrie Ranch area which pump renewable water from the Upper Black Squirrel Basin.

Cherokee Water

This water is alluvial from the Upper Black Squirrel Basin and is renewable. The annual quantity obtained from Cherokee is 350 acre-feet and is a perpetual right.

5.2 Water Treatment

The District owns and operates three water treatment plants and provides water treatment to its entire supply. The plants are all within the service area and treat at the following capacities:

Filter Plant #1	1.10 MGD Treatment Capacity
Filter Plant #2	0.36 MGD Treatment Capacity
Filter Plant #3	1.30 MGD Treatment Capacity

5.3 Water Storage

The District currently owns and operates four (4) water storage facilities with a total capacity of 6.25 million gallons. They have recently brought their "West Water System" online, which consists of a 4-mile, 18-inch pipeline and a new 3.0-million-gallon concrete water storage tank.

This new tank is located such that it will bolster fire flow, service pressures, system reliability, and potable water storage.

5.4 Distribution, Pumping, and Transmission Lines

The District has two major off-site transmission lines which are jointly owned with Meridian Service Metropolitan District (MSMD). The names of the transmission lines are the Guthrie Line and the Tamlin Line.

The Tamlin system is a 12-inch line extending roughly three miles south-westerly of the District and is connected to the Cherokee Metropolitan District. The ultimate capacity of the Tamlin system is 1.8 MGD. The Tamlin system includes a 1.5 MGD pumping station.

The Guthrie system is a 14-mile long, 12-inch pipeline extending to the east of the District along Judge Orr Road. It includes wells, pumping facilities, and a mid-point pumping station. Its current capacity is 1.94 MGD.

The District has additional pump stations within its boundaries, including the Theriot Pump Station and an integral pump station inside a water treatment facility.

There are multiple pressure zones within the District's service boundary, and roughly 63 miles of internal distribution lines.

5.5 *Recent and Upcoming System Expansions*

The District has recently expanded its water system, and it has future expansions currently in planning phases.

West Water System

As mentioned above, the District has recently completed its "West Water System." This system does not include any additional water rights, but does enhance the fire supply, service pressure, and system reliability. While no source of supply is being added, the new transmission line does open the door for future joint projects, shared supplies, and/or regionalization options. This project was brought online in early December 2020.

Guthrie Expansion

As a joint project with MSMD, a well field expansion is slated within the Guthrie system which is scheduled to be online in the spring of 2022. This project is the second phase of the overall *Guthrie Master Plan*. The expansion will broaden the Guthrie collection system while also adding two new wells. This project does not add any legal supply, but enhances the physical capabilities of the system.

5.6 *Water Quality*

The District treats and filters its raw water sources. Filtration is generally for iron and manganese removal. Water is disinfected to meet or exceed all CDPHE drinking water standards. **Appendix D** contains a copy of the "2020 WHMD Consumer Confidence Report," which outlines water quality delivered to District consumers.

6.0 EL PASO COUNTY MASTER PLANNING ELEMENTS

6.1 *County Water Master Plan 2040 and 2060 Projections*

WHMD lies within the El Paso County Master Planning area, Region #3. The master plan generally shows WHMD in its correct location.

Buildout

Expected buildout of WHMD is based on the extrapolated overall SFE density. The existing overall gross developed density is 1.49 SFE/gross acre. Gross acres include numerous non-water-using lands, such as drainageways, open spaces, roads, rights of way, etc. They also include mixed use, with very low-density development (lot sizes of one acre or larger), commercial, and urban density development.

Based on known and future land use and a projection of development for non-planned areas, it is expected that WHMD buildout may approach 4,000 to 4,200 SFE.

Annual growth rates over the last decade have varied from no growth in 2011 to nearly 5% growth in 2018. Overall, the 10-year annual growth rate in WHMD has been 1.73% per year. The District's projections plot growth at both a 2% and a 3% rate.

2040 Buildout

Since WHMD already exceeds 80% buildout, full buildout would be anticipated within the 2040 timeframe. The Woodmen Hills service area is likely to be fully built out between the years 2032 and 2038. Therefore, the WHMD 2040 needs are being addressed in terms of full buildout.

The 2040 buildout is currently expected to be 4,200 SFE. Using the current unit user characteristic, water average, annual planning suggests a 1,218 acre-feet average annual need, with a planning need of 1,483 acre-feet demand which includes roughly 20% reserves. Current holdings are 1,459.5 acre-feet on a 300-year basis.

In 2040, actual expected needs will be more than met with the current supply, but since WHMD is currently planning based on over 20% reserves, a possible, very small shortage of 23.5 annual acre-feet might be expected.

2060 Buildout

WHMD is expected to be fully built out prior to 2040; therefore, 2060 projections are the same as 2040.

6.2 *Description of Long-Term Planning and Future Sources of Supply*

The 300-year supply of water for WHMD appears to be more than adequate for full buildout, which would include both the 2040 and 2060 scenarios. Even with the projected WHMD 20% reserve desire, the current 300-year supply is less

than 2% short. However, portions of the District's water supply are based on non-renewable sources.

The District currently relies on about 47% of its water supply to come from non-renewable water sources (Denver Basin wells). Although these sources are substantial, the District anticipates yield degradation of non-renewable physical supplies over time, and believes that expansion of its water supply is advisable. While some Denver Basin water may be added, a focus on additional renewable sources is a priority.

In 2018, the District developed a water policy intended to facilitate the goal of continued addition of water with a priority of seeking additional renewable resources. Elements of the policy aim to:

1. Cause development to "pay its way" in terms of water and capital improvements.
2. Develop separate funding supply dedicated to:
 - Acquisition of new water
 - Development of physical infrastructure
 - Investment in additional and/or improved sources

In addition to adding off-site sources, an additional priority is to acquire and/or invest in additional renewable water supplies. WHMD's current use is met with an average of 53% renewable water sources.

Long Term Planning

Although there is no near-term perceived shortage expected in supply, the District will be increasing water reliability, increasing efficiency, and acquiring/improving sources of supply over time.

New sources/expansions are expected to come from five areas:

1. Developer Inclusions

The service area considered for full buildout includes areas that are currently not in the formal District boundaries. Developers must relinquish any and all water as a term of inclusion. While limited, the District will place these into its inventory. Some have existing determinations and some lands are not quantified. As such, these sources will be rather limited, and are expected to be non-renewable and less than 100 annual acre-feet₃₀₀.

2. Acquisitions

The District established a funding mechanism in 2018 dedicated to the development of additional legal and physical supply. This mechanism is entirely funded through development revenues and the current fund has become substantial.

Ongoing negotiations cannot be disclosed for obvious reasons. It should be noted that the District pursues both non-renewable and renewable sources with emphasis on the renewables.

3. Regionalization

There are two forms of regionalization described herein:

- a. One factor is the development of close cooperative ties with adjacent Districts in order to develop water efficiency through joint efforts. WHMD is the largest water provider and the regional wastewater provider among the five Falcon Districts. It is geographically central to all five of the major Falcon Districts, making it key to Falcon's regional water development. WHMD already has joint water projects with Meridian Service Metropolitan District and Falcon Highlands Metropolitan District. These joint actions allow for more comprehensive water projects and greater water efficiency.
- b. The second element is much broader regionalization. WHMD has been open to cooperative actions with Colorado Springs Utilities (CSU). CSU potentially is open to shared physical facility utilization, which would enable WHMD to expand its scope in seeking water rights. While it is not expected that CSU will provide actual water, the access to facilities opens greater doors for WHMD.

4. Facility Expansion

WHMD jointly owns extensive transmission systems with Meridian Service Metropolitan District, which extend 14 miles easterly and five (5) miles southerly of its service area. While certain water rights are already associated with these facilities, additional and/or replacement supplies are being considered as non-renewable replacements and/or additional rights. WHMD recently completed a transmission line to the west of its boundaries which provides substantial storage, enhanced fire protection, and allows for more regionalization options.

5. Indirect, Lawn Irrigation Return Flows (LIRF) Credits, Aquifer Storage/Recharge, and Direct Reuse

While WHMD plans on adding additional renewable water resources, it understands the value of its ability to retain consumptive use of its non-renewable resources. Therefore, we project that at least some continued pumping of Denver Basin water should extend out many decades as it creates the basis for reuse for both indirect and future direct reuse. The conjunctive use of renewable and non-renewable supplies also allows for future potential for aquifer storage and recharge, which is expected to become an option for WHMD within the Arapahoe aquifer.

Currently, WHMD discharges roughly 300 acre-feet per year of water, which is fully consumable and reusable. In addition, WHMD has quantified its LIRF

credits, which are currently being used to offset underdrain flows. However, the District has implemented underdrain control systems which will eliminate the need for using LIRF credits for augmentation, allowing the LIRF credits to be converted to potable use.

Miscellaneous Future Supplies

1. Unquantified Lands

As the District includes additional lands, further determinations will either be added to the District's supplies or the un-quantified rights will be relinquished to the District, which will then be quantified, determined, and ultimately added to the District's supplies.

The District does not immediately process all unquantified rights upon obtaining ownership, but holds such ownership until an adequate amount of lands are processed, making determinations reasonable in cost. At this time, the District is holding about 30 acres in wait, which would represent roughly an additional 9 to 10 annual acre-feet₃₀₀ to its inventory. The District usually likes to have roughly 40 acres before processing determinations. These are not added to the District's inventory until formally determined.

2. Determinations Which Might be Dedicated Upon Inclusion

Within the expected service area are lands that are not yet included which will also be bringing existing determinations to the table and dedicating these supplies to the District. These will not be added to the District's inventory until deeded to the District.

3. Future Acquisitions

WHMD recently adopted a water management and acquisition policy which allows for the generation of funds dedicated to procurement of future water rights acquisitions. WHMD's *Water Acquisition Fund* has now exceeded several million dollars. The fund is dedicated strictly to acquiring and/or developing additional future supplies. Obviously, negotiations that are ongoing for purchase of both renewable and non-renewable resources cannot be discussed here.

4. Regionalization

WHMD is not planning, or at least not depending, on any additional supplies which may be obtained through regionalization. WHMD is the largest district among the five Falcon Districts. WHMD is central to interconnecting each of the five Falcon Districts, and has been pursuing joint operations with its neighbors for years. Ultimately, joint operations could dramatically enhance the reliability and efficiency of the Falcon Districts.

WHMD also participates in one-on-one and joint discussions with CSU, which may ultimately provide regional delivery systems that allow for a broader range of acquisitions for WHMD.

6.3 *Municipal Interconnects*

WHMD operates over 51 miles of wastewater collection system and owns and operates three lift stations. This development will be required to install gravity sewer facilities in accordance with WHMD standards and approvals. Said gravity sewer facilities will connect to existing collection systems owned and operated by WHMD.

In addition to joint water supply sources, the District has several interconnects with other municipal systems that can provide two-way flows between the said districts. Certain additional interconnects may be added in the future.

WHMD has both a raw water interconnect with Cherokee that feeds one way to Cherokee as well as the Tamlin interconnect on the potable water system that conveys water to WHMD.

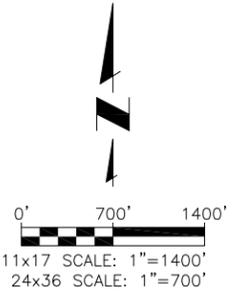
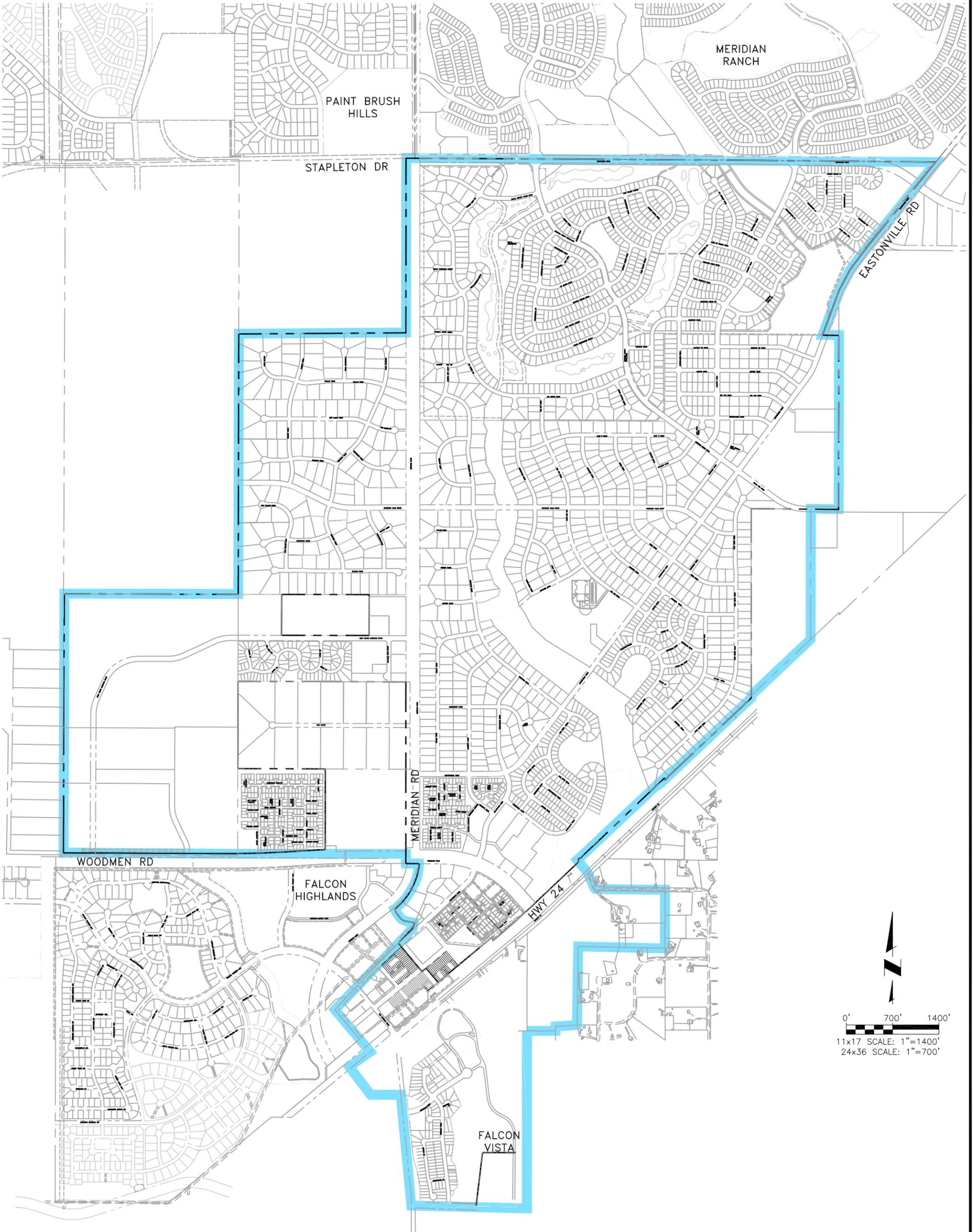
7.0 **CONCLUSION**

The Woodmen Hills Metropolitan District (WHMD, the District) has adequate water supply to meet the needs of the Falcon Field subdivision on a 300-year basis. Additionally, the Woodmen Hills Metropolitan District has adequate wastewater system and treatment capacity to provide wastewater service to this subdivision.

Appendix A

WOODMEN HILLS

METROPOLITAN DISTRICT



SHEET
1 OF 1
A

Project No.: 112.113
Date: 08/10/20
Design: JPM
Drawn: SKG
Check: JPM

REVISIONS				
NO.	DESCRIPTION	BY	APP.	DATE
1				
2				
3				
4				
5				
6				
7				

WOODMEN HILLS METROPOLITAN DISTRICT
DISTRICT MAPPING
APPENDIX A
WATER SERVICE AREA

JDS-HYDRO CONSULTANTS, INC.
5540 TECH CENTER DR., SUITE 100
COLORADO SPRINGS, COLORADO 80919
(719) 227-0072

DISCLAIMER: THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. ANY ERRORS OR OMISSIONS SHALL BE REPORTED TO JDS-HYDRO CONSULTANTS, INC. JDS-HYDRO ASSUMES NO LIABILITY FOR UNAUTHORIZED CHANGES AND/OR REVISIONS MADE TO PLANS.

Appendix B

LAND USE EXHIBIT

WOODMEN HILLS
METRO DISTRICT

WOODMEN ROAD

FALCON FIELD
SUBDIVISION
(57.67 ACRES)

HWY 24

RIO LN

CHIEF RD



0 250' 500'

SCALE 11x17: 1" = 500'
SCALE 24x36: 1" = 250'

Appendix C

**Woodmen Hills Metropolitan District Legal Water Supply Inventory
Summary Sheet**

Land Formation/Aquifer	Determination/Decree	Tributary Status	Annual Allocation 100 Year	Annual Allocation 300 Year	Well Permit(s)
			Acre-Feet/Year	Acre-Feet/Year	
<u>Woodmen Hills Non-Renewable Water Supply</u>					
Dawson	129-BD	NNT - RP	55.00	18.33	60830-F; 60831-F
Dawson	133-BD	NNT - RP	102.00	34.00	60832-F; 60833-F
Dawson/Denver			240.00	80.00	11355-F
Denver	Pre-128-BD	NNT 4%	0.00	0.00	28030-F
Denver	128-BD	NNT 4%	530.90	176.97	
Denver	132-BD	NNT 4%	251.00	83.67	
Arapahoe	127-BD	NT	195.60	65.20	A-1 (59180-F) A-2 (59179-F) A-3 (59183-F)
Arapahoe	131-BD	NT	173.00	57.67	A-5 (56121-F) A-6 (57848-F)
Laramie Fox Hills	126-BD	NT	335.80	111.93	LFH-1 (59181-F) LFH-2 (59182-F) LFH-3 (59184-F)
Laramie Fox Hills	130-BD	NT	145.00	48.33	LFH-5 (56118-F) LFH-6 (57849-F)
<u>Guthrie Ranch</u>					
Arapahoe	229-BD	NT	241.00	80.33	GA-1 (61236-F) GA-2 (61237-F)
Laramie Fox Hills	228-BD	NT	290.00	96.67	GLFH-1 (61234-F) GLFH-2 (61235-F)
<u>Falcon Vista</u>					
Denver	49-BD	NNT 4%	22.10	7.37	
Arapahoe	45307-F	NT	7.00	2.33	45307-F
Laramie Fox Hills	48-BD	NT	15.00	5.00	45306-F
<u>Bentgrass</u>					
Denver	373-BD	NNT 4%	98.80	32.93	
Denver	562-BD	NNT 4%	19.40	6.47	
Arapahoe	372-BD	NT	56.00	18.67	
Arapahoe	561-BD	NT	10.20	3.40	
Laramie Fox Hills	371-BD	NT	50.80	16.93	
Laramie Fox Hills	560-BD	NT	10.50	3.50	
<u>Hart Water</u>					
Arapahoe	2100-BD	NT	51.50	17.17	
Laramie Fox Hills	2099-BD	NT	62.50	20.83	
<u>Gaddie Inclusion</u>					
Denver	1314-BD	NNT	12.70	4.23	Corrected 092220
Arapahoe	1313-BD	NT	9.29	3.10	Converting Ownership
Laramie Fox Hills	1312-BD	NT	10.66	3.55	Converting Ownership
<u>Falcon Fields Inclusion</u>					
Denver	505-BD	NNT	25.66	8.55	Converting Ownership
Arapahoe	504-BD	NT	16.33	5.44	Converting Ownership
Laramie Fox Hills	503-BD	NT	18.12	6.04	Converting Ownership
<u>Sub Total Non-Renewable Supply</u>			3055.86	1018.62	
<u>Woodmen Hills Non-Renewable Water Supply</u>					
Guthrie Alluvial	Finding 5/5/83	Trib	89.00	89.00	612-RFP; 27554-FP
Cherokee Contract			350.00	350.00	
<u>Sub Total Renewable Supply</u>			439.00	439.00	
TOTAL WATER SUPPLY			3494.86	1457.62	
<u>Woodmen Hills Miscellaneous Water Supplies</u>					
1. Surface Water Diversion				25% of 2 cfs	Currently GC Irrigation
2. Evaporation Deficit and Lawn Irrigation Return Flow Credit (Replacement Plan)				-25.00	Pending
3. Non-determined and/or un-included Lands 83 acres					Underlying Water Rights held by WHMD but awaiting determinations. These are often processed in batches
Non-renewable Supplies					
Denver			53.25	17.75	
Arapahoe			33.87	11.29	
Laramie Fox Hills			37.59	12.53	

Appendix D

WOODMEN HILLS MD 2020 Drinking Water Quality Report

Covering Data For Calendar Year 2019

Public Water System ID: CO0121930

Esta es información importante. Si no la pueden leer, necesitan que alguien se la traduzca.

We are pleased to present to you this year's water quality report. Our constant goal is to provide you with a safe and dependable supply of drinking water. Please contact JERRY JACOBSON at 719-495-2500 with any questions or for public participation opportunities that may affect water quality. **Please see the water quality data from our wholesale system(s) (either attached or included in this report) for additional information about your drinking water.**

General Information

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791) or by visiting epa.gov/ground-water-and-drinking-water.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV-AIDS or other immune system disorders, some elderly, and infants can be particularly at risk of infections. These people should seek advice about drinking water from their health care providers. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and microbiological contaminants call the EPA Safe Drinking Water Hotline at (1-800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- Microbial contaminants:** viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants:** salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides:** may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses.
- Radioactive contaminants:** can be naturally occurring or be the result of oil and gas production and mining activities.
- Organic chemical contaminants:** including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and also may come from gas stations, urban storm water runoff, and septic systems.

In order to ensure that tap water is safe to drink, the Colorado Department of Public Health and Environment prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems (especially for pregnant women and young children). It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home's plumbing. If you are concerned about lead in your water, you may wish to have your water tested. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at epa.gov/safewater/lead.

Source Water Assessment and Protection (SWAP)

The Colorado Department of Public Health and Environment may have provided us with a Source Water Assessment Report for our water supply. For general information or to obtain a copy of the report please visit wqcdcompliance.com/ccr. The report is located under "Guidance: Source Water Assessment Reports". Search the table using 121930, WOODMEN HILLS MD, or by contacting JERRY JACOBSON at 719-495-2500. The Source Water Assessment Report provides a screening-level evaluation of potential contamination that *could* occur. It *does not* mean that the contamination *has or will* occur. We can use this information to evaluate the need to improve our current water treatment capabilities and prepare for future contamination threats. This can help us ensure that quality finished water is delivered to your homes. In addition, the source water assessment results provide a starting point for developing a source water protection plan. Potential sources of contamination in our source water area are listed on the next page.

Please contact us to learn more about what you can do to help protect your drinking water sources, any questions about the Drinking Water Quality Report, to learn more about our system, or to attend scheduled public meetings. We want you, our valued customers, to be informed about the services we provide and the quality water we deliver to you every day.

Our Water Sources

<u>Sources (Water Type - Source Type)</u>	<u>Potential Source(s) of Contamination</u>
<p>WELL A1 (Groundwater-Well) WELL LFH1 (Groundwater-Well) WELL A2 (Groundwater-Well) WELL LFH2 (Groundwater-Well) WELL DW3 (Groundwater-Well) WELL DW1 (Groundwater-Well) WELL A3 (Groundwater-Well) WELL LFH3 (Groundwater-Well) WELL A5 (Groundwater-Well) WELL LFH5 (Groundwater-Well) WELL A6 (Groundwater-Well) WELL LFH6 (Groundwater-Well) GA1 WELL (Groundwater-Well) GLFH1 WELL (Groundwater-Well) GA2 WELL (Groundwater-Well) GLFH2 WELL (Groundwater-Well) GALV1 WELL (Groundwater-Well) GALV2 WELL (Groundwater-Well) PURCHASED FROM CO0121125 CHEROKEE MD (Groundwater- Consecutive Connection)</p>	<p>No potential sources of contamination identified. Please contact us for more information.</p>

Terms and Abbreviations

- **Maximum Contaminant Level (MCL)** – The highest level of a contaminant allowed in drinking water.
- **Treatment Technique (TT)** – A required process intended to reduce the level of a contaminant in drinking water.
- **Health-Based** – A violation of either a MCL or TT.
- **Non-Health-Based** – A violation that is not a MCL or TT.
- **Action Level (AL)** – The concentration of a contaminant which, if exceeded, triggers treatment and other regulatory requirements.
- **Maximum Residual Disinfectant Level (MRDL)** – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Maximum Contaminant Level Goal (MCLG)** – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Maximum Residual Disinfectant Level Goal (MRDLG)** – The level of a drinking water disinfectant, below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **Violation (No Abbreviation)** – Failure to meet a Colorado Primary Drinking Water Regulation.
- **Formal Enforcement Action (No Abbreviation)** – Escalated action taken by the State (due to the risk to public health, or number or severity of violations) to bring a non-compliant water system back into compliance.
- **Variance and Exemptions (V/E)** – Department permission not to meet a MCL or treatment technique under certain conditions.
- **Gross Alpha (No Abbreviation)** – Gross alpha particle activity compliance value. It includes radium-226, but excludes radon 222, and uranium.
- **Picocuries per liter (pCi/L)** – Measure of the radioactivity in water.
- **Nephelometric Turbidity Unit (NTU)** – Measure of the clarity or cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the typical person.
- **Compliance Value (No Abbreviation)** – Single or calculated value used to determine if regulatory contaminant level (e.g. MCL) is met. Examples of calculated values are the 90th Percentile, Running Annual Average (RAA) and Locational Running Annual Average (LRAA).
- **Average (x-bar)** – Typical value.
- **Range (R)** – Lowest value to the highest value.

- **Sample Size (n)** – Number or count of values (i.e. number of water samples collected).
- **Parts per million = Milligrams per liter (ppm = mg/L)** – One part per million corresponds to one minute in two years or a single penny in \$10,000.
- **Parts per billion = Micrograms per liter (ppb = ug/L)** – One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- **Not Applicable (N/A)** – Does not apply or not available.
- **Level 1 Assessment** – A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
- **Level 2 Assessment** – A very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

Detected Contaminants

WOODMEN HILLS MD routinely monitors for contaminants in your drinking water according to Federal and State laws. The following table(s) show all detections found in the period of January 1 to December 31, 2019 unless otherwise noted. The State of Colorado requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. Therefore, some of our data, though representative, may be more than one year old. Violations and Formal Enforcement Actions, if any, are reported in the next section of this report.

Note: Only detected contaminants sampled within the last 5 years appear in this report. If no tables appear in this section then no contaminants were detected in the last round of monitoring.

Disinfectants Sampled in the Distribution System						
TT Requirement: At least 95% of samples per period (month or quarter) must be at least 0.2 ppm <u>OR</u>						
If sample size is less than 40 no more than 1 sample is below 0.2 ppm						
Typical Sources: Water additive used to control microbes						
Disinfectant Name	Time Period	Results	Number of Samples Below Level	Sample Size	TT Violation	MRDL
Chlorine	December, 2019	<u>Lowest period</u> percentage of samples meeting TT requirement: 100%	0	12	No	4.0 ppm

Lead and Copper Sampled in the Distribution System								
Contaminant Name	Time Period	90 th Percentile	Sample Size	Unit of Measure	90 th Percentile AL	Sample Sites Above AL	90 th Percentile AL Exceedance	Typical Sources
Copper	07/29/2019 to 08/07/2019	0.14	20	ppm	1.3	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	07/29/2019 to 08/07/2019	1	20	ppb	15	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Disinfection Byproducts Sampled in the Distribution System									
Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Total Haloacetic Acids (HAA5)	2019	6.85	4.5 to 9.2	2	ppb	60	N/A	No	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM)	2019	23.5	16 to 31	2	ppb	80	N/A	No	Byproduct of drinking water disinfection

Radionuclides Sampled at the Entry Point to the Distribution System									
Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Gross Alpha	2019	1.61	0 to 3.46	4	pCi/L	15	0	No	Erosion of natural deposits
Combined Radium	2017	0.93	0 to 1.4	3	pCi/L	5	0	No	Erosion of natural deposits
Combined Uranium	2019	0.5	0 to 2	4	ppb	30	0	No	Erosion of natural deposits

Inorganic Contaminants Sampled at the Entry Point to the Distribution System									
Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Barium	2017	0.02	0.01 to 0.04	3	ppm	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	2017	0.56	0.28 to 0.79	3	ppm	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum

Inorganic Contaminants Sampled at the Entry Point to the Distribution System

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
									factories
Nitrate	2019	1.3	0 to 5	4	ppm	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrate-Nitrite	2019	5	5 to 5	1	ppm	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	2017	0.67	0 to 2	3	ppb	50	50	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines

Secondary Contaminants**

**Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic effects (such as skin, or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	Secondary Standard
Sodium	2017	113.37	101.4 to 121.7	3	ppm	N/A

Unregulated Contaminants***

EPA has implemented the Unregulated Contaminant Monitoring Rule (UCMR) to collect data for contaminants that are suspected to be present in drinking water and do not have health-based standards set under the Safe Drinking Water Act. EPA uses the results of UCMR monitoring to learn about the occurrence of unregulated contaminants in drinking water and to decide whether or not these contaminants will be regulated in the future. We performed monitoring and reported the analytical results of the monitoring to EPA in accordance with its Unregulated Contaminant Monitoring Rule (UCMR). Once EPA reviews the submitted results, the results are made available in the EPA's National Contaminant Occurrence Database (NCOD) (epa.gov/dwucmr/national-contaminant-occurrence-database-ncod) Consumers can review UCMR results by accessing the NCOD. Contaminants that were detected during our UCMR sampling and the corresponding analytical results are provided below.

Appendix E

WATER SUPPLY INFORMATION SUMMARY

Section 30-28-133(d), C.R.S. requires that the applicant submit to the County, "Adequate evidence that a Water supply that is sufficient in terms of quantity, quality, and dependability will be available to ensure an adequate supply of water"

1. NAME OF DEVELOPMENT AS PROPOSED		<u>Falcon Field</u>	
2. LAND USE ACTION		<u>Preliminary Plan</u>	
3. NAME OF EXISTING PARCEL AS RECORDED		<u>Unnamed</u>	
SUBDIVISION	<u>See Above</u>	FILING	<u>N/A</u>
BLOCK	<u>N/A</u>	Lot	<u>N/A</u>
4. TOTAL ACERAGE	<u>57.67</u>	5. NUMBER OF LOTS PROPOSED	<u>20</u>
PLAT MAPS ENCLOSED		<input checked="" type="checkbox"/>	
6. PARCEL HISTORY - Please attach copies of deeds, plats, or other evidence or documentation. (In submittal package)			
A. Was parcel recorded with county prior to June 1, 1972?		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
B. Has the parcel ever been part of a division of land action since June 1, 1972?		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If yes, describe the previous action <u>Mule Deer Business Park Filing No. 2</u>			
7. LOCATION OF PARCEL - Include a map delineating the project area and tie to a section corner. (In submittal)			
<u>N 1/2</u> OF		SECTION <u>7</u>	TOWNSHIP <u>13</u>
		<input type="checkbox"/> N <input checked="" type="checkbox"/> S	RANGE <u>64</u>
		<input type="checkbox"/> E <input checked="" type="checkbox"/> W	
PRINCIPAL MERIDIAN: <input checked="" type="checkbox"/> 6TH <input type="checkbox"/> N.M. <input type="checkbox"/> UTE <input type="checkbox"/> COSTILLA			
8. PLAT - Location of all wells on property must be plotted and permit numbers provided.			
Surveyors plat		<input type="checkbox"/> YES <input type="checkbox"/> NO	If not, scaled hand-drawn sketch <input type="checkbox"/> Y <input type="checkbox"/> NO <u>N/A</u>
9. ESTIMATED WATER REQUIREMENTS - Gallons per Day or Acre Foot per Year *		10. WATER SUPPLY SOURCE <u>Various</u>	
HOUSEHOLD USE #	_____ of units _____ GPD _____ AF	<input checked="" type="checkbox"/> EXISTING <input type="checkbox"/> DEVELOPED <input type="checkbox"/> NEW WELLS	Proposed Aquifers - (Check One) <input type="checkbox"/> Alluvial <input type="checkbox"/> Upper Arapahoe <input type="checkbox"/> Upper Dawson <input type="checkbox"/> Lower Arapahoe <input type="checkbox"/> Lower Dawson <input type="checkbox"/> Laramie Fox Hills <input type="checkbox"/> Denver <input type="checkbox"/> Dakota <input type="checkbox"/> Other
COMMERCIAL USE # *	<u>39.20</u> AC <u>1.412</u> AF/AC <u>55.35</u> AF	WELLS SPRING WELL PERMIT NUMBERS _____ _____	
IRRIGATION # **	_____ Acres _____ GPD _____ AF	<input type="checkbox"/> MUNICIPAL	WATER COURT DECREE CASE NUMBERS <u>503-BD</u> <u>504-BD</u> <u>505-BD</u> <u>+ Numerous WHMD determinations</u>
STOCK WATERING #	_____ of head _____ GPD _____ AF	<input type="checkbox"/> ASSOCIATION	
OTHER	_____ GPD _____ AF	<input type="checkbox"/> COMPANY	
TOTAL	<u>1.412</u> AF/AC <u>55.350</u> AF *	<input checked="" type="checkbox"/> DISTRICT	
* Assuming 0.353 AF/SFE, and 4 SFE's per acre.		NAME <u>Woodmen Hills Metropolitan District</u>	
** Irrigation accounted for in overall commercial usage.		LETTER OF COMMITMENT FOR SERVICE <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
11. ENGINEER'S WATER SUPPLY REPORT		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If yes, please forward with this form. (This may be required before our review is completed)			
12. TYPE OF SEWAGE DISPOSAL SYSTEM <u>Central Sewer</u>			
<input type="checkbox"/> SEPTIC TANK/LEACH FIELD	<input checked="" type="checkbox"/> CENTRAL SYSTEM - DISTRICT NAME: <u>Woodmen Hills Metropolitan District</u>		
<input type="checkbox"/> LAGOON	<input type="checkbox"/> VAULT - LOCATION SEWAGE HAULED TO: _____		
<input type="checkbox"/> ENGINEERED SYSTEM (Attach a copy of engineering design)	<input type="checkbox"/> OTHER: _____		

Appendix F



January 8, 2020

Falcon Field Metropolitan District
c/o White Bear Ankele Tanaka & Waldron
2154 E Commons Avenue, Suite 2000
Centennial, Colorado 80228

**Re: Water and Wastewater Commitment
Proposed *Falcon Field Subdivision***

To Whom it May Concern:

The intent of the applicant is to subdivide existing land (already included into the Woodmen Hills Metropolitan District's service area) into 20 commercial lots.

The District is already committed to serving both water and wastewater to the subdivision, and an *Inclusion and Service Agreement* was entered into in March of 2019. According to preliminary calculations, the water demand is 55.35 acre-feet/year. A calculated wastewater load is 26,970 gallons/day.

The Woodmen Hills Metropolitan District remains committed to providing water and wastewater service to the Falcon Field subdivision.

If you have any questions, please do not hesitate to call.

Sincerely,
Woodmen Hills Metropolitan District

A handwritten signature in blue ink that reads "Jerry Jacobson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Jerry Jacobson, General Manager

Cc: John P. McGinn, District Engineer

Appendix G

**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 HAGEN

AQUIFER: DENVER

DETERMINATION NO.: 505-BD

In compliance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, Peter Hagen (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 December 3, 2003.
2. The applicant requests a determination of rights to designated ground water in the Denver Aquifer (hereinafter "aquifer") underlying 54.9 acres, generally described as portions of the NW1/4 of the NE1/4 and the E1/2 of the NW1/4 of Section 7, Township 13 South, Range 64 West of the 6th Principal Meridian, in El Paso County. According to a signed statement dated July 23, 2003, the applicant owns the 54.9 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: domestic, livestock watering, irrigation, commercial, industrial, and replacement supply. The applicant's proposed place of use of the allocated ground water is the above described 54.9 acre land area.
6. The quantity of water in the aquifer underlying the 54.9 acres of land claimed by the applicant is 2,566 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 275 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 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 54.9 acres of overlying land claimed by the applicant is 25.7 acre-feet.
 9. 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.
 10. 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 54.9 acres of 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. Also, the location of the land claimed by the applicant is farther than one mile from the aquifer contact with the alluvium. The Designated Basin Rules require that at least four percent (4%) of the amount of water withdrawn annually must be returned to the uppermost aquifer in the vicinity of the permitted point or points of withdrawal.
 11. 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 54.9 acres of land claimed by the applicant is reduced to 24.7 acre-feet to allow for the annual withdrawal of a small capacity well which is completed in the aquifer, permit number 47447. 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.
 12. 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.
 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 January 30, 2004, 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 Gazette newspaper on February 12 and 19, 2004.
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 54.9 acres of land, generally described as portions of the NW1/4 of the NE1/4 and the E1/2 of the NW1/4 of Section 7, Township 13 South, Range 64 West of the 6th Principal Meridian, is approved subject to the following conditions:

19. The allocated average annual amount of ground water to be withdrawn from the aquifer shall not exceed 24.7 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 allocated 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. At least four percent (4%) of the amount of water withdrawn annually must be returned to the uppermost aquifer in the vicinity of the permitted point or points of withdrawal.

22. The use of ground water from this allocation shall be limited to the following uses: domestic, livestock watering, irrigation, commercial, industrial, and replacement supply. The place of use shall be limited to the above described 54.9 acre land area.
23. 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 54.9 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.
24. Subject to the above conditions, well permits for wells to withdraw the authorized 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 54.9 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. The wells may withdraw the allowed average annual amount of water from the aquifer together in any combination. The total combined annual withdrawal of the wells shall not exceed the allowed average annual amount described in this Order.
 - f. 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 Creek Ground Water Management District upon their request.
 - g. 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.

Applicant: Peter Hagen
Denver Aquifer
Determination No.: 505-BD

Page 5

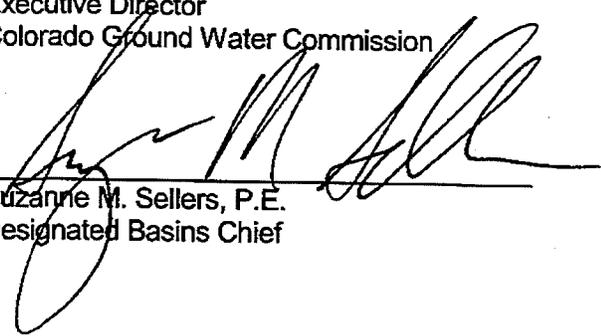
25. A copy of this Findings and Order shall be recorded by the applicant in the public records of the county – in which the claimed overlying land is located - so that a title examination of the above described 54.9 acre overlying land area, or any part thereof, shall reveal the existence of this determination.

Dated this 15th day of June, 2004.



Hal D. Simpson
Executive Director
Colorado Ground Water Commission

By:



Suzanne M. Sellers, P.E.
Designated Basins Chief

Prepared by: EBT

FIND-114-04

EXHIBIT A

Page 1 of 6

GWS-1 (Rev, Sept 1996)

RECEIVED

STATE OF COLORADO
OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RESOURCES

AUG 11 2003

WATER RESOURCES
STATE ENGINEER
CCLO.

RECEIVED

DEC 03 2003

NONTRIBUTARY GROUND WATER LANDOWNERSHIP STATEMENT

I (we) Peter Hagen

(Name)

WATER RESOURCES
STATE ENGINEER
COLO.

claim and say that I (we) am (are) the owner(s) of the following described property consisting of 54.9 acres in the County of El Paso, State of Colorado:

See Attached Legal Description And Map

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

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



(Signature)

7-23-03

(Date)

(Signature)

(Date)

INSTRUCTIONS:

Please type or print neatly in black ink. This form may be reproduced by photocopy or word processing means. See additional instructions on back.

 * Prepared by: C&G SALESTEAM BLOCK 30089
 * Routine: Area Summary Coord File MCLARTY.CRD 11/06/03 8:28:42
 * Input Scale Factor: 1.000000 Output Scale Factor: 1.000000
 *-----

Original Legal of Property

Pt.No.	Angle-Right	Bearing	Distance	Pt.No.
3339		N 00°10'06"W	857.49	3326
3326	91°01'57"	N 89°08'09"W	1071.46	3327
3327	246°47'50"	N 22°20'19"W	219.73	3328
3328	68°44'03"	S 46°23'44"W	760.22	3329

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WATER RESOURCES
 STATE ENGINEER
 COLO.

CURVE DEF: Arc
 RAD: 5800.00
 CHORD: 371.76
 SEG: 738

LEN: 371.82
 MO: 2.98
 TRI: 1077540

TAN: 185.97
 EXT: 2.98

CURVE DIR: CW
 CEN. ANG: 3°40'23"
 DEGREE: 0°59'16"
 SEC: 1078278

3329	270°00'00"	N 43°36'16"W	5800.00	3330
3330	3°40'23"	S 39°55'53"E	5800.00	3331
3329	181°50'11"	S 48°13'55"W	371.76	3331
3331	181°50'12"	S 50°04'07"W	125.38	3332
3332	130°10'00"	S 00°14'07"W	1475.79	3333
3333	89°40'00"	N 89°54'07"E	430.08	3334
3334	90°30'59"	N 00°25'06"E	67.53	3335
3335	265°37'03"	N 86°02'09"E	327.53	3336
3336	94°43'18"	N 00°45'27"E	1185.35	3337
3337	270°10'00"	S 89°04'33"E	12.40	3338
3338	180°09'37"	S 88°54'56"E	1302.18	3339
Pt.No.	Angle-Right	Bearing	Distance	Pt.No.

EXHIBIT A

Page 2 of 6

Perimeter: 8206.96 Accum.Perimeter: 8206.96

Sq. Feet: 2512834 Acres: 57.69

Accum. - Sq. Feet: 2512834 Acres: 57.69

Handwritten notes:
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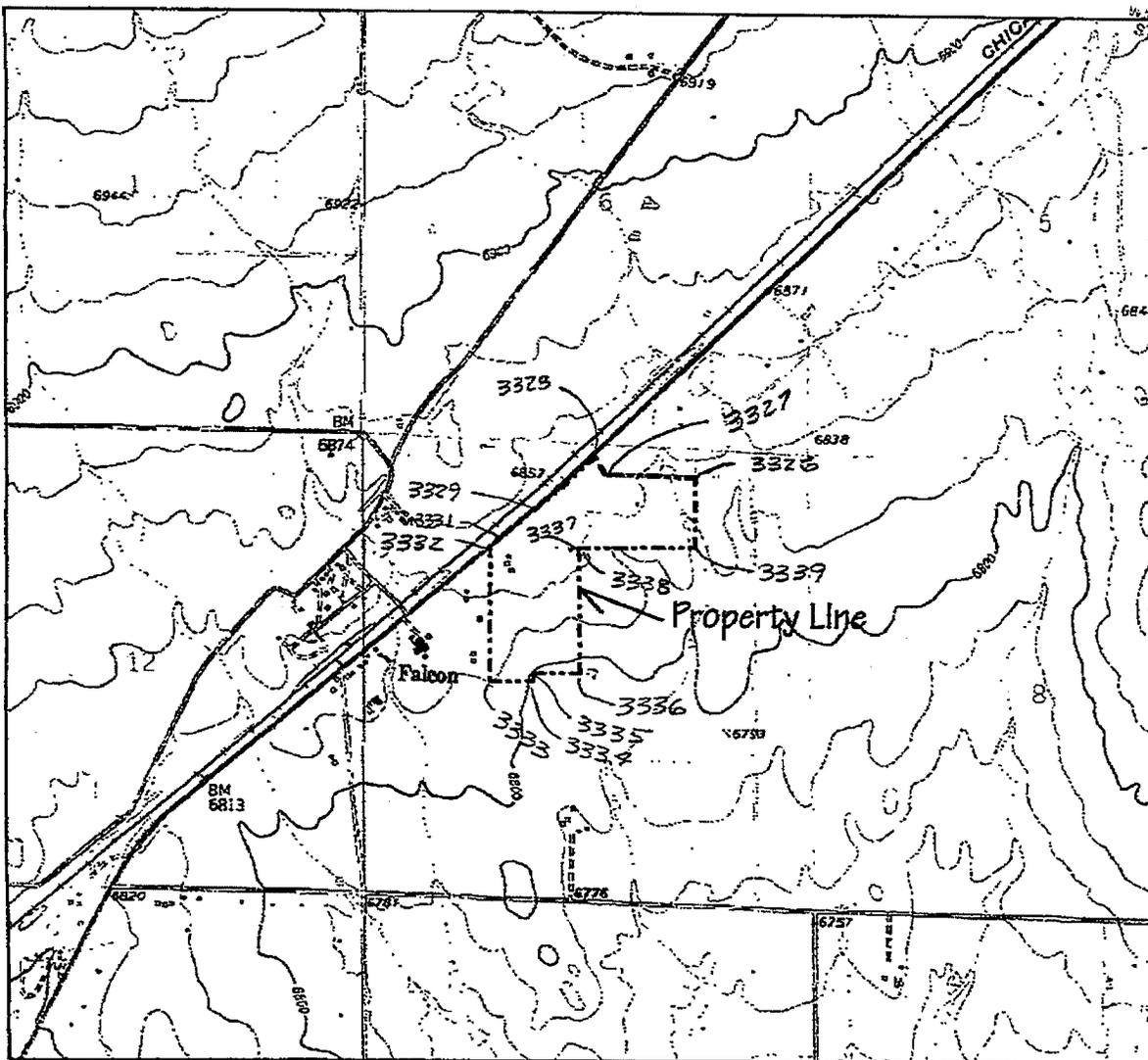
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WATER RESOURCES
STATE ENGINEER
COLO

R 65 W R 64 W

T 13 S



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EXHIBIT A

Page 3 of 6

Location Map

Wm Curtis Wells & Co.
consulting ground water geologists



Scale 1" = 2000'

Figure 1

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WELCH RESOURCES
STATE ENGINEER
COLO.

North
No Scale

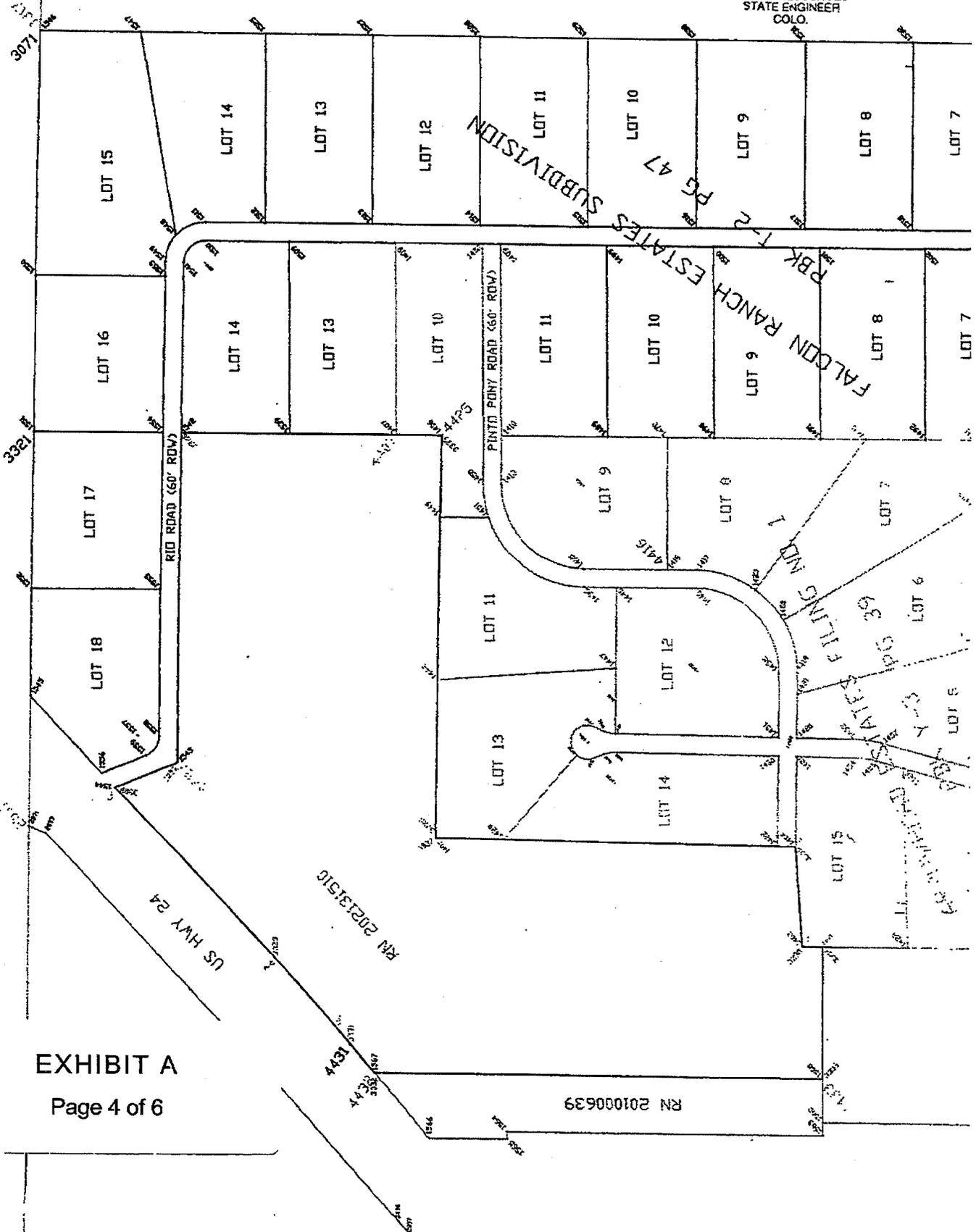


EXHIBIT A

Page 4 of 6

RN 201000639

RN 2021310

DEC 03 2003

**DIVISION OF WATER RESOURCES
STATE OF COLORADO**

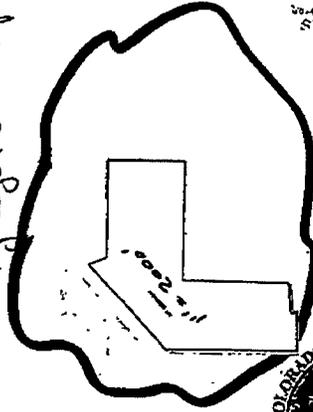
Receipt Number 513943
Applicant Hagen, Peter

Section 7
Township 13 S
Range 64 W
Meridian S

Area acres

*suggested property
boundary from
application diagram*

*possible property
boundary described
by legal description*



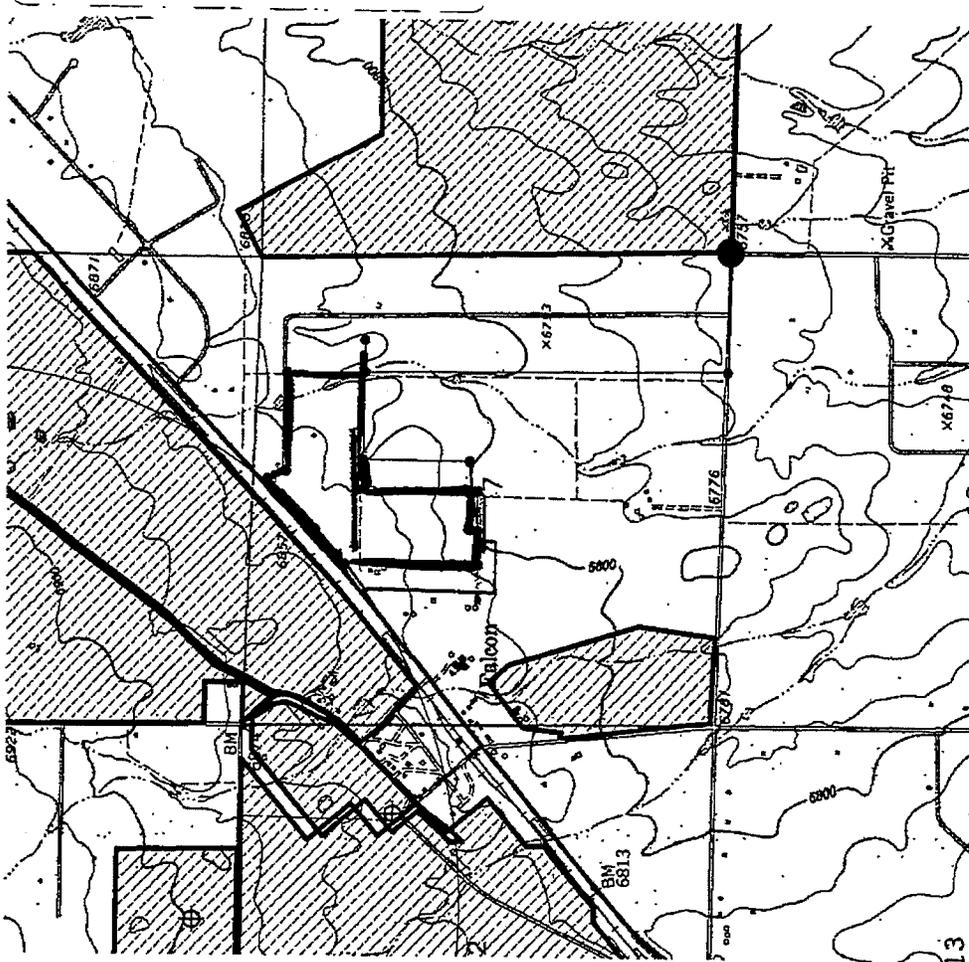
STATE ENGINEER
DIVISION OF WATER RESOURCES
STATE OF COLORADO

Office of the State Engineer
Division of Water Resources
Department of Natural Resources



EXHIBIT A

Page 5 of 6



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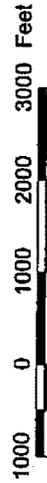




EXHIBIT A

Page 6 of 6

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LETTER OF TRANSMITTAL

WATER RESOURCES
STATE ENGINEER
COLO

To: OFFICE OF STATE ENGINEER Date: 11-24-03
Division of Water Resources Project No: 6074A
1313 Sherman Street Room 818 Project: McLarty
Denver, CO 80203 Ranch

Attn: Eric B. Thoman

We are sending you attached, _____ under separate cover, the following items:

- Original Water Right Applications - Site Maps RESKETCHED
(12 SHTS w/ your Cover letter)
- 1 - Closure SHT for legal
- 1 - Plot of legal w/ surrounding Subdivisions
- 1" = 2000' Plot of Property
- Copy Figure 1 w/ Coordinate Point Numbers
- 1 - Your Copy of your plot (Redded in Correct Plot)

These are transmitted:

Per your request _____ Per the request of _____

For Approval _____ For Your Records _____ Other _____

Remarks: Eric - The legal closes and we have included
back up data. Please continue the processing.

Date (Picked Up) (Delivered) (Mailed) (Faxed): C ✓

By: Chuck Crum Received By: _____

**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 HAGEN

AQUIFER: LARAMIE-FOX HILLS

DETERMINATION NO.: 503-BD

In compliance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, Peter Hagen (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 December 3, 2003.
2. The applicant requests a determination of rights to designated ground water in the Laramie-Fox Hills Aquifer (hereinafter "aquifer") underlying 54.9 acres, generally described as portions of the NW1/4 of the NE1/4 and the E1/2 of the NW1/4 of Section 7, Township 13 South, Range 64 West of the 6th Principal Meridian, in El Paso County. According to a signed statement dated July 23, 2003, the applicant owns the 54.9 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: domestic, livestock watering, irrigation, commercial, industrial, and replacement supply. The applicant's proposed place of use of the allocated ground water is the above described 54.9 acre land area.
6. The quantity of water in the aquifer underlying the 54.9 acres of land claimed by the applicant is 1,812 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 220 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 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 54.9 acres of overlying land claimed by the applicant is 18.1 acre-feet.
 9. 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.
 10. 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 54.9 acres of 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.
 11. 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.
 12. 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.
 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 January 30, 2004, 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 Gazette newspaper on February 12 and 19, 2004.
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 54.9 acres of land, generally described as portions of the NW1/4 of the NE1/4 and the E1/2 of the NW1/4 of Section 7, Township 13 South, Range 64 West of the 6th Principal Meridian, is approved subject to the following conditions:

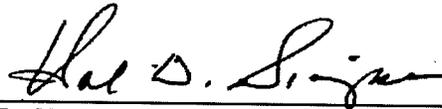
19. The allocated average annual amount of ground water to be withdrawn from the aquifer shall not exceed 18.1 acre-feet. The allowed maximum annual amount of withdrawal may exceed the allowed average annual amount of withdrawal as long as the total volume of water withdrawn does not exceed the product 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 allocated 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. 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.
22. The use of ground water from this allocation shall be limited to the following uses: domestic, livestock watering, irrigation, commercial, industrial, and replacement supply. The place of use shall be limited to the above described 54.9 acre land area.

23. 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 54.9 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.
24. Subject to the above conditions, well permits for wells to withdraw the authorized 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 54.9 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. The wells may withdraw the allowed average annual amount of water from the aquifer together in any combination. The total combined annual withdrawal of the wells shall not exceed the allowed average annual amount described in this Order.
 - f. 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 Creek Ground Water Management District upon their request.
 - g. 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.
25. 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 54.9 acre overlying land area, or any part thereof, shall reveal the existence of this determination.

Applicant: Peter Hagen
Laramie-Fox Hills Aquifer
Determination No.: 503-BD

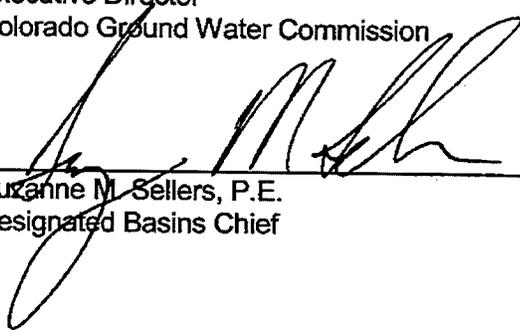
Page 5

Dated this 15th day of June, 2004.



Hal D. Simpson
Executive Director
Colorado Ground Water Commission

By:



Suzanne M. Sellers, P.E.
Designated Basins Chief

Prepared by: EBT

FIND-112-04

EXHIBIT A

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Page 1 of 6

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OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RESOURCES

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STATE ENGINEER
COLO.

AUG 11 2003

WATER RESOURCES
STATE ENGINEER
COLO.

NONTRIBUTARY GROUND WATER LANDOWNERSHIP STATEMENT

I (we) Peter Hagen

(Name)

claim and say that I (we) am (are) the owner(s) of the following described property consisting of 54.9 acres in the County of El Paso, State of Colorado:

See Attached Legal Description And Map

and, that the ground water sought to be withdrawn from the Laramie Fox Hills aquifer underlying the above-described land has not been conveyed or reserved to another, nor has consent been given to it's withdrawal by another.

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(Signature)

7-23-03

(Date)

(Signature)

(Date)

INSTRUCTIONS:

Please type or print neatly in black ink. This form may be reproduced by photocopy or word processing means. See additional instructions on back.

* Prepared by: C&G SALESTEAM BLOCK 30089
 * Routine: Area Summary Coord File MCLARTY.CRD 11/06/03 8:28:42
 * Input Scale Factor: 1.000000 Output Scale Factor: 1.000000

RECEIVED

Original Legal of Property

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DEC 03 2003

WATER RESOURCES
 STATE ENGINEER
 COLO.

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3338	180°09'37"	S 88°54'56"E	1302.18	3339
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EXHIBIT A

Page 2 of 6

Perimeter: 8206.96 Accum.Perimeter: 8206.96

Sq. Feet: 2512834 Acres: 57.69
 Accum. - Sq. Feet: 2512834 Acres: 57.69

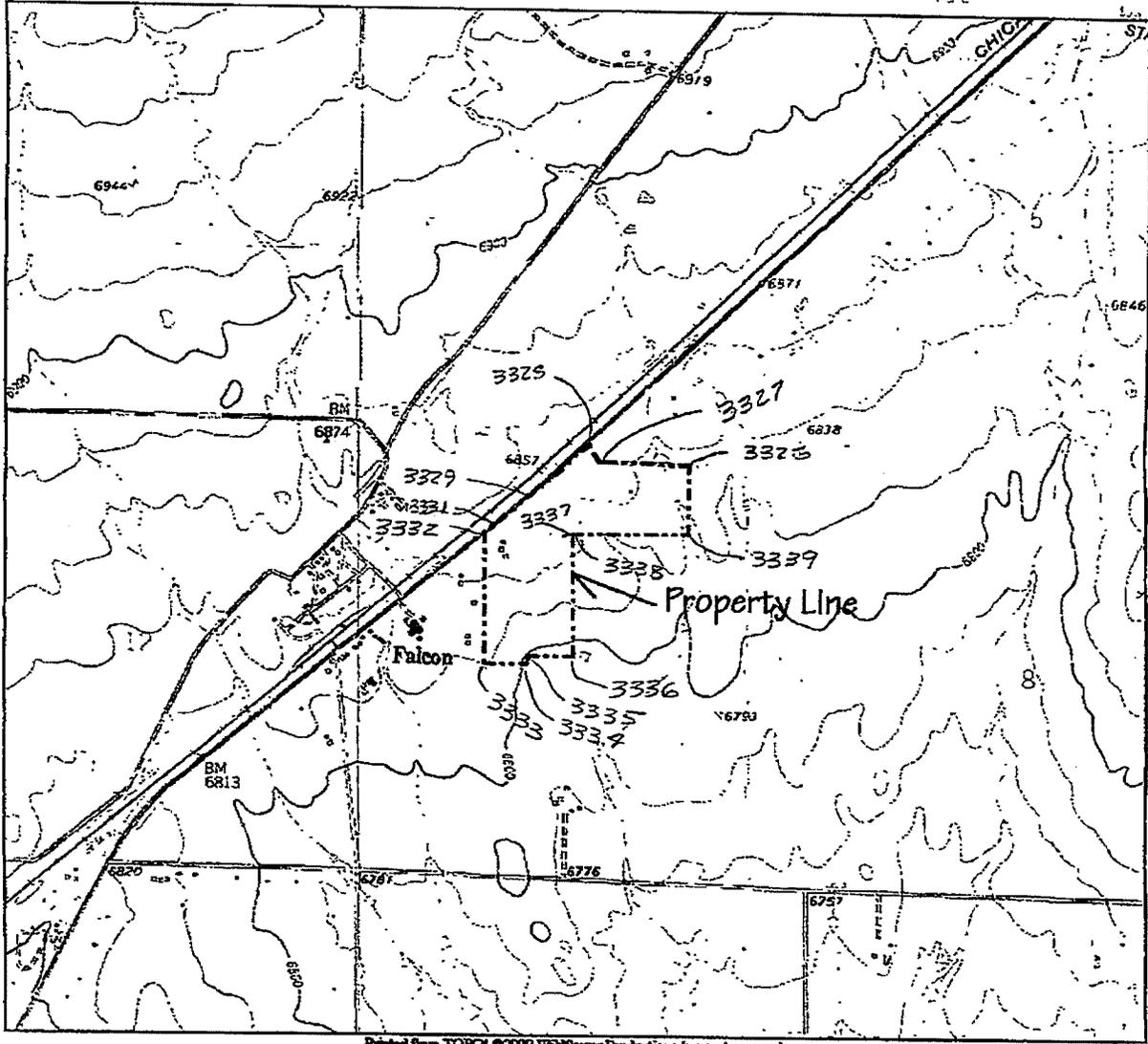
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R 65 W R 64 W

T 13 S



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EXHIBIT A

Page 3 of 6

Location Map

Wm Curtis Wells & Co.
consulting ground water geologists

N

Scale 1" = 2000'

Figure 1

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WATER RESOURCES
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COLO.

North
No Scale

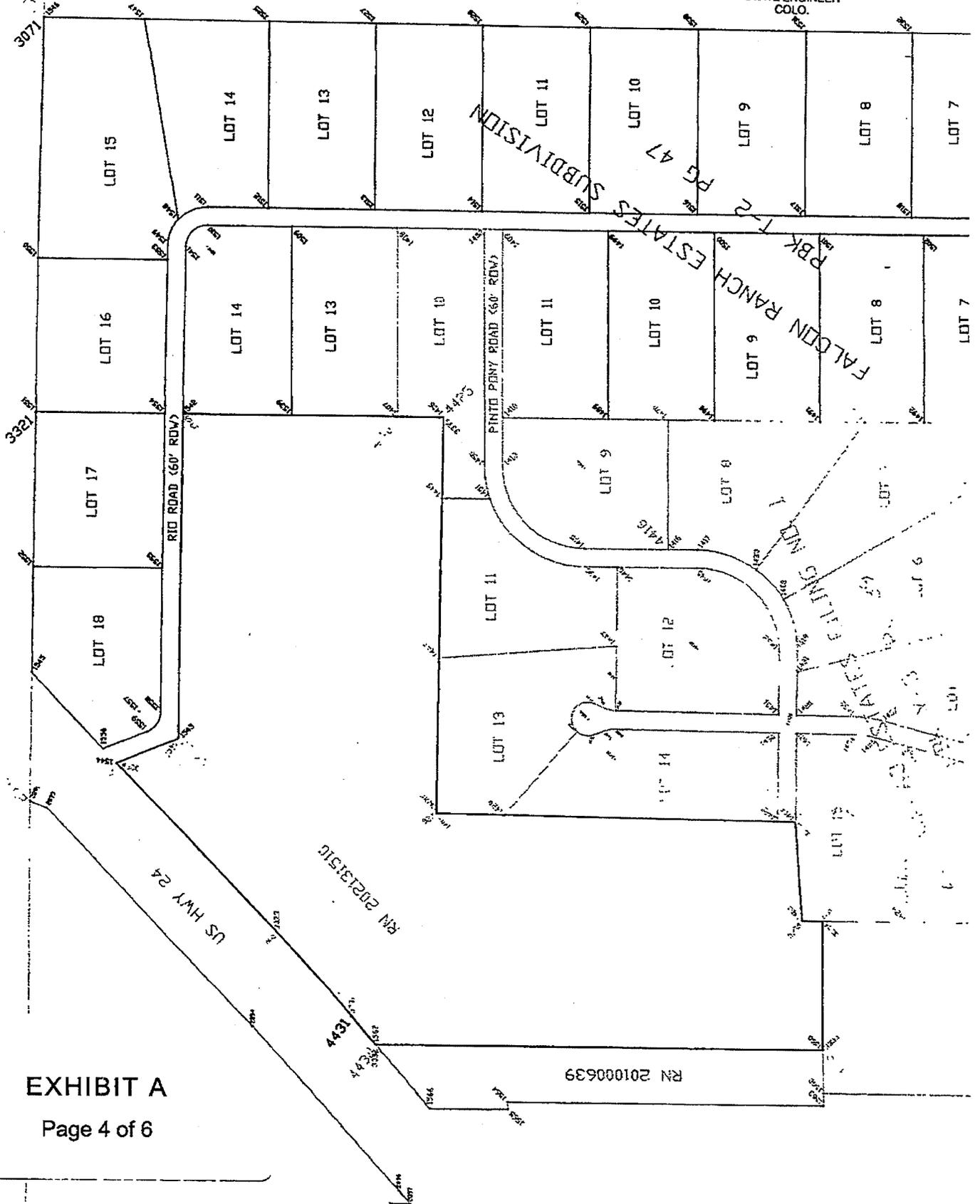


EXHIBIT A
Page 4 of 6

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**DIVISION OF WATER RESOURCES
STATE OF COLORADO**

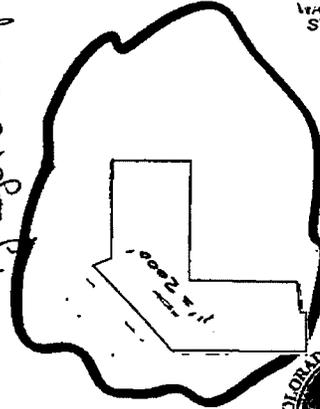
Receipt Number 513943
Applicant Hagen, Peter

Section 7
Township 13 S
Range 64 W
Meridian S

Area acres

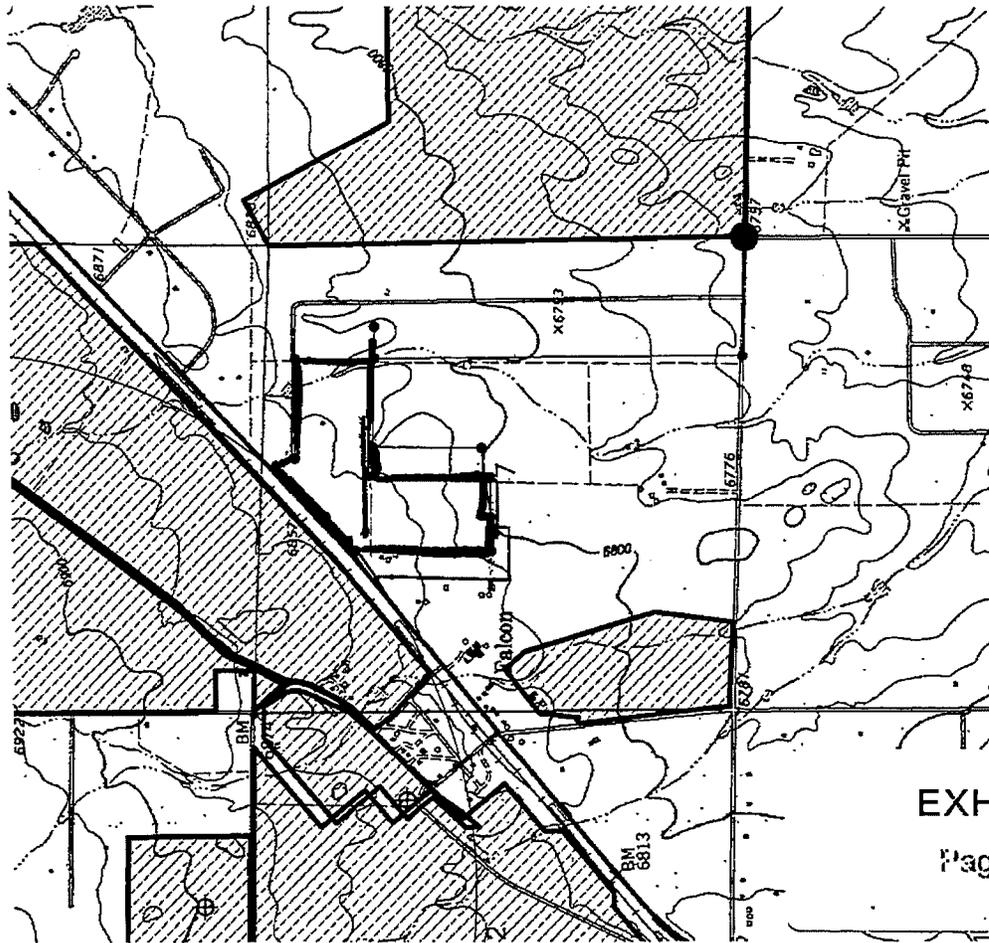
— suggested property
boundary from
application diagram

— possible property
boundary described
by legal description



WATER RESOURCES
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Office of the State Engineer
Division of Water Resources
Department of Natural Resources



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EXHIBIT A
Page 5 of 6



EXHIBIT A

Page 6 of 6

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LETTER OF TRANSMITTAL

WATER RESOURCES
STATE ENGINEER
COLO

To: OFFICE OF STATE ENGINEER

Date: 11-24-03

Division of Water Resources

Project No: 6074A

1313 Sherman Street Room 818

Project: McLarty

Denver, CO 80203

Ranch

Attn: Eric B. Thoman

We are sending you X attached, _____ under separate cover, the following items:

Original Water Right Applications - SITE MAPS RESKETCHED
(12 SHTS w/ your cover letter)

1- Closure SHT for legal

1- Plot of legal w/ surrounding subdivisions

1" = 2000' Plot of Property

Copy Figure 1 w/ Coordinate Point Numbers

1- Your Copy of your plot (Redded in correct plot)

These are transmitted:

Per your request _____ Per the request of _____

For Approval _____ For Your Records _____ Other _____

Remarks: Eric - The legal closes and we have included
back up data. Please continue the processing.

Date (Picked Up) (Delivered) (Mailed) (Faxed): C ✓

By: Chuck Crum

Received By: _____

**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 HAGEN

AQUIFER: ARAPAHOE

DETERMINATION NO.: 504-BD

In compliance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, Peter Hagen (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 December 3, 2003.
2. The applicant requests a determination of rights to designated ground water in the Arapahoe Aquifer (hereinafter "aquifer") underlying 54.9 acres, generally described as portions of the NW1/4 of the NE1/4 and the E1/2 of the NW1/4 of Section 7, Township 13 South, Range 64 West of the 6th Principal Meridian, in El Paso County. According to a signed statement dated July 23, 2003, the applicant owns the 54.9 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: domestic, livestock watering, irrigation, commercial, industrial, and replacement supply. The applicant's proposed place of use of the allocated ground water is the above described 54.9 acre land area.
6. The quantity of water in the aquifer underlying the 54.9 acres of land claimed by the applicant is 1,633 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 175 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 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 54.9 acres of overlying land claimed by the applicant is 16.3 acre-feet.
 9. 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.
 10. 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 54.9 acres of 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.
 11. 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.
 12. 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.
 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 January 30, 2004, 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 Gazette newspaper on February 12 and 19, 2004.
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 54.9 acres of land, generally described as portions of the NW1/4 of the NE1/4 and the E1/2 of the NW1/4 of Section 7, Township 13 South, Range 64 West of the 6th Principal Meridian, is approved subject to the following conditions:

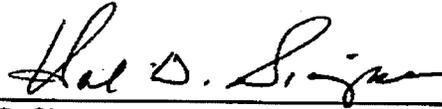
19. The allocated average annual amount of ground water to be withdrawn from the aquifer shall not exceed 16.3 acre-feet. The allowed maximum annual amount of withdrawal may exceed the allowed average annual amount of withdrawal as long as the total volume of water withdrawn does not exceed the product 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 allocated 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. 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.
22. The use of ground water from this allocation shall be limited to the following uses: domestic, livestock watering, irrigation, commercial, industrial, and replacement supply. The place of use shall be limited to the above described 54.9 acre land area.

23. 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 54.9 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.
24. Subject to the above conditions, well permits for wells to withdraw the authorized 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 54.9 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. The wells may withdraw the allowed average annual amount of water from the aquifer together in any combination. The total combined annual withdrawal of the wells shall not exceed the allowed average annual amount described in this Order.
 - f. 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 Creek Ground Water Management District upon their request.
 - g. 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.
25. 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 54.9 acre overlying land area, or any part thereof, shall reveal the existence of this determination.

Applicant: Peter Hagen
Arapahoe Aquifer
Determination No.: 504-BD

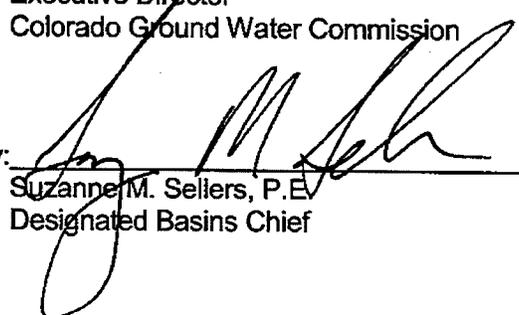
Page 5

Dated this 15th day of June, 2004.



Hal D. Simpson
Executive Director
Colorado Ground Water Commission

By:



Suzanne M. Sellers, P.E.
Designated Basins Chief

Prepared by: EBT

FIND-113-04

EXHIBIT A

Page 1 of 6

GWS-1 (Rev, Sept 1996)

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OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RESOURCES

AUG 11 2003

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DEC 03 2003

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NONTRIBUTARY GROUND WATER LANDOWNERSHIP STATEMENT

I (we) Peter Hagen

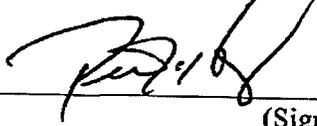
(Name)

claim and say that I (we) am (are) the owner(s) of the following described property consisting of 54.9 acres in the County of El Paso, State of Colorado:

See Attached Legal Description And Map

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

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

 7-23-03
(Signature) (Date)

(Signature) (Date)

INSTRUCTIONS:

Please type or print neatly in black ink. This form may be reproduced by photocopy or word processing means. See additional instructions on back.

 * Prepared by: C&G SALESTEAM BLOCK 30089
 * Routine: Area Summary Coord File MCLARTY.CRD 11/06/03 8:28:42
 * Input Scale Factor: 1.000000 Output Scale Factor: 1.000000

Original Legal of Property

Pt.No.	Angle-Right	Bearing	Distance	Pt.No.
3339		N 00°10'06"W	857.49	3326
3326	91°01'57"	N 89°08'09"W	1071.46	3327
3327	246°47'50"	N 22°20'19"W	219.73	3328
3328	68°44'03"	S 46°23'44"W	760.22	3329

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DEC 03 2003

WATER RESOURCES
 STATE ENGINEER
 COLO.

CURVE DEF: Arc
 RAD: 5800.00
 CHORD: 371.76
 SEG: 738

LEN: 371.82
 MO: 2.98
 TRI: 1077540

CURVE DIR: CW
 CEN. ANG: 3°40'23"
 DEGREE: 0°59'16"

SEC: 1078278

3329	270°00'00"	N 43°36'16"W	5800.00	3330
3330	3°40'23"	S 39°55'53"E	5800.00	3331
3329	181°50'11"	S 48°13'55"W	371.76	3331
3331	181°50'12"	S 50°04'07"W	125.38	3332
3332	130°10'00"	S 00°14'07"W	1475.79	3333
3333	89°40'00"	N 89°54'07"E	430.08	3334
3334	90°30'59"	N 00°25'06"E	67.53	3335
3335	265°37'03"	N 86°02'09"E	327.53	3336
3336	94°43'18"	N 00°45'27"E	1185.35	3337
3337	270°10'00"	S 89°04'33"E	12.40	3338
3338	180°09'37"	S 88°54'56"E	1302.18	3339
Pt.No.	Angle-Right	Bearing	Distance	Pt.No.

EXHIBIT A

Page 2 of 6

Perimeter: 8206.96 Accum.Perimeter: 8206.96

Sq. Feet: 2512834 Acres: 57.69

Accum. - Sq. Feet: 2512834 Acres: 57.69

[Handwritten signature]

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STATE ENGINEER
COLO.

North
No Scale

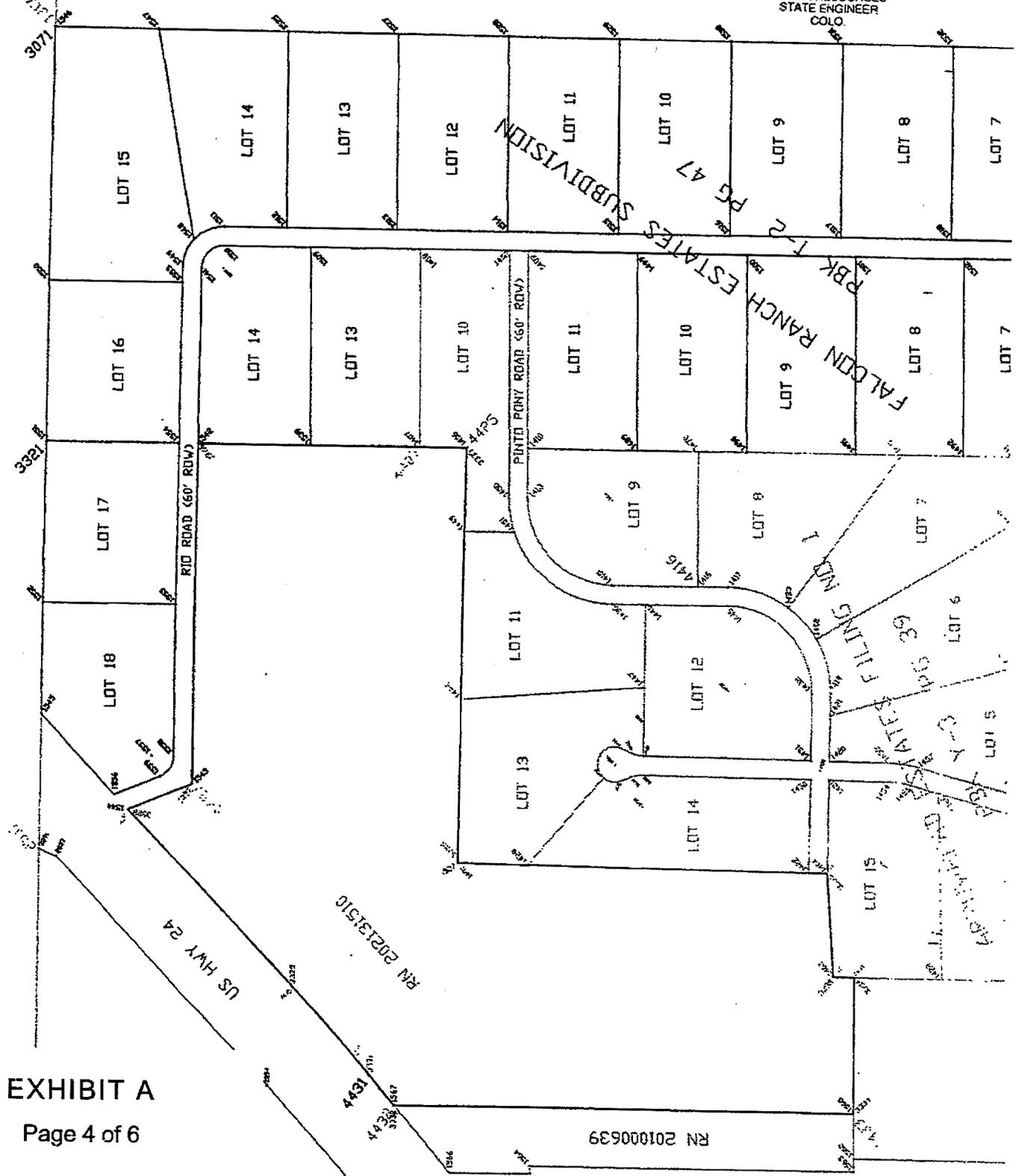


EXHIBIT A
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RN 2021310

RN 20100639

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**DIVISION OF WATER RESOURCES
STATE OF COLORADO**

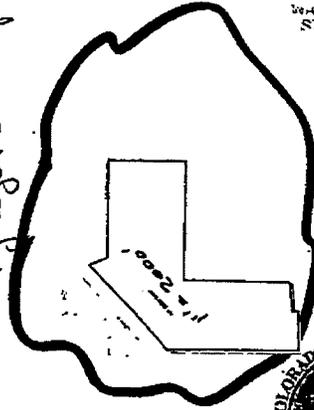
Receipt Number 513943
Applicant Hagen, Peter

Section 7
Township 13 S
Range 64 W
Meridian S

Area acres

suggested property
boundary from
application diagram

Possible property
boundary described
by legal description



WATER RESOURCES
STATE ENGINEERS
COL.

Office of the State Engineer
Division of Water Resources
Department of Natural Resources



1:24000

1000 0 1000 2000 3000 Feet

0.2 0 0.2 0.4 0.6 0.8 Miles

EXHIBIT A

Page 5 of 6



EXHIBIT A

Page 6 of 6

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DEC 03 2003

LETTER OF TRANSMITTAL

WATER RESOURCES
STATE ENGINEER
COLO

To: OFFICE OF STATE ENGINEER

Date: 11-24-03

Division of Water Resources

Project No: 60744

1313 Sherman Street Room 818

Project: McFarly

Denver, CO 80203

Ranch

Attn: Eric B. Thoman

We are sending you K attached, _____ under separate cover, the following items:

Original Water Right Applications - SITE MAPS RESKETCHED
(12 SHTS w/ your cover letter)

1 - Closure SHT for legal

1 - Plot of Legal w/ surrounding Subdivisions

1" = 2000' Plot of Property

Copy Figure 1 w/ Coordinate Point Numbers

1 - Your Copy of your plot (Redded in Correct Plot)

These are transmitted:

Per your request _____ Per the request of _____

For Approval _____ For Your Records _____ Other _____

Remarks: Eric - The legal closes and we have included
back up data. Please continue the processing.

Date (Picked Up) (Delivered) (Mailed) (Faxed): C ✓

By: Chuck Crum

Received By: _____