In early spring of this year 2018 my water got rust color + had an oder like oil. I had to boil my water + filter it so I could use it.

Sue Boss
Edgar, Mt.

June 17, 2018

Our well in Edgar was drilled in 1973. On early spring months I have called Paul Steinmetz of Aqua Drilling in Joliet to check our well and he assures me that the water will come up when the farmers irrigate in the spring.

Debby L. Elton

June 14, 2018

I remember attending Edgar Elementary Grade school in the 1980's when we were not allowed to drink the water because of nitrate contamination from the fields that are south and west of the school.

Also, I remember the test wells that still being monitored.

James L Estes

June 14, 2018

I remember in the 1980's when I was staying at my grandparents, in Edgar where Denise Maas currently lives, that we would have sand in our water when it was low in the winter.

Jayne L Eller

Statement of George Werhonig, 116 Clark Street, Edgar, Montana.

We have had problems with low water tables at times in late spring or early summer. My wife on different occasions had to run a garden hose to a neighbor to get water until they also ran out of water. Our draw pipe is as close to the bottom as we can get without sucking sand.

6-10-18

Statement of Nevins Harding
PO BOX 64
Edgar, Montana 59026

This is in regard to the Windmill312 proposed subdivision.
During the spring in many years, my well sucks air because of the lack of ground water level. The draw pipe has been lowered as far as possible. I manage by limiting water use until the irrigation ditches begin to run and then the water level comes up. I am on the north east corner of town and the rest of the town gets first access to the ground water.

Nevins Harding
06/18/2018

NEVINS HARDING
PO BOX 64
EDGAR, MONTANA
406 671 4725
nevinsharding@hotmail.com

Introduction

I am opposed to the Windmill Farms subdivision if they drill into the limited aquifer that feeds the Edgar shallow wells. Further, I am opposed to the establishment of septic leach fields. The objection is based on the town site of Edgar having a catastrophic salmonella, shigellia, and e coli contamination from Septic tanks in the early 1960's. This resulted in the building of the Edgar sewage system completed in 1967.

History

Edgar is a sleepy 1950's style town sitting on the original Bozeman Trail. Here the residents watch out for each other. The most notable excitement was the bank robbery around 70 years ago and the cows belonging to the Antler Ranch loose in town as they drove the cows to the stockyards at Edgar from the Crow Reservation. The town site of Edgar was founded around 1903 when JJ Thornton purchased land from Christain Deeg, the original patent holder. Thornton's house, the house I live in, was finished in 1905. My father came through here in 1919 but did not stay. Thornton then subdivided the original town site into 25 foot wide lots. Water was developed by hand dug shallow wells and rain cisterns. Then starting in the 1940's Bill Sheller, using a cable tool drilled shallow wells throughout the town site. My well was drilled in 1943 and had a hand pump on it initially. During the 1950's people changed to indoor toilets and water piping. This necessitated cesspools and septic tanks with leach fields. In the 1960's the very old and very young developed intestinal illnesses that was traced to bacterial contamination in the wells, caused by the leach fields. The residents formed a sewer district that was completed in 1967. The problem was solved.**However, historically, many of us experience water shortages in our wells during April and May depending on the year.**

GROUND WATER FLUCTUATIONS AS RECORDED BY THE BUREAU OF MINES AND MONTAN TECH

Shown is the first graph provided by research hydrologist Shawn Kuzara with the Montana Bureau of Mines. **(EXHIBIT A)** The recording transponder is in a well on the Wetstien farm, just across the road from the Windmill312 proposed development. It shows a 9 foot swing in water depth during a calendar year with minimum water level in April and May of the year shown 2017, the latest data available. Years ago, the Tschida, and later, the Baker families, who were residents in the house, discussed with me the water shortage in the spring from that well.

The second graph is from a well monitored by Montana Tech. (**EXHIBIT B)** This well is on the boundary between the old school property and the Windmill312 proposed subdivision and placed in the groundwater flow several hundred feet directly south west of the school water well. It was placed to monitor nitrates that might be coming from the fields. Nearly 1000 readings of water level have been made and the data can be accessed by going to the site at the top of the graph. The graph confirms the annual fluctuations of water depth over the period from 03/15/1991 to the most recent 05/23/2018.

The Edgar water flows from basically the south west to the north east as shown on the accompaning US Geological map. There is a discussion, taken from the map, to explain how elevation causes hydraulic pressure to effect the direction of flow. **(EXHIBITS C,D)**

CHANGES IN THE GROUND WATER AT AND NEAR TO THE PROPOSED SUBDIVISION (EXHIBITS E,F)

Two large farm fields to the west and south west of the town site of Edgar have recently installed sprinkler irrigation and no longer flood irrigate those fields. This reduces their contribution to the aquifer which they previously provided.

Windmill312, on December 19, 2017, transferred the water rights from the sellers on the two wells on this 67 acre parcel, called the Gradwohl Place from which this subdivision is created. The refiled the water rights on the Gradwohl water rights were increased from 4.200 gallons(1962 filing) and 72,000 gallons(1947 filing) to 814,628 gallons and 472,484 gallons, respectively, all gallons per year. A total of 1,287,112 gallons per year and an increase of **1,205,912 gallons** per year.

The proposed subdivision claims to extract 10 acre feet from the ground water by shallow wells. This is **3,258,510 gallons** for house hold use.
The problem with this claimed usage is that it understates the potential actual usage. The ditches here go on usually around May 15 and off around October 8. So those lot owners will need to use well water to water their lawns before that and after that(warm springs, April and May, and falls into November). Sometimes the watering season starts in April and ends in November depending on the year. If a lot owner of a one acre lot has bought turf locally at a cost of $8600, he will not want to see that go to waste. Further the ditch water during the summer is not always available to Windmill312, because they have a 1898 water right which is at the bottom of the totem poll. They have Cooney dam water, but getting it with that water right is problematic because they have a low priority for ditch usage. So the buyers will use well water because irrigation water is not available or it will be more convenient than tapping a yet unrevealed system of getting the ditch water around the subdivision. This is difficult to estimate, but the DNRC indicated that it may take 488,776 gallons of well water per acre lot if ditch water is not available or a total 6,354,088 for the 20 acres, worst case scenario. This is another 19.5 acre feet on top of the proposed draw of 10 acre feet. This is catastrophic for us in the town site, because any unusual small draw reflects in our wells.

PROPOSED SOLUTION

In Billings with some of the most prestigious homes, cisterns and sewage containment tanks are used. I work on these houses and gated communities so I know their solutions to no water source and no leach fields. This solution would satisfy our proven concerns about the impact on our water quantity and quality. Here in Edgar, the fertilizer plant accumulates their sewage in a containment tank and hauls it to Billings, Water and water haulers are available in Fromberg, six miles away. Another advantage to cisterns is that it would augment, to the proposed cisterns, the available water for fire fighting.
Alternative well sources would be to drill deep wells either 5 miles west of Edgar or 10 miles East according to the "Groundwater Inventory, Carbon County, Montana". A copy of page 34 is attached and the entire document is available on line.

There is no available aquifer before the 3500 foot level. Other wells have been drilled locally to the 80 foot level and found no water, so the casing were breached at 22 feet to allow ground water to enter the casing.

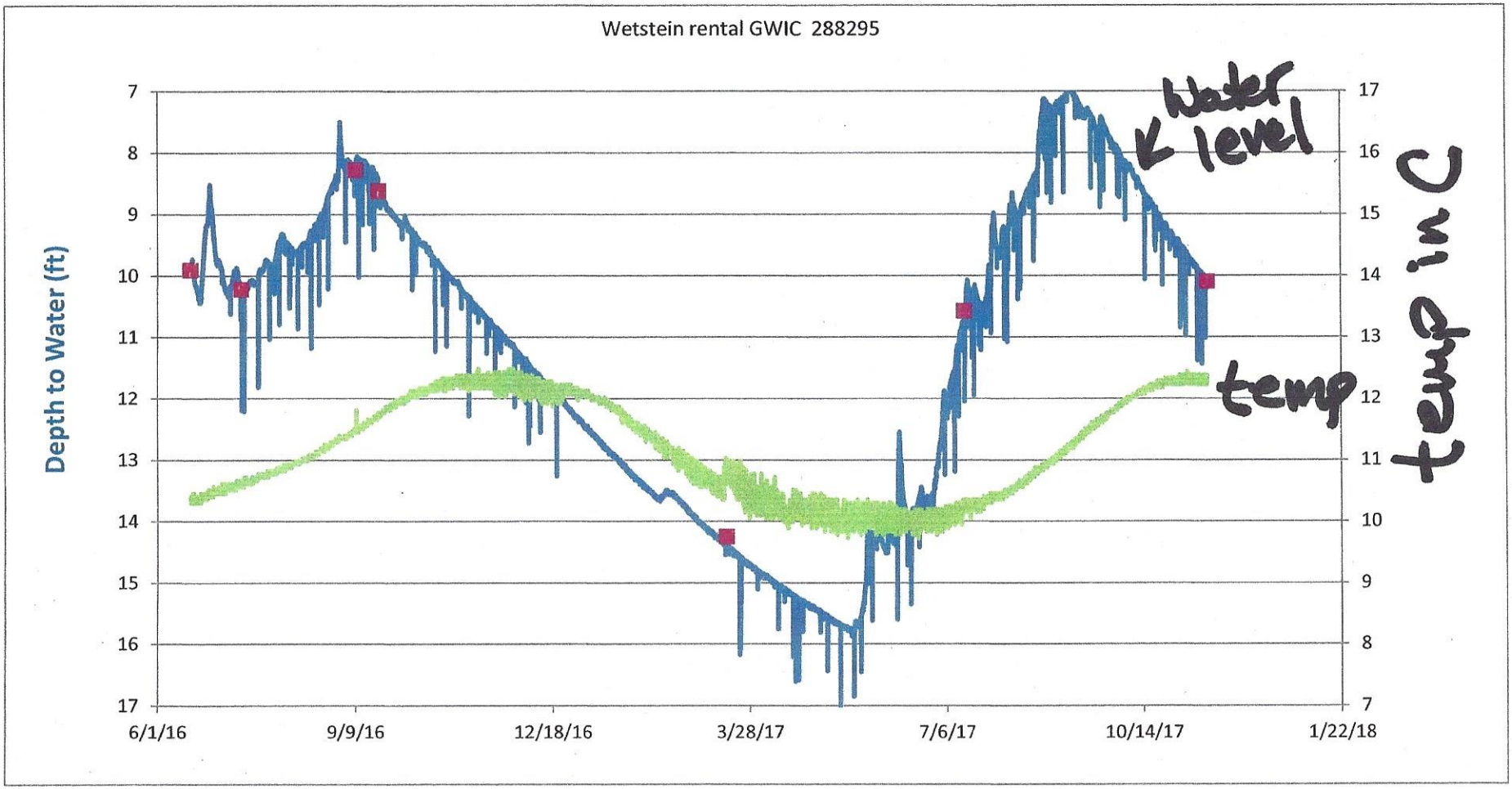
OTHER CONCERNS:

I deal with HOA groups daily so do understand that many of the commitments made in this subdivision proposal can be changed by the HOA when the new owners are situated. This is a concern

I had called Bruce Tonn at 8:33 AM on May 31, 2018 and we discussed for 15 minutes the concerns that I had regarding the subdivision. He advised me that he did not receive emails and asked that I convey documents to his engineer. I sent a email announcement of a meeting in Edgar to the engineer and invited him. Apparently, on June 8, 2010, unknown to us, the engineer requested a change to the plotting that we had heard later was an addition for later consideration and not a substitution. Even with this change that we have not seen, my number values are still relatively accurate because we are dealing with 20 acres.

MBMG data

Contact: Shawn Kuzara
406. 272-1606

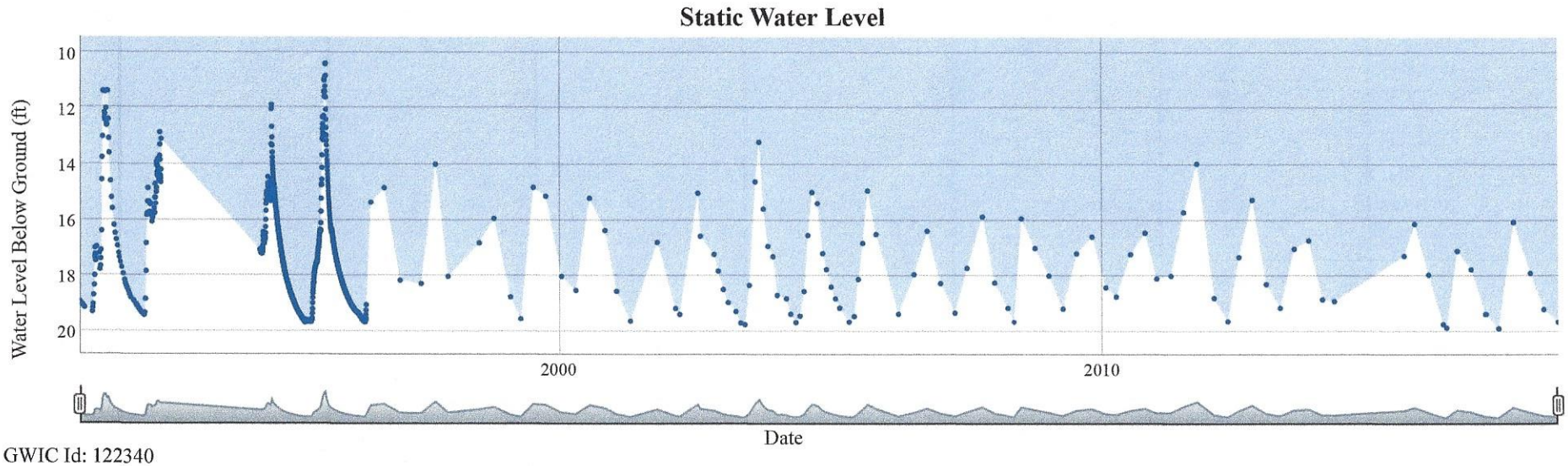


total depth of well
22.2 feet

EXHIBIT "A"

Groundwater Information Center Well Hydrograph

The following chart represents the current hydrograph for this well. Data reported are static water levels in feet below ground surface. A filter has been applied to the data to remove all dry and/or non-static measurements.



GWIC Id: 122340
Site Name: EDGAR SCHOOL TOEPFER BROS.
Location: 04S23E26BABB
Total Depth: 22.6 feet
Number of Measurements: 938
Period of Record: 3/15/1991 - 5/23/2018 1:21:00 PM

Disclaimer

The preceding materials represent the contents of the GWIC databases at the Montana Bureau of Mines and Geology at the time and date [6/19/2018 11:14:05 AM] of the retrieval. The information is considered unpublished and is subject to correction and review on a daily basis. The Bureau warrants the accurate transmission of the data to the original end user at the time and date of the retrieval. Retransmission of the data to other users is discouraged and the Bureau claims no responsibility if the material is retransmitted. There may be wells in the request area that are not recorded at the Information Center. Water level data downloaded from GWIC are not filtered and will contain all measurements.

EXHIBIT "B"

EXHIBIT "C"

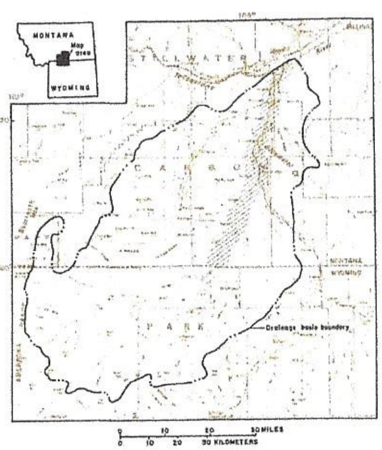
INTRODUCTION

DESCRIPTION OF STUDY AREA

The Clarks Fork Yellowstone River originates in the Beartooth Mountains and Absaroka Range of Montana and Wyoming. The river flows about 50 miles east and northeast in Wyoming, then flows an equal distance north-northeast from the State line to Laurel, Montana, where it empties into the Yellowstone River (location map). In its downstream reaches, the Clarks Fork flows through an alluvial valley that ranges from about 1 to 3 miles in width. Most domestic water supplies in this valley are derived from wells completed in the alluvial aquifer; some wells are completed in bedrock aquifers if alluvium is not present or is unproductive. Crops grown in the valley are irrigated mainly with surface water diverted from the Clarks Fork and some of its major tributaries. The Clarks Fork transports large loads of suspended sediment from spring runoff and from intense local summer storms.

PURPOSE AND SCOPE

The purpose of this 1-year study was to collect information about the thickness and extent of the alluvial aquifer, the altitude and configuration of the potentiometric surface in the alluvial aquifer, the quantity and variation in streamflow and suspended sediment, and the chemical quality of ground and surface water. To accomplish these objectives, 37 wells were inventoried and 43 samples of ground water were collected for water-quality analysis. Thirty-two holes were augered; some were cased and some had recorders installed for water-level observation. Daily sediment stations were operated from March through September 1984 at two active streamflow-gaging stations operated by the U.S. Geological Survey. Quarterly samples also were collected at these stations for water-quality analysis. Water and suspended-sediment samples were collected for analysis from selected diversion canals, ditch return flows, and the Clarks Fork and its tributaries. Information collected during the well inventory (tables 1 and 2) and observation-well drilling (table 3), and the analytical results of ground-water-quality samples (tables 4 and 5) are tabulated in the accompanying pamphlet.



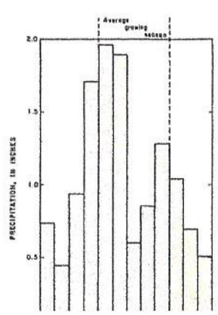
LOCATION MAP OF STUDY AREA (PATTERNED) AND CLARKS FORK YELLOWSTONE RIVER BASIN IN MONTANA AND WYOMING

PRECIPITATION

Annual precipitation in the study area ranges from about 6 inches near the State line to about 13 inches near the Yellowstone River (U.S. Soil Conservation Service, 1977). The location of the Beartooth Mountains west of the southern one-third of the study area coupled with the prevailing weather patterns are responsible for the rain-shadow effect in that area.

The mean annual precipitation at Bridger for 1951-84 was 12.72 inches. At Bridger, about 50 percent of annual precipitation (precipitation graph) falls during the 154-day growing season that extends on the average from May 1 through September 30, based on a freeze threshold temperature of 28°F (National Oceanic and Atmospheric Administration, 1982).

The graph of cumulative departure from mean annual precipitation can be used



HYDROGEOLOGY

EXPLANATION

3800 — POTENTIOMETRIC CONTOUR--Shows altitude of potentiometric surface in alluvium, 1984. Dashed where approximately located. Contour intervals 20 and 100 feet. Datum is sea level

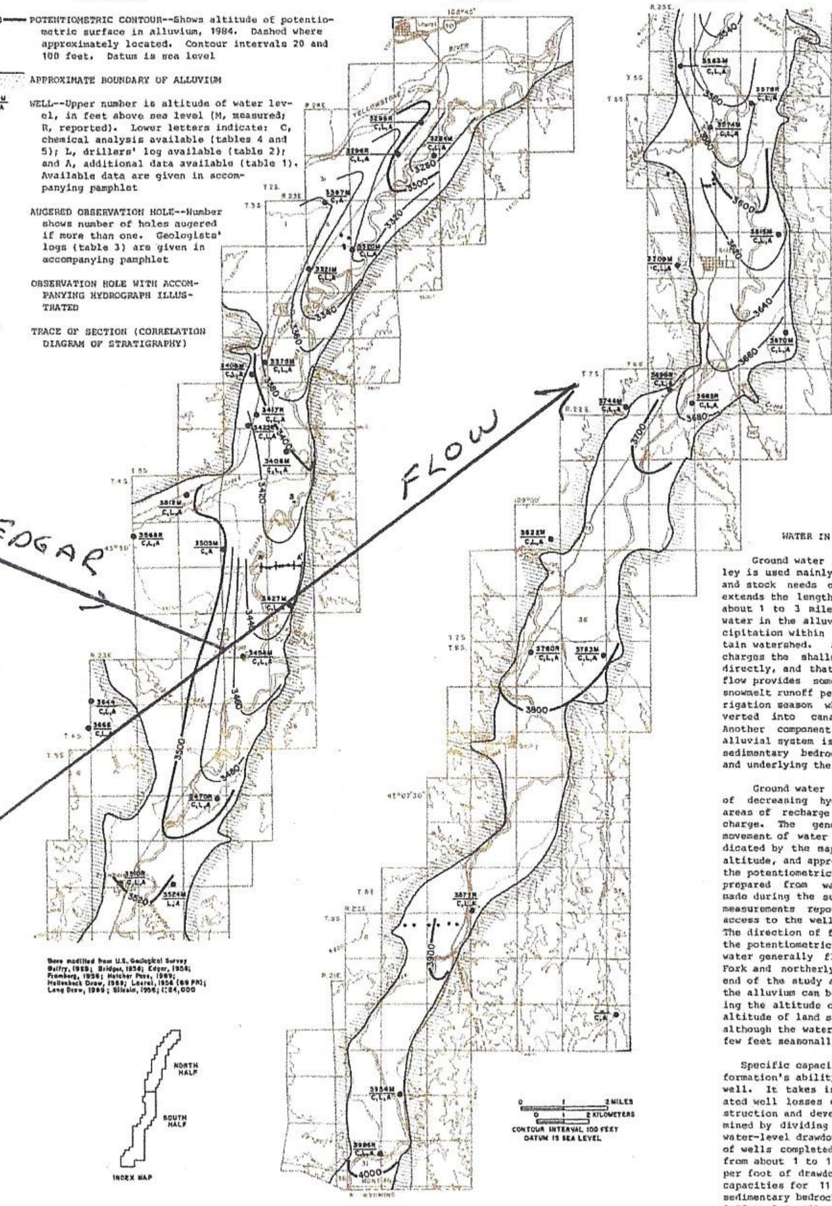
APPROXIMATE BOUNDARY OF ALLUVIUM

3554M C,L,A — WELL--Upper number is altitude of water level, in feet above sea level (M, measured; R, reported). Lower letters indicate: C, chemical analysis available (tables 4 and 5); L, drillers' log available (table 2); and A, additional data available (table 1). Available data are given in accompanying pamphlet

3 — AUGERED OBSERVATION HOLE--Number shows number of holes augered if more than one. Geologists' logs (table 3) are given in accompanying pamphlet

OBSERVATION HOLE WITH ACCOMPANYING HYDROGRAPH ILLUSTRATED

A—A' TRACE OF SECTION (CORRELATION DIAGRAM OF STRATIGRAPHY)



MAP SHOWING AREAL EXTENT OF ALLUVIUM AND ALTITUDE AND CONFIGURATION OF POTENTIOMETRIC SURFACE

WATER IN THE ALLUVIUM

Ground water in the Clarks Fork valley is used mainly to supply the domestic and stock needs of residents. Alluvium extends the length of the valley and is about 1 to 3 miles wide. The source of water in the alluvium is mostly from precipitation within the contributing mountain watershed. Some precipitation recharges the shallow ground-water system directly, and that which becomes streamflow provides some recharge during the snowmelt runoff period and during the irrigation season when streamflow is diverted into canals and onto fields. Another component of recharge to the alluvial system is leakage of water from sedimentary bedrock units adjacent to and underlying the alluvium.

Ground water flows in the direction of decreasing hydraulic head and from areas of recharge toward areas of discharge. The generalized direction of movement of water in the alluvium is indicated by the map showing areal extent, altitude, and approximate configuration of the potentiometric surface. The map was prepared from water-level measurements made during the summer of 1984, and from measurements reported after 1962 where access to the well head was not possible. The direction of flow is perpendicular to the potentiometric contours. Thus, ground water generally flows toward the Clarks Fork and northerly toward the downstream end of the study area. Depth to water in the alluvium can be estimated by subtracting the altitude of the contours from the altitude of land surface at a given point, although the water level will fluctuate a few feet seasonally.

Specific capacity is a measure of the formation's ability to yield water to a well. It takes into account any associated well losses due to methods of construction and development. It is determined by dividing the well yield by the water-level drawdown. Specific capacities of wells completed in the alluvium range from about 1 to 1,000 gallons per minute per foot of drawdown (table 1). Specific capacities for 11 wells penetrating the sedimentary bedrock aquifers ranged from 0.02 to 2.4 gallons per minute per foot of drawdown (table 1).

EXHIBIT "D"

WATER IN THE ALLUVIUM

Ground water in the Clarks Fork valley is used mainly to supply the domestic and stock needs of residents. Alluvium extends the length of the valley and is about 1 to 3 miles wide. The source of water in the alluvium is mostly from precipitation within the contributing mountain watershed. Some precipitation recharges the shallow ground-water system directly, and that which becomes streamflow provides some recharge during the snowmelt runoff period and during the irrigation season when streamflow is diverted into canals and onto fields. Another component of recharge to the alluvial system is leakage of water from sedimentary bedrock units adjacent to and underlying the alluvium.

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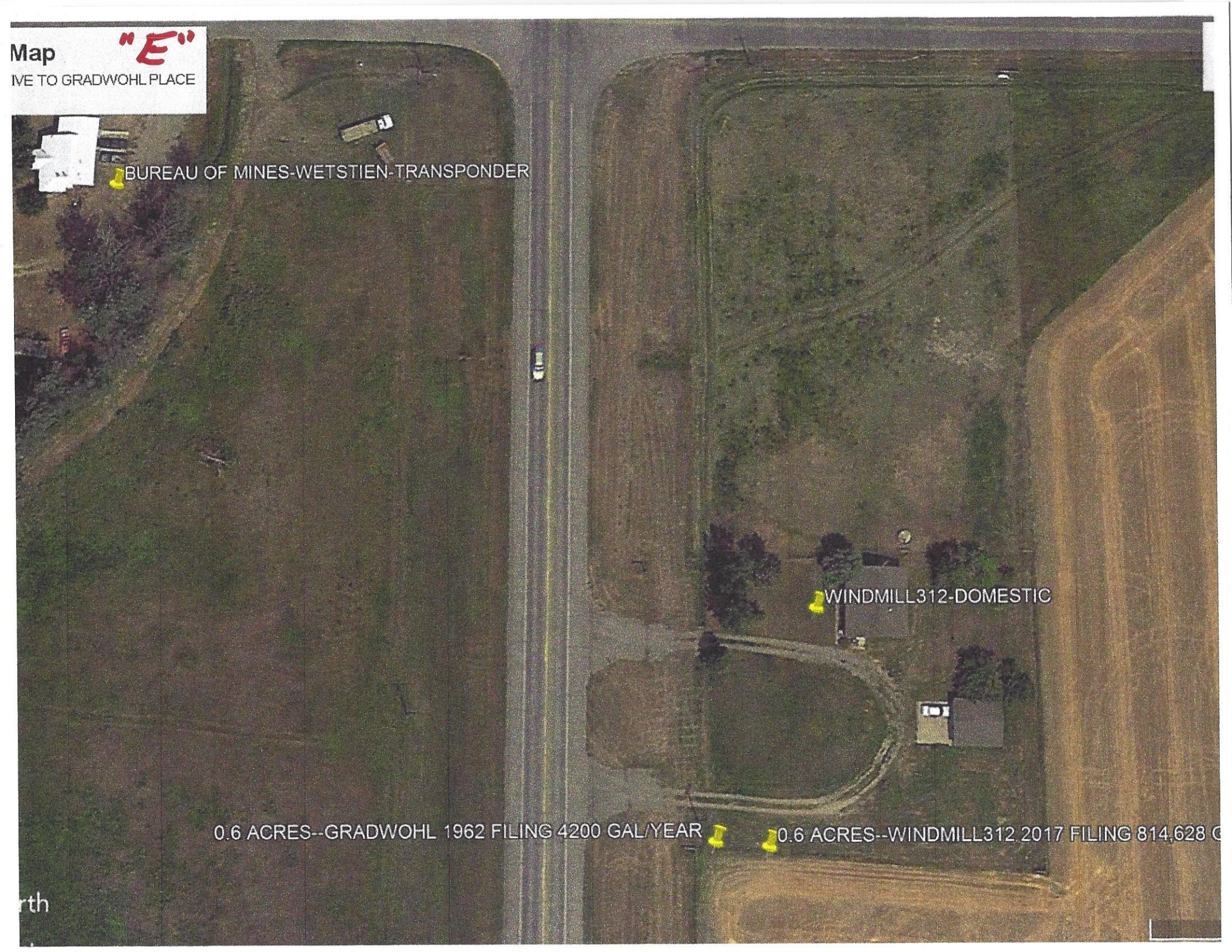
Map "E"
IVE TO GRADWOHL PLACE
BUREAU OF MINES-WETSTIEN-TRANSPONDER
WINDMILL312-DOMESTIC
0.6 ACRES--GRADWOHL 1962 FILING 4200 GAL/YEAR
0.6 ACRES--WINDMILL312 2017 FILING 814,628 G
rth


Untitled Map "F"
Write a description for your map.
Legend
WELL
Main St
Loveland Ave
Clark Ave
Railway Ave
Elwell St
Pryor Rd
SCHOOL WELL
MONTANA TECH MONITOR WELL
Windfarm312 stock well Gradwohl in 1947 filed for 72,000 gallons and Windfarm312 in 2017 filed for 472,484 gallons, s
Google Earth
© 2018 Google
N
900 ft

Denise Maas

P.O. Box 114

204 Elwell Street

Edgar MT 59026

June 9, 2018

Re: Windmill Farms Subdivision

Dear Carbon County Planning Office and Attn: Forrest J. Mandeville Contractor,

I recently learned of the preliminary plat application for the proposed Windmill Farms Subdivision, a 20-lot major subdivision located on the southeast corner of Highway 312 and E. Pryor Road/Elwell Street near Edgar, MT in Carbon County, and also an additional 20 one acre sites adjacent to the first in the second stage of development.

As a resident and property owner in Edgar MT, I am opposed to the above mentioned Subdivision. Much of my knowledge comes from my well informed neighbors; many are quite familiar with the history in Edgar and have resided here many years with their families, also, from other Edgar residents who have professional knowledge and have served on local boards related to water and sewer maintenance. Their major concern and mine for the town of Edgar is to protect the limited water supply, our flow of water comes into town from the southwest and would be intercepted by the proposed Subdivision. Some wells in Edgar get extremely low or dry toward the end of winter. Tapping into this aquifer by 20 additional one acre home sites and later 40, may have dire consequences, negatively impacting the water supply for the existing Edgar residents. Also a huge concern is the contamination of Edgar's wells by 20 and later 40 leach fields from septic tanks that would discharge into the subsurface aquifer that feeds Edgars wells.

While considering this proposed subdivision, I ask that you look carefully at all the possibilities and consequences regarding the environmental impact to this area.

Sincerely,

Denise Maas

Denise Maas

E-MAILED
6/11/18