Seth S. Jeffs

United Order of South Dakota
PO Box 5050
Custer, SD 57730

February 18, 2015

Ms. Jeanne Goodman, Chief Engineer
Water Rights Program
Foss Building, 523 E Capitol
Pierre, SD 57501

National Park Service Water Resources Division
William R. Hansen
and Jeff C. Hughes
1201 Oak Ridge Drive, Suite 250
Fort Collins, Colorado 80525-5596

Black Hills National Forest
Craig Bobzien
1019 North 5th Street
Custer, SD 57730

RE: NPS and National Forest Petition to Intervene in South Dakota Water Permit Application No. 2730-2

Dear Ms. Goodman, Mr. Hansen and Mr. Bobzien,

I am the water operator for the water system owned and operated by the United Order of South Dakota. I was grateful for the opportunity to talk to the representatives of the National Park Service on February 13, which included William Hansen, Jeff Hughes, and Peter Fahmy. I was also grateful to talk to Craig Bobzien on February 17th. In both of the phone conversations I described what is contained in this letter.

I take this opportunity to describe the reason why we are asking for more water rights. I have included the well log data that we agreed to give to the NPS. During the years 2008-2010 the records were much more detailed. The yearly reporting to the State of South Dakota Water Rights is the only record we have for the years 2011-2014. I have recently reported to the Water Rights Division that we used 8,323,600 gallons of water in the year 2014, which is 25.5 acre feet of water.

There are currently two permitted wells, one of which is operative, pumping at less than 94 GPM when the water is needed. I will call this well #1. This well will only pump at 94 GPM when there is no head pressure, when the storage tank is empty. When the tank has water in it, and is being filled, the rate goes down to around 50-70 GPM. Most of the time this is the average rate at which the well is pumping.

The second well is inoperative at this time. When installed, it did not produce the water flow that was desired. It runs dry in a few minutes of pumping at less than 90 GPM. This well was installed as a backup to the only operating well. We anticipate that this well is only capable of producing from 10-20 GPM. We will be installing a smaller pump and use it as a supplement to the larger well. I will call this well #2.

At this time the community has a 30,000 gallon water storage tank to compliment the water distribution system. The water distribution comes through 4" water mains. This system was installed as a temporary system to fill the need until we are able to install a more adequate water distribution system.

During the summer months the 30,000 gallon water tank runs dry and the buildings are often left without water. Well #1 is not able to keep up with the additional demand of watering gardens, orchards, landscape, and feeding animals during the spring and summer months. **We are asking for the privilege to drill another well (well #3) and also to have the privilege to pump at a higher rate because of the higher demand for water during the spring and summer months.**

The three wells will operate on a staged demand basis. When the demand for water is low, well #1 will be able to take care of the need. If the demand for water is high all three wells will be used. This is the only time that we would be pumping at a peak demand rate of around 200 GPM. The only other events that would require the peak rate would be the event of a fire or troubles with the water distribution system like a break in any of the water lines.

As you can see by the attachments, the greatest demands are during the months from the end of May to the beginning of September. The rest of the year the demand is only a fraction of what is used in those five months. Well #1 will easily be able to keep up with the need and will only be pumping for a short time each day for about seven months out of the year.

The United Order of South Dakota is currently permitted to use up to 153 acre feet of water per year if the wells run at 95 GPM for the entire year. Cumulatively, we do not expect to use more than what we are currently allowed to use under permit # 2610-2.

The number of gardens and orchards will increase as the community is able to bring more of the land into cultivation; also the needs for animals in the future will increase the demand for water. We request that we at least be allowed to displace up to the currently allowed 153 acre feet of water per year, that there be no cumulative limitation placed on what is already allowed under permit # 2610-2.

The need for fire protection is also a great concern. Currently there is no dependable fire protection. Engineers recommend at least 6"+ water mains with a minimum of at least 20 psi, with fire hydrants spread through the community. There is a demand of thousands of gallons per minute during that critical time when the water is needed most. The likelihood of a fire is much greater in the summer months when most water is being used and the reserves would be at the lowest levels.

Adequate fire protection requires water in storage, ready for the event of a fire. We will be installing a larger water tank and distribution system to meet this need. Part of this need is to have adequate wells feeding the water distribution system at an adequate rate to not only keep up with the demand, but also make sure that there is always water in storage. With hydrants in place there will be a need to flush the lines at regular intervals during the year to keep the system clean and free of bacteria and other normally harmful elements that collect in a water distribution system. This will also increase the cumulative amount of water that will be needed, but not significantly.

We need to be able to perform maintenance work on well #1 but are unable to because we do not have another adequate backup well.

There is no way to know how much water future well #3 will be able to produce. To be safe we asked for an additional 205 GPM, so that we can run all three wells at the same time without exceeding the peak rate limit of the United Order of South Dakota's water rights.

This is my formal request to the Water Rights Program of South Dakota to alter the permit application number 2730-2 to reflect a total peak rate of 200 GPM instead of 300 GPM, which is an addition of 105 GPM, instead of 205 GPM to the permit number 2610-2 which allows the United Order of South Dakota to use 95 GPM.

In summary, the Chief Engineer has recommended that the United Order of South Dakota be permitted to displace more water based on the fact that there is unused water available. It has been shown that it will not have an impact on any of the needs of those around us. The NPS and the Forest Service suggest that we will be using 300 GPM all the time for the entire year, which would be impractical and impossible for this community to do. There will only be a need to pump at a peak rate of 200 GPM at short times usually during the spring and summer months.

Though we do not anticipate the need to displace much more water cumulatively, we need to be able to displace water at a higher rate at certain times of the year when the need exists. We humbly and respectfully ask for the privilege to drill another well and also to be able to pump water at a higher rate when it is needed. We also request that we be allowed to use no less than the cumulative total amount of water that we are currently allowed to use under permit #2610-2.

We hope this relieves your fears and concerns.

Sincerely

Seth S. Jeffs
Water Operator
United Order of South Dakota

Attachments:
Attachment A – SD Water Well Completion Report 10/15/07 (Well #1)
Attachment B – Monthly Well Log Data for 2008-2010
Attachment C – SD Water Well Completion Report 10/20/10 (Well #2)
Attachment D – Monthly Well Log Data from June, 2014

Replacement #4

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NW ¼ SE ¼ Sec 10 Twp 65 Rg 7E

County Custer

North

Please mark well location with an "X"

W E

Well Completion Date

10-15-07

1 Mile

LOCATION:
Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? >100 ft. from Septic System (identify source)

PROPOSED USE:
☒ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well

METHOD OF DRILLING: Air rotary + DHH

CASING DATA: ☒ Steel ☐ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
28 LB/FT	8 5/8 IN	0 FT	930 FT	11 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
Cement	270	15 lb./gal	0 ft.	930 ft.
		lb./gal	ft.	ft.

Describe grouting procedure: pressure grouted through casing

SCREEN: ☐ Perforated pipe ☐ Manufactured

Diameter IN Length FEET

Material

Slot Size Set From Feet to Feet

Other information

WAS A PACKER OR SEAL USED? ☐ YES ☒ NO

If so, what material?

Describe packer(s) and location?

DISINFECTION: Was well disinfected upon completion?
☒ YES, How: chlorine solution
Laboratory sent to for water quality analysis ☐ NO, Why Not?

Did not set pump

Well Owner:

Business Name: United Land Management

Address:

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
mostly SS yel. some shale	0	115
LS, SS + shale red to pink	115	248
LS shaley red to gray	248	307
SS yellow	307	344
LS gray, pink + white	344	597
LS white w/ purp shale	597	701
shale red	701	719
LS light gray to buff	719	1085

STATIC WATER LEVEL ≈ 800 Feet

If flowing: closed in pressure PSI

GPM flow through inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

Reduced Flowrate GPM

Can well be completely shut in?

WELL TEST DATA:

☐ Pumped Describe:

☐ Bailed air developed

☐ Other

Pumping Level Below Land Surface

1085 ft. After 2 Hrs. pumped 50 GPM

ft. After Hrs. pumped GPM

If pump installed, pump rate GPM

REMARKS

This well was drilled under license # 331

And this report is true and accurate.

Drilling firm Taylor Drilling Co.

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date:

Attachment B · Page 1

United Order of South Dakota (formerly United Land Management)

2008

MONTH	Water Usage(gallons)	Meter Reading
January	79,000	
February	79,000	
March	79,000	new meter -0-
April	65,600	64,000
May	271,200	129,600
June	532,200	400,800
July	717,300	933,000
August	918,500	1,650,300
September	406,700	2,568,800
October	249,100	2,975,500
November	152,300	3,224,600
December	140,000	3,376,900
		3,516,900
Total Water Used in 2008	2,813,520	

Attachment D Page 2

United Order of South Dakota			
2009			
	MONTH	Water Usage (gallons)	Meter Reading (end of month)
			3,516,900
	January	126,100	3,643,000
	February	147,000	3,790,000
	March	110,000	3,900,000
	April	145,600	4,045,600
	May	630,700	4,676,300
	June	1,407,200	6,083,500
	July	1,048,400	7,131,900
	August	1,134,200	8,266,100
	September	814,600	9,080,700
	October	205,900	9,286,600
	November	203,600	9,490,200
	December	234,200	9,724,400
	Total Water Used in 2009	6,207,500	

water rights from state = .21 cfs = 1.57 gps = 94.25gpm = 5,655 gal/hr

135,720 gallons per day = 49,537,800 gallons per year

(1,136 acre feet per year)

we used 142.5

Attachment D Page 3

United Order of South Dakota			
2010			
	MONTH	Water Usage (gallons)	Meter Reading (end of month)
			9,724,400
	January	223,300	9,947,700
	February	105,100	10,052,800
	March	97,200	10,150,000
	April	150,200	10,300,200
	May	458,700	10,758,900
	June	530,100	11,289,000
	July	1,946,000	13,235,000
	August	2,040,500	15,275,500
	September	1,371,300	16,646,800
	October	603,200	17,250,000
	November	200,000	17,450,000
	December	281,300	17,731,300
	Total Water Used in 2010	8,006,900	

water rights from state = .21 cfs = 1.57 gps = 94.25gpm = 5,655 gal/hr

135,720 gallons per day = 49,537,800 gallons per year

(1,136 acre feet per year)

Attachment C Page 1

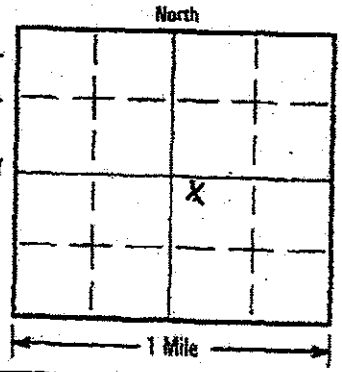
SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NW¼ SE¼ Sec 10 Twp 65 Rg 3E

County Custer

Please mark well location with an "X"



Well Completion Date

10-20-10

Well Owner: United Land Mgmt

Business Name:

Address:

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? > 100 ft. from Septic System (identify source).

PROPOSED USE:

☒ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well

METHOD OF DRILLING:

Air Rotary & DHH

CASING DATA: ☒ Steel ☐ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
40.50 LB/FT	10¾ IN	0 FT	933 FT	14 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
Cement	700	15 lb./gal	0 ft.	933 ft.
		lb./gal	ft.	ft.

Describe grouting procedure: cement pressure grouted through casing

SCREEN: ☐ Perforated pipe ☐ Manufactured

Diameter IN Length FEET

Material

Slot Size Set From Feet to Feet

Other information

WAS A PACKER OR SEAL USED? ☐ YES ☒ NO

If so, what material?

Describe packer(s) and location?

DISINFECTION: Was well disinfected upon completion?

☒ YES, How: chlorine solution

☐ NO, Why Not?

Laboratory sent to for water quality analysis

pump not installed

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
see attachment		

STATIC WATER LEVEL 2 800 Feet

If flowing: closed in pressure PSI

GPM flow through inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

Reduced Flowrate GPM

Can well be completely shut in?

WELL TEST DATA:

☐ Pumped ☐ Bailed ☐ Other

Describe: air developed

Pumping Level Below Land Surface

1080 ft. After 2 Hrs. pumped 25 GPM

ft. After Hrs. pumped GPM

If pump installed, pump rate GPM

REMARKS

RECEIVED
FEB 11 2011
WATER RIGHTS PROGRAM

This well was drilled under license # 331

And this report is true and accurate.

Drilling firm Taylor Drilling Co.

Signature of License Representative:

Ralf Taylor

Signature of Well Owner or Equitable Property Holder:

Date:

Lithology for United Land Management water well completed October 20, 2010

0	to	92	SS, yellow, orange & tan
92	to	205	mostly LS, some SS & Shale, red, pink, lavender & white
205	to	220	Shale, red
220	to	300	LS, Shaley, red to gray
300	to	332	SS, yellow
332	to	602	LS, gray, pink & white
602	to	620	Shale, red to purple
620	to	695	LS, white
695	to	715	Shale, red
715	to	1078	LS, light gray to buff (Madison)
1078	to	1081	Siltstone, lavender (Englewood)

Attachment D

Well Water Meter Log Well # 1 *United Order of South Dakota*

Date	Time	Meter Reading	Taken By
6/30/14	1:00 PM	47403000	
7/18/14	9:27 PM	482477 - -	
7/26/14	1:43 PM	483679	
7/28/14	6:05 AM	483928 - -	
8/4/14	10:38 AM	489898 - -	
8/22/14	7:50 AM	505429 - -	
8/27/14	1:20 PM	509660 - -	
9/17/14	10:19 AM	518310 - -	
9/26/14	3:18 PM	523438 - -	
10/10/14	7:20 AM	525215 - -	
10/13/14	2:24 PM	525584 - -	
10/17/14	2:53 PM	525843 - -	
10/22/14	6:07 PM	526644 - -	
10/28/14	5:46 PM	527201 - -	
10/31/14	1:00 PM	527361 - -	
11/4/14	3:06 PM	527786 - -	
11/24/14	8:00 AM	528935 - -	
11/27/14	6:10 PM	529020 - -	
12/2/14	12:46 PM	529242 - -	
12/11/14	6:10 PM	529634 - -	
1/3/15	5:19 AM	530610 - -	
1/24/15	7:02 AM	532421 - -	
1/26/15	1:10 PM	532628 - -	
2/7/15	11:36 AM	533296 - -	
2/16/15	6:06 PM	533692 - -	