

Webster, Clay

From: Neely, Ken
Sent: Tuesday, May 17, 2016 2:59 PM
To: Webster, Clay
Cc: Vincent, Sean; Campbell, Lin
Subject: FW: Cleft of the Rocks evaluation
Attachments: Cleft of the Rocks Memo.docx

Clay,

Attached is the memo containing the analysis that Lin completed for the original proposal regarding rental points of diversion near the Raft River Critical Ground Water Area. Although the situation changed regarding the location of the points of diversion for these rentals, this memo provides a thorough analysis to date for your files, in the event that the original transfer proposal is revisited at some point in the future. Please let us know if you have any questions regarding Lin's analysis.

Ken

Kenneth W. Neely
Ground Water Section Supervisor
208-287-4852
Ken.neely@idwr.idaho.gov
www.idwr.idaho.gov

To: Clay Webster
From: Lin Campbell
CC: Sean Vincent, Ken Neely
Subject: Water Supply Bank Rental Review – Cleft of the Rock 43-13595 and 43-13597

Date: May 17, 2016

This memorandum is provided in response to your request for a review of the subject Water Supply Bank Rental application due to concerns about potential impacts to ground-water users in the Raft River Critical Ground Water Area (RRCGWA). The proposed rental points of diversion are located immediately north and east (outside) of the RRCGWA boundary and are also outside of the Eastern Snake Plain Aquifer (ESPA) common ground water area. These boundaries and the locations of the old and rental points of diversion are shown in Figure 1.

Background

The RRCGWA was originally established in July 1963 to include all of Basin 43 and the Marsh Creek drainage in Basin 45. The area was subsequently modified to exclude the Northwest portion (August 1965); to exclude the Marsh Creek drainage (September 1966); to exclude the area north of Yale Road (November 1970); and to exclude the Almo and Elba sub-basins and the area above the Narrows (June 1977).

Agricultural development generally follows the course of the Raft River channel. Cultivated land extends nearly across the valley between Idahome and Yale Roads and narrows significantly north of Yale Road.

Previous studies of the Raft River basin have concluded that discharge of surface water from the basin to the Snake River is negligible for most years with water remaining in the Raft River channel only during years with unusually high snowpack. Ground water is discharged primarily by underflow to the ESPA and irrigation pumpage. In 1966, discharge to irrigation wells was estimated to be nearly double the amount discharged to the ESPA by underflow. (*Walker, E. H., Dutcher, L. C., Decker, S. O., and Dyer, K. L.; 1970, The Raft River Basin, Idaho-Utah as of 1966: A Reappraisal of the Water Resources and Effects of Ground-Water Development; Idaho Department of Water Resources Water Information Bulletin 19.*)

Ground water underflow to the ESPA is not dependent upon origination from within or outside of the RRCGWA. All ground water in the Raft River Basin as a whole, contributes to the underflow component of discharge. Therefore any consumptive use, regardless of where it is located in the basin will affect the ground-water contribution to the ESPA.

Ground-water monitoring in the RRCGWA has been undertaken by IDWR, the U. S. Geological Survey, and the U. S. Bureau of Reclamation beginning in 1950. For this review, the trends in 12 wells in the area generally defined as being north of Idahome Road were evaluated. The well locations are shown in Figure 1.

Wells 09S 26E 07ABB1 and 07ABB3 are nested piezometers in a well located near Lake Walcott in the Minidoka Wildlife Management Area. Well 09S 26E 13CCC1-D was a stock well north of Baseline Road that failed due to declining water levels and was replaced by well 09S 26E 13CCC2, located approximately 20 feet from the original well. Well 12S 26E 02ACC1 is located just south of Idahome Road, but was considered close enough to be included in this analysis. The remaining wells are a mixture of irrigation, stock, and unused wells.

The Cleft of the Rock application proposes to continue idling points of diversion that are outside of the RRCGWA and the area of common ground water boundaries, and to use wells as points of diversion that are still outside of those boundaries, although much closer to the RRCGWA boundary. The proposed points of diversion have been used for the past several years.

Current Conditions

Since the start of ground-water level measurements, declining water-level trends have been evident in every well in that part of the RRCGWA generally north of Idahome Road. Stacked hydrographs for wells located near Baseline Road (Figure 2), Yale Road (Figure 3), and Idahome Road (Figure 4) illustrate the trends documented in the measurement history, which is also summarized in Table 1. Declines have ranged from less than 10 feet to nearly 180 feet and average between .56 feet and 3.58 feet per year.

	Well ID	Completion Depth (Feet) and Use	Length of Record (Years)	Range (Feet blw Land Surface)	Average Decline (Feet per Year)
Baseline Road Transect	09S 26E 07AAB1	152.5 Monitoring	44	59.13 – 102.40 $\Delta = 43.27$	.84
	09S 26E 07AAB3	804.5 Monitoring	44	10.31 - 53.47 $\Delta = 43.16$	.98
	09S 26E 13CCC1-D	170 Destroyed	49	136.49 - 163.92 $\Delta = 27.43$	.56
	09S 26E 13CCC2	230 Stock	10	170.22 - 178.99 $\Delta = 8.77$	.87
Yale Road Transect	10S 27E 19DAA1	Unknown Stock	56	119.69 - 170.01 $\Delta = 53.32$	.95
	10S 27E 30CCC1	301 Unused	51	134.69 - 191.78 $\Delta = 57.09$	1.12
	10S 28E 19BCA1	471 Domestic	8	124.27 - 152.92 $\Delta = 28.65$	3.58
	11S 26E 10CAD1	256 Unused	56	139.24 - 243.05 $\Delta = 103.81$	1.85
Idahome Road Transect	11S 27E 29AAA1	250 Unused	65	34.27 - 196.84 $\Delta = 162.57$	2.5
	11S 27E 32ADD1	440 Irrigation	61	46.00 - 225.57 $\Delta = 179.57$	2.94
	11S 27E 34DDD1	450 Unused	49	115.59 - 283.30 $\Delta = 167.71$	3.42
	12S 26E 02ACC1	197 Irrigation	65	17.69 - 186.65 $\Delta = 168.96$	2.6

Although there is limited ground-water level data in the immediate area of the rental points of diversion, it appears that ground-water levels in the entire basin north of Idahome Road (and probably further south) are declining and will continue to do so. Because consumptive uses of ground water have not significantly decreased since the declaration of the RRCGWA, there is

little reason to believe that water levels will stabilize or reverse their downward trends. It can be expected that withdrawals from any point of diversion located inside, or outside but close to the RRCGWA boundary, will affect ground-water levels in the critical area.

Well 10S 28E 19BCA1, the closest well to the proposed rental points of diversion appears to have experienced the greatest average annual decline. The magnitude of decline in this well should be regarded with some uncertainty because it has a relatively short record of measurements that are complicated by frequent pumping before and during measurement events, significant drawdown, and a very long recovery period. However, the hydrograph for this well is similar to those of the wells used for the Idahome transect and may be reflective of wells located in the most intensely farmed areas in the RRCGWA.

Hydrographs for the other wells used for the Yale Road and Baseline Road transects don't exhibit declines similar to the domestic well, but it must be noted that they are located several miles away in areas with much less nearby agricultural activity, and are either unused or see limited use.

IDWR does not have any monitoring wells close enough and of sufficient quality to determine if the relocation of the points of diversion under the existing rental agreement has had a negative impact on other ground-water users inside or outside of the RRCGWA. The quantity of ground water produced at the rental points of diversion is approximately equal to that produced at the old points of diversion.

Conclusions

Because the current (proposed) production is approximately equal to the ground water that was produced at the old points of diversion, the net change in impact on underflow to the ESPA should be insignificant.

There are demonstrated declines in ground-water levels at all of the IDWR monitoring network wells in the northern portion of the Raft River Valley. The well nearest to the rental points of diversion (10S 28E 19BCA1) shows the greatest rate of decline, but it is not clear how much of the decline is due to the pumping/recovery cycle at the well, and how much may be influenced by nearby pumping or is indicative of the generally declining water levels throughout the area.

It should be expected that there will be some impact to other wells near the rental points of diversion but data is insufficient to estimate the magnitude of the impact. Although the rental wells are outside of the RRCGWA boundary, nearly all of the nearby wells that may be impacted are located within the RRCGWA.

The area north of Idahome Road in the RRCGWA has historically been the location of much of the agricultural development in the Raft River basin, and there continues to be interest in maintaining and even expanding the acreage under cultivation. There should be an effort made to identify one or more suitable wells at which routine measurements can be taken. The ideal well is one of similar depth that is unused and that will allow deployment of a pressure transducer. If an actively-pumped well is selected, care should be taken that there is an adequate measurement port, no obstructions, and no possibility of contamination with pump lubricants.

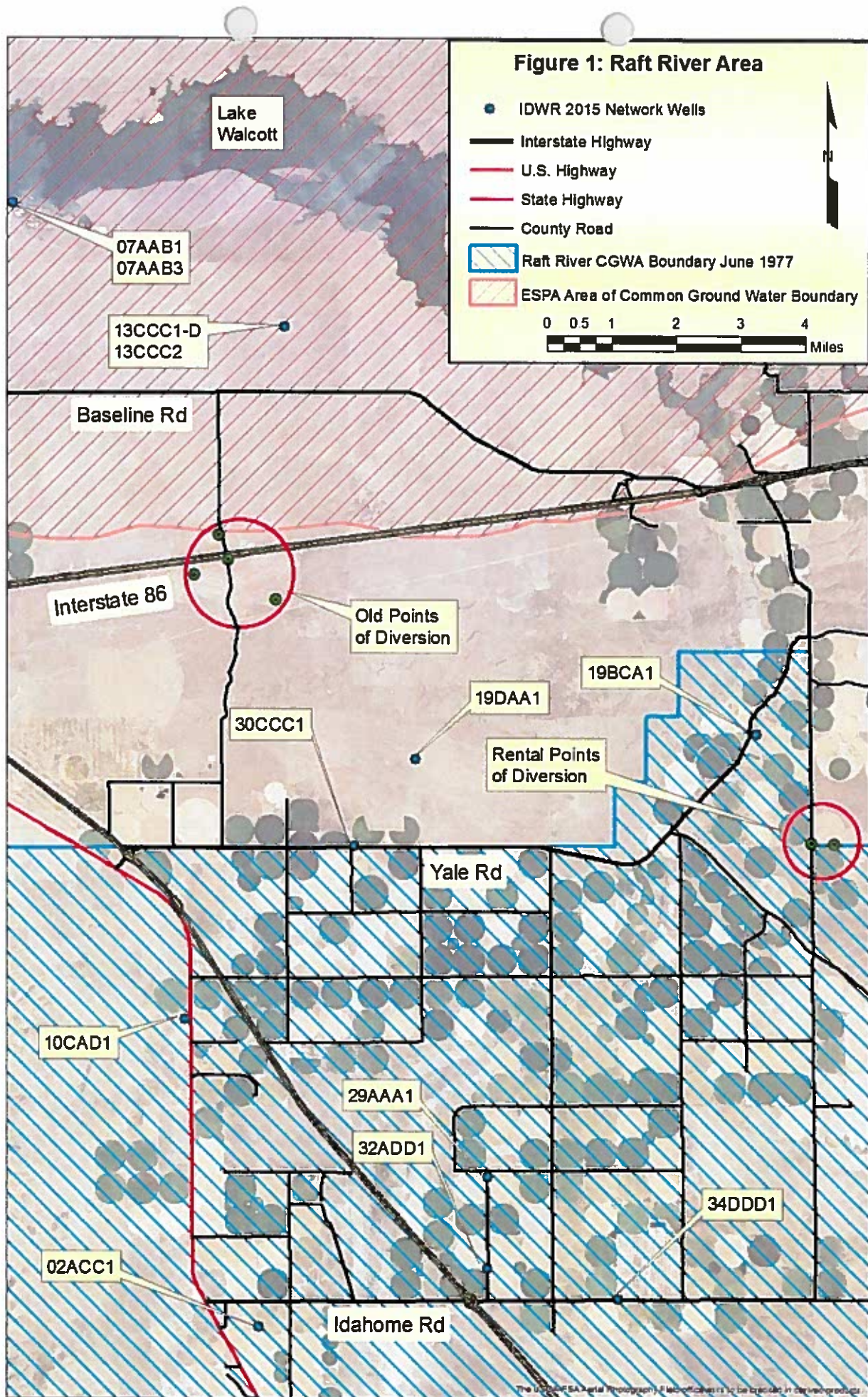


Figure 2: BASELINE ROAD TRANSECT

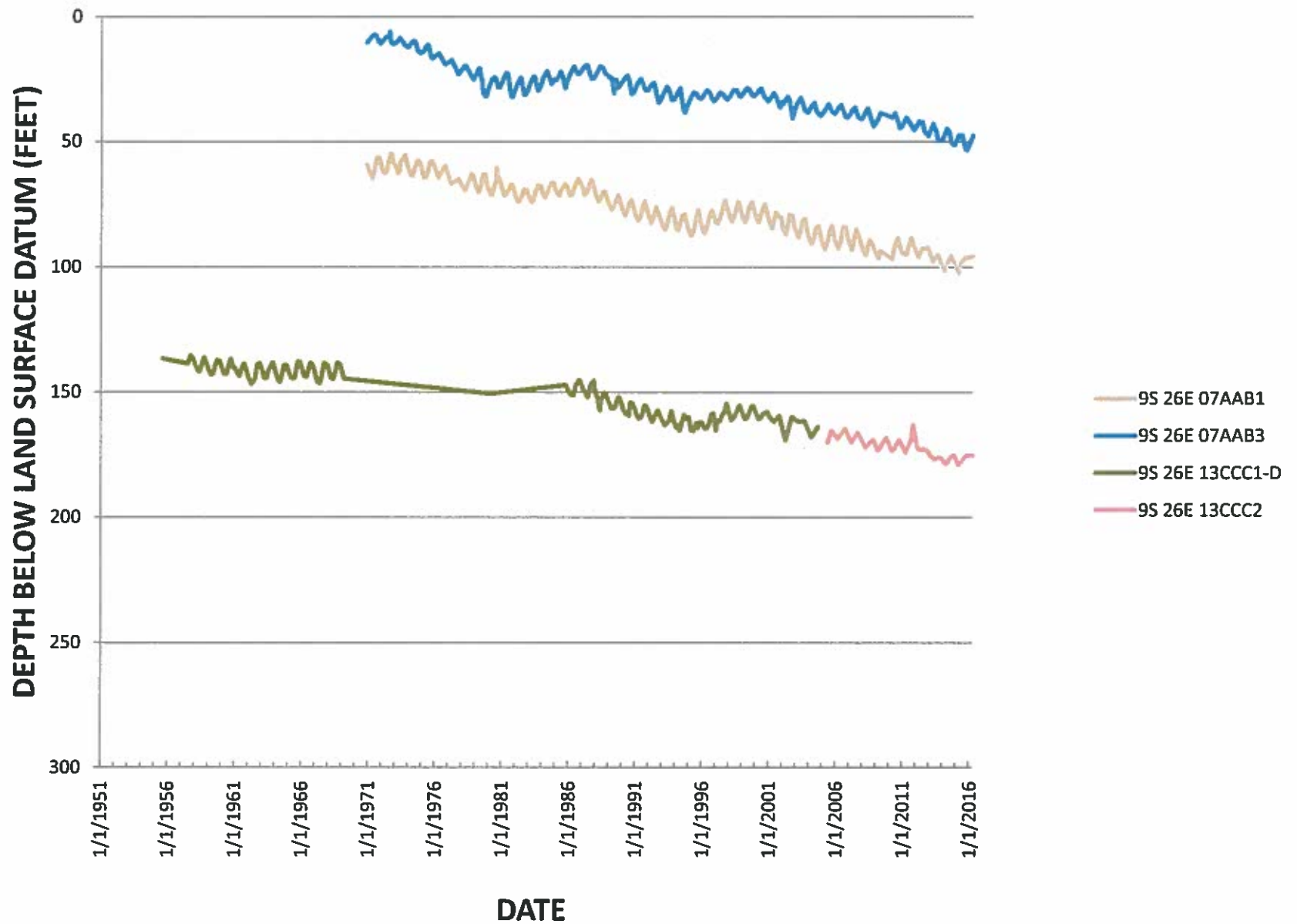


Figure 3: YALE ROAD TRANSECT

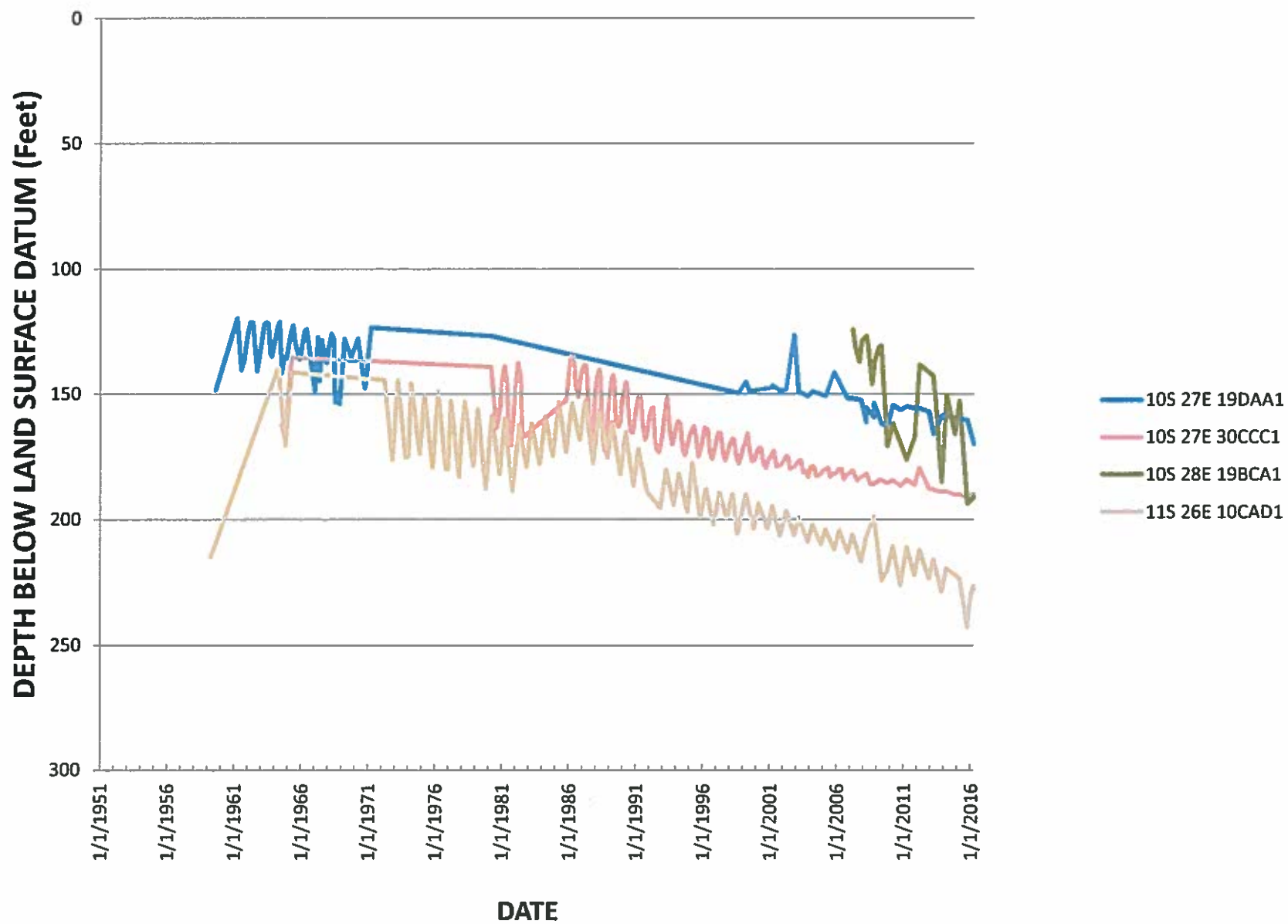
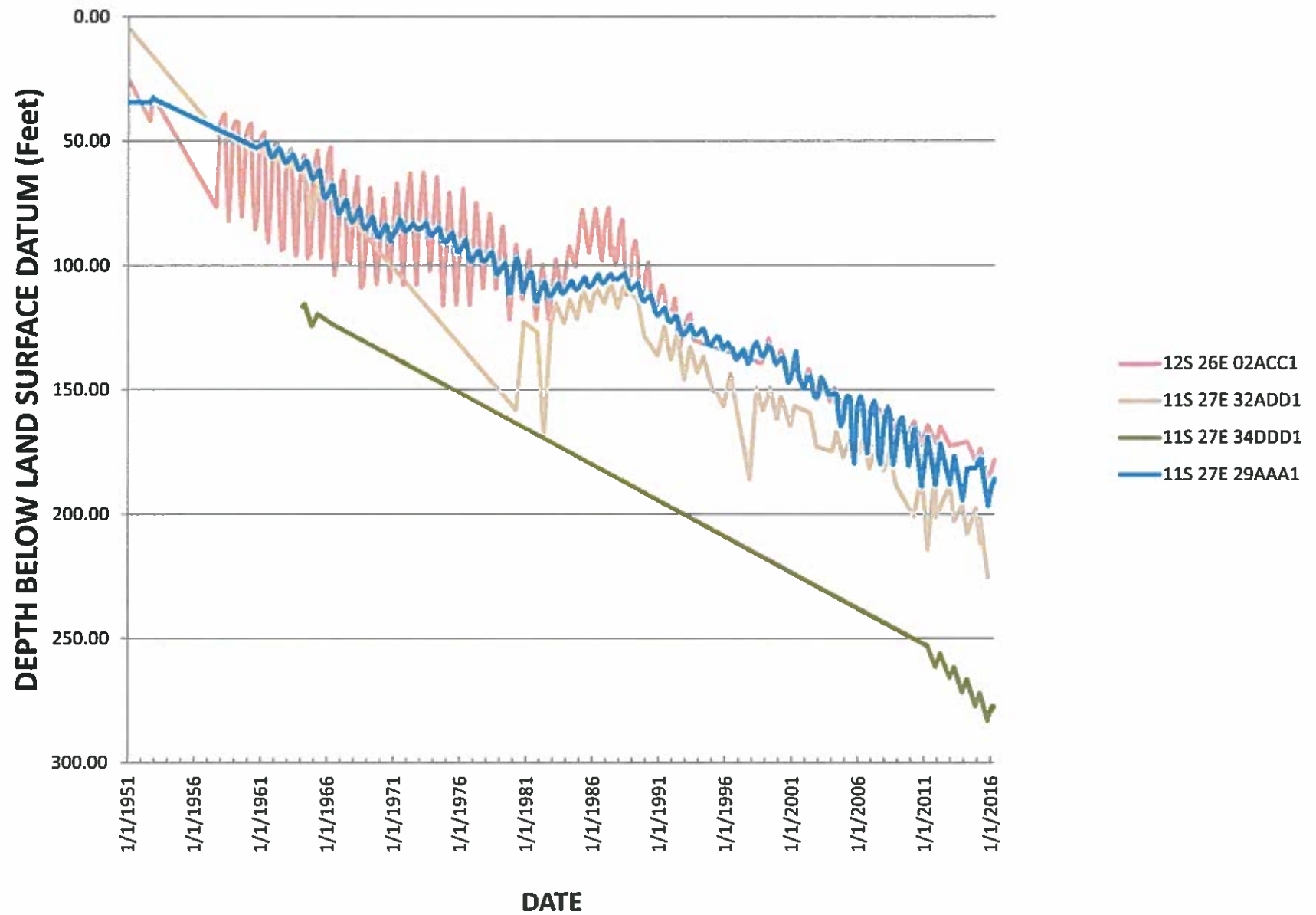


Figure 4: IDAHOME ROAD TRANSECT



Webster, Clay

From: Webster, Clay
Sent: Wednesday, March 09, 2016 3:05 PM
To: Campbell, Lin
Subject: Cleft of the Rock Farms
Attachments: Rental Review Memo Cleft of the Rock 43-2346H etc.docx; Rental Move.pdf

Lin,

I spoke with Ken about the review of this rental. We found water rights that had 130.8 acres leased into the bank that are located inside of the Raft River Critical Ground Water Area. We will be using these rights to fulfill this rental. Ken wanted me to identify those rights to you (see the attached review memo and map). This rental will be approvable for two years, that is how long these rights are leased to the bank.

Sincerely,
Clay Webster
Water Resource Agent
clay.webster@idwr.idaho.gov
208-287-4910
Idaho Department of Water Resources (IDWR)

MEMORANDUM

DATE: March 8, 2016
TO: Cleft of the Rock Farms Rental for 2016
FROM: Clay Webster

RE: Water Supply Bank Rental Application

Today I had a phone conversation with Greg Sullivan from Brockway Engineering about the rental application received Aug 17, 2015 for Cleft of the Rock Farms. I had requested an evaluation of the rental proposal from the hydrology section to determine any injury to the Raft River Critical Ground Water Management Area (RRCGWMA). This rental caused me some concern due to the January 2015 RRCGWMA report from Ken Neely. Mr. Sullivan expressed his frustration that we would not just continue this lease for another 5 years. Greg argued that the water in the aquifer travels towards the North. He explained that the Ward Land and Livestock water rights (the ones originally requested) were in an aquifer that was tributary to the ESPA. He was concerned that his client needs to plow the field soon. I told him that I would process this rental with the water rights recommended by Cherie Palmer in December to expedite the processing of this rental. This would be moving the water from inside the RRCGWMA to just outside to the North.

Webster, Clay

From: Webster, Clay
Sent: Tuesday, January 12, 2016 8:10 AM
To: Vincent, Sean
Subject: Hydrology Water Supply Bank Rental Review
Attachments: Rental Move Map.pdf; Rental Review Memo Cleft of the Rock 43-13595 and 43-13597.docx; Request for Hydrology Review Memo Cleft of the Rock 43-13595 and 43-13597.docx

Sean,

We are currently processing this application for rental. We have some concerns about the possible effects of this move on the Raft River Critical Ground Water Area. Could we get someone in Hydrology to take a look at this one to see if we can proceed? Thanks.

Sincerely,
Clay Webster
Water Resource Agent
clay.webster@idwr.idaho.gov
208-287-4910
Idaho Department of Water Resources (IDWR)

MEMORANDUM

To: Water Right(s) 43-13595 and 43-13597
From: Clay Webster
Date: 1/11/2016
Re: Review & Analysis of Application to Rent Water from the State Water Supply Bank

PURPOSE/NARRATIVE: The department received this application on August 17, 2015 to rent 1.78 CFS and 528 AF to irrigate 132 acres for Cleft of the Rock Farms from Brockway Engineering.

These same rights were rented for the same purpose from 2011-2015. They are proposing to use this water for a pivot located at 10S 28E straddling sections 29 and 32. The water will be pumped from existing wells that are for WRs 43-13513 and 43-13515. This move proposes to move these rights SW across the Raft River to just North of the Raft River Critical Ground Water Area.

Upon reviewing Ken Neely's report on the Raft River Critical Ground Water Area dated January 2015, I have concerns that this rental may have a negative impact in this area. I am requesting hydrology's comments on possible impacts of this move to the Raft River (CGWA).

The leased rights and the rental location fall within the newly designated Water District 143.

AUTHORITY TO FILE: This application was signed by Ken Woodworth. He is listed as a General Partner of Cleft of The Rock Farms on the ISOS web site. The current Tax-lot Data shows Cleft of the Rock Farms owns the property at the rental POU and Rental PODs.

WATER RIGHT VALIDITY: 43-13595 and 43-13597 were leased into the WSB indefinitely under parent WR #s 43-7126 and 43-4037. The IWRB recently passed a resolution to release indefinite leases from the Bank. The lessors requested a five year term from 2016 through 2020 on October 6, 2015. Satellite imagery indicates that that the leased POU is being idled.

INJURY TO OTHER WATER RIGHTS: There were concerns of whether this move would need to be modeled. However, the leased rights are outside of the smooth boundary for the ESPA and the water is being moved further away from the ESPA boundary. Therefore modeling is not required. There are some concerns of the water being moved closer to the Raft River CGWA. However, the rental PODs are located outside of that boundary.

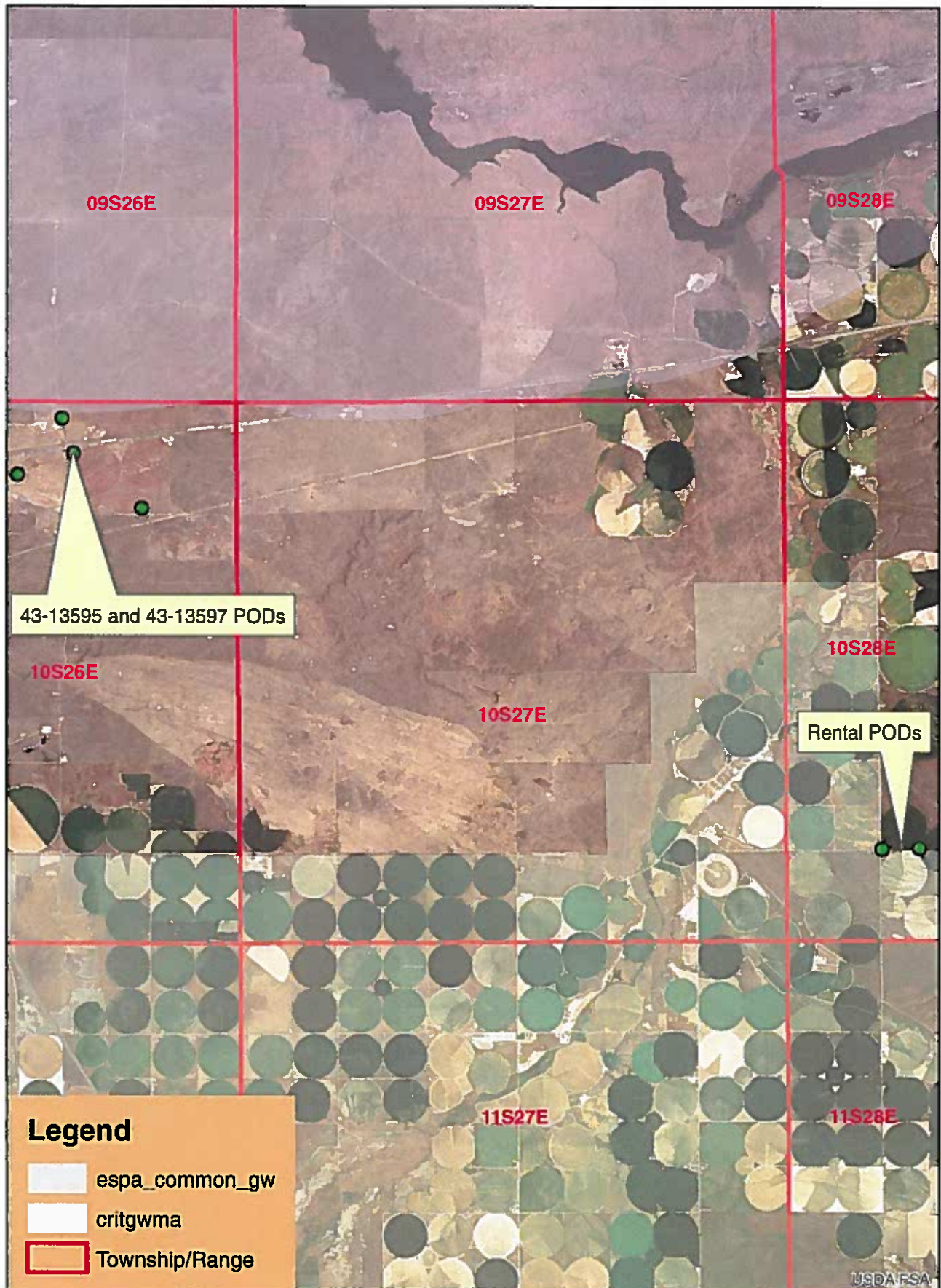
ENLARGEMENT OF USE: There are no enlargement concerns.

LOCAL PUBLIC INTEREST: Review staff has no information to suggest this application is inconsistent with the local public interest.

BENEFICIAL USE/CONSERVATION OF WATER RESOURCES: The rental appears consistent with the conservation of water resources in Idaho.

DEPARTMENT STAFF OR WATERMASTER COMMENTS: The rented right(s) are subject to Water District 143.

Cleft of the Rock Farms 2015 Rental



Webster, Clay

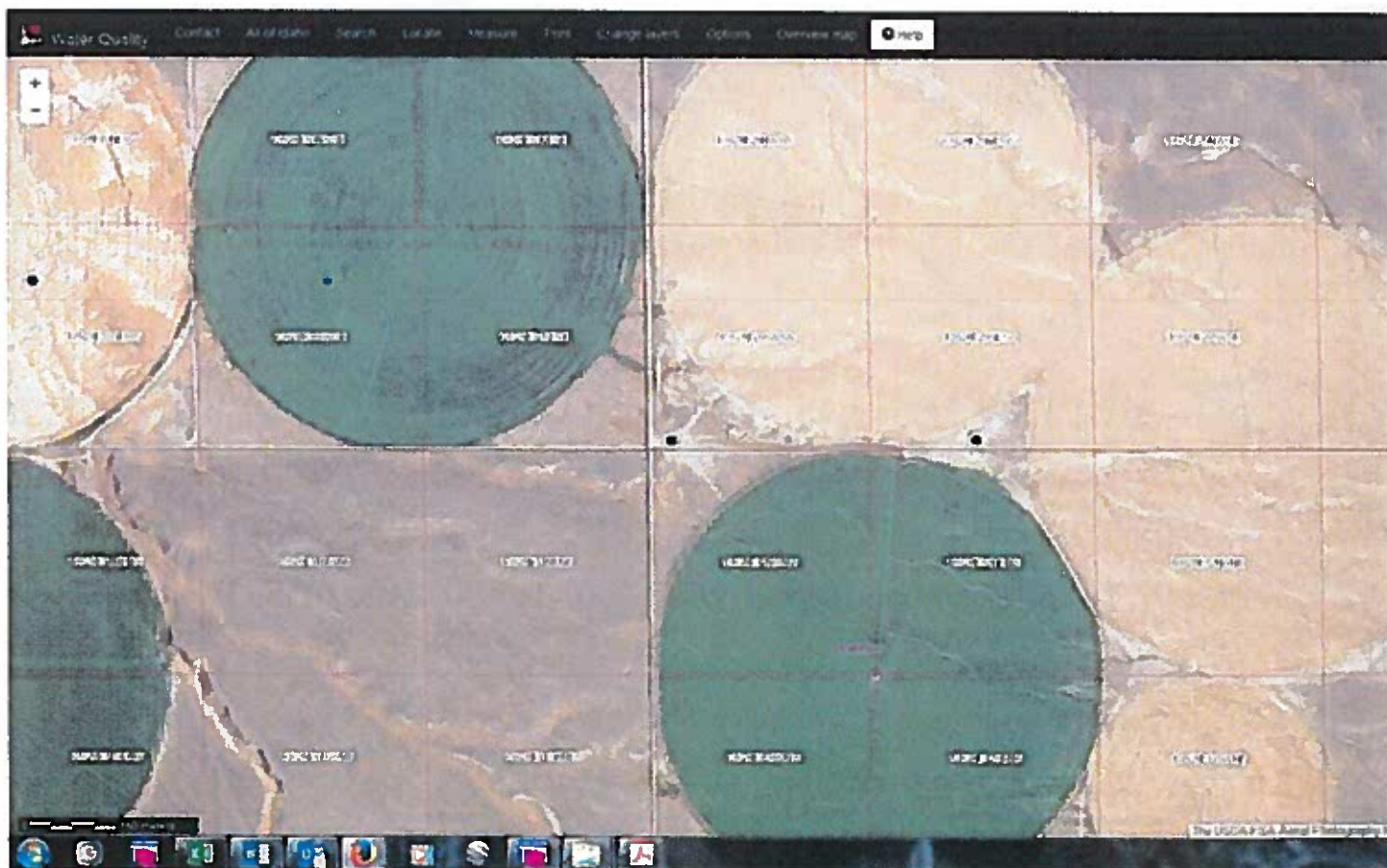
From: Palmer, Cherie
Sent: Thursday, December 10, 2015 3:43 PM
To: Webster, Clay
Subject: FW: Cleft of the Rock and George Kelley

From: Greg Sullivan [<mailto:greg.sullivan@brockwayeng.com>]
Sent: Wednesday, December 02, 2015 7:34 AM
To: Palmer, Cherie
Subject: RE: Cleft of the Rock and George Kelley

Cherie,

According to the IDWR general mapping tool, the two wells used by Cleft of the Rock Farm are outside of the Raft River Critical Ground Water area. They specifically drilled the two wells outside of the critical ground water area several years ago to avoid the issues associated with the critical ground water area. Cleft of the Rock Farms has rented a portion of 43-13595 and 43-13597 from 2011 through 2015. So this rental is really a continuation of the previously approved rental.

Please process the rental as it was submitted.



Thank you,

Greg Sullivan
Brockway Engineering

2016 North Washington Street, Suite 201
Twin Falls, Idaho 83301
208-736-8543

From: Palmer, Cherie [<mailto:Cherie.Palmer@idwr.idaho.gov>]
Sent: Tuesday, December 01, 2015 5:25 PM
To: Greg Sullivan <greg.sullivan@brockwayeng.com>
Subject: Cleft of the Rock and George Kelley

Greg,

I am looking at some rentals and have some concerns. First, I see the you submitted a rental for Cleft of the Rock using water rights 43-13595 and 43-13597. My concern there is the PDs for Cleft are within a critical ground water management area and rights 43-13595 and 43-13597 are not within the critical ground water management area. This throws up some flags. I was looking around and noticed that rights, see attached lease contract, that would be a much better fit for Cleft.

Second, George Kelley needs some water this year. It sounds like they contacted you to model rights for his rental. I think it would work if you use 43-13595 and 43-13597 to fulfill George's rental. I responded to an email from Paul just now that explains how the modeling can be done (I will forward it to you).

Let me know what your thoughts are.

Cherie