



State of Idaho

DEPARTMENT OF WATER RESOURCES

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BRAD LITTLE
Governor

GARY SPACKMAN
Director

December 10, 2021

JEFFRY W McKEE
6055 WOLF TRAIL
CELINA, TX 75009

RE: WATER RIGHT PERMIT 69-11539

Dear Mr. McKee,

The Department of Water Resources is reviewing the permit referenced above prior to issuing a water right license. By issuing a license, the Department confirms that water right has been established in compliance with the terms of the permit. During the field exam conducted on October 8, 2019 the pond was determined to be an on-stream pond and the point of diversion (POD) was identified at the outlet (20N 03W 26 NESE) rather than the inlet (20N 03W 26 SENE) as described in the application for permit. Unfortunately, the outlet is on the adjacent quarter-quarter and before a license can be issued, your permit must be amended to depict your water right as it was actually developed.

The enclosed Application for Amendment form depicts the point of diversion and place of use and other information as it will appear on the license when issued. Please review the amendment form carefully. If you concur with the information presented, please sign the form and return with the \$100.00 filing fee by July 12th, 2021.

Additionally, the pond intercepts groundwater which is a different water source. At this time in the licensing process we cannot amend the permit to include this water source, but you can file for an additional application for permit. This will ensure that if the wastewater is ever withdrawn or eliminated, yet the pond still has water in it, that the use of water will still be in compliance.

If you do not concur, or if you have any questions about this information, please contact me as soon as possible. My telephone number is 208-287-4842.

Sincerely,

Kellie Smith
Technical Hydrologist

A handwritten signature in cursive script that reads 'Kellie Smith'.

Enclosures

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 69-11539

Exam Date: 10/8/19

1. Current Owner:
JEFFRY W MC KEE 1522 PRAIRIE VIEW DR ALLEN TX 75009
2. Accompanied by: Ben Warner
Phone No:
Address:
Relationship to permit Holder: neighbor/caretaker

3. **SOURCE:**
WASTE WATER

Tributary
BEAR CREEK

Method of Determination: Field Exam (observation), Historical Use Information, Aerial Imagery, USGS Map

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
69-11504	Bear Creek	Irrigation	GIS
69-11504	Bear Creek	Stockwater	GIS
69-11505	Dry Gulch	Stockwater	GIS

Comments: 69-11505 This is a water right for irrigation (0.42 cfs), and stockwater for 100 range cattle (0.02 cfs) from Dry Gulch (owner is Jeffry McKee) for 21.3 acres. The source is called "Dry Gulch" which is on the east side of the Bear River up slope in the foothills of the mountain range. In backfile (parent right 69-4011) Remarks "Stockwater points of diversion are Bear Creek, Ditches, and spring and snow runoff in 'Dry Gulch'". The two PODs for this water right are located in the gulch on the opposite side of the river from the Bear Ditch and does not include the Bear Creek as a source. These PODs are on the East side of the Bear River on the McKee property, The property owned by McKee is two plots of land mostly on the east side of the river. The shape for the POU extends well beyond the possible use by the cattle overlapping with this POU being licensed.

69-11504 This is a water right for irrigation (0.42 cfs), and stockwater for 100 range cattle (0.02 cfs) from Bear Creek (owner is Jeffry McKee) for 7.2 acres. The backfile shows POD is through the Bear Creek Community Ditch. There is no overlap from this water right. Ben described that the irrigation right portion for Mr. McKee (69-11504) is conveyed through a pipe that comes down from the community ditch and under the road to the pasture area. I was not able to find the pipe from the main ditch, but did see the culvert that goes under the road and turns to parallel the road and comes back out onto the McKee property above the field to the west of the structures. Based on the location of the culvert (where the unnamed stream and wastewater flow under the road and go on to fill the pond for this permit), this irrigation water right is being initially conveyed from the community ditch through the old mill pond and drainage, but it is delivered to the field prior to entering the stockwater pond area. My interpretation is that the field (when stock are present) is watered primarily by flood irrigation or small handlines and hose to fill the stockwater drink tank, and does not overlap with this POU being licensed.

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

WASTE WATER NE¼ SE¼, Sec. 26, Twp 20N, Rge 03W, B.M. ADAMS County

Method of Determination:

PLACE OF USE: STOCKWATER STORAGE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
20N	03W	26				X									X				

Method of Determination:

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

 x Indicate weir size/pipe as applicable.

Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

 x Aerial Photo Attached (required for irrigation of 10+ acres). x Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Flowtracker2						Distribution

2. Measurements: While this outlet was quite narrow (short transect) I was able to get a rough discharge measurement, using the Flowtracker2 maintained by the distribution section, at the outlet of 0.08 cfs.

E. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method:

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} =$$

2. Volume Calculations for Other Uses:

The surface area for this pond was digitized and measured at 0.4 acres, using GIS imagery. The average depth is about 3 feet deep and overall, the total pond capacity is **1.2 AF**. This pond is intercepting groundwater for most of the year. Support for this is described further in the narrative. With this assertion, the seepage rate for calculating pond loss is 0.00 FT/DAY for an overall of **0 AFA** of Total Seepage Loss. The evaporation loss was calculated from the precipitation deficit data out of the Council NWS USC00102187 station. Overall evaporative loss is **0.63 AFA**. The total volume required is 1.83 AF which would round to **1.8 AF**.

G. NARRATIVE/REMARKS/COMMENTS

This permit was amended several times during the process to correct the storage volume. The Bear community is a rural area with long generational history. There is no water district in this area.

I met with Ben Warner, Mr. McKee's neighbor and property caretaker on 10/8/2019 for the field examination. Mr. Warner is 5th generation local to the Bear community and provided valuable information for this system. Mr. McKee has purchased the place and rented it out for a couple of years, but has yet to live in it, and will only be moving out there this upcoming year (2020).

The main source of irrigation water for this community is a gravity fed single diversion off the Bear River, that is then conveyed through a canal that is locally known as "The Bear Community Ditch". Water users divert water from the canal where it approaches their property. To better

understand the wastewater source I investigated the large pond, community ditch, and unnamed stream with Ben Warner on 10/8/2019. Currently the pond is used as a distribution pond for that water user and is filled from seepage from the draw (unnamed stream) and the ditch. This pond collects drainage from the unnamed creek, which flows seasonally, from seepage along the Bear Community Ditch, and from a direct diversion off the ditch. There are issues in the community regarding delivery from the ditch and conveyance issues with excess seepage and seasonal blowouts etc. They are going to address some this year by lining a section with clay. I believe that the whole length of the ditch suffers from seepage because the area is naturally springy.

The system diagram is sketched in Image 5 (attached) showing changes in the wetland area before and after the construction of the stockwater storage pond. The water source for this permit is wastewater originating from the community ditch, via the large pond. The wastewater from the unnamed stream and wastewater from anthropogenic activities on the hillside converge to flow into the stockwater storage pond and through to the Bear River. Remaining wastewater flows through the system to the Bear River apparently the same as it did prior to the construction of the pond (personal communication with Mr. Warner during field exam). Looking at an older USGS quad [Cuprum R55], the drainage is represented by a blue line titled "unnamed stream" that begins in the draw above the community ditch, and continues to Bear Creek with no impoundments. Currently, the unnamed stream flows until about June and some of the drainage water enters the community ditch feeding that supply, as described by Mr. Warner. The remaining flow and seepage collect in a large pond with an estimated 15 feet tall earthen dam. Ben said this large pond used to be a mill pond from when that property was an old sawmill. Based on aerial imagery, this pond was constructed sometime between 2006 and 2009. Flow leaves the large pond primarily from seepage as there was no apparent outlet or drainpipe but there was some water trickling down slope for a couple hundred feet before it meets the road, goes under the road, and then enters the stock water storage pond being licensed.

There are also two other inlets conveying flow from the riparian wetland area to the pond. All incoming surface water appears to be wastewater from irrigation by several neighbors upslope. Ben thinks that if the neighbors stopped irrigating the field would go dry. If the pond were not there, the incoming wastewater would go back to the river. The pond should be considered an in-stream storage pond and therefore no diversion to storage component is required.

Additionally, this pond sits at a natural low point in the floodplain of the Bear River and most likely intercepts groundwater. The outlet of this storage pond conveys flow directly to the Bear River. Mr. Warner told me that that they turned out the ditch on Sunday 10/6 and 48 hours later (the time of my field exam) there was still water coming down to the pond. If you examine a topographic map of the area there are many drainage. Specifically at the location of the pond which sits in a unique area with drainages on both sides of the river coming into the Bear at that location (see sketch, Image 6).

At the time of the field examination, I needed to measure the flow of water entering the pond. There were three areas where water was clearly flowing into the pond but I was not able to wade to those locations and the channels coming in were very shallow and with thick growing wetland vegetation (*Carex sp.* and *Typha sp.*). I didn't think that there was enough depth free from debris and vegetation that the flowtracker would get a good reading. I used the basic hydrologic principle that $IN - OUT = \Delta \text{ STORAGE}$. If we assume there is no change in storage then $IN = OUT$. The outlet looked more manageable for a measurement. While this outlet was quite narrow (short transect) I was able to get a rough discharge measurement, using the Flowtracker2, at outlet of 0.08 cfs.

If the pond were not there, the incoming wastewater would go back to the river. This makes the pond more on stream storage pond and therefore no diversion to storage component is required.

Explanation of the attached calculations for pond capacity, seepage, evaporation, and storage from the pond loss spreadsheet as follows.

Pond Capacity:

The surface area for this pond was digitized and measured at 0.4 acres, using GIS imagery. The average depth is about 3 feet deep and overall, the total pond capacity is **1.2 AF**.

Soils-Seepage:

The Web Soil Survey has no information and the STATSGO soils layer in GIS has a very broad soil texture classification of CL (inorganic low to medium plasticity clays) with 0.003 ft/day for this area. This is likely the value that was used during the permitting process to calculate the pond volume requirements. I disagree with the classification from the STATSGO layer. The soil in the area of the pond has a thick layer of organic material (very similar to peat moss), on top of cobble, lending to very high seepage. Mike Raymond who is the district conservationist at the Weiser River Soil & Conservation District, confirmed that this area has not been mapped. The difference between the seepage rate estimated during the permitting process and the higher seepage rate that the actual observed soils may have is large; when using the pond spreadsheet to calculate seepage rate which translates to exceedance of the total required volume.

The location of the pond is immediately adjacent to the Bear River and is in an active riparian floodplain. There are remnant channels all over and Ben describes that the river actively moves and makes new channels almost every year. The river is a braided type of river (Rosgen classification D or even D/A). I disagree that if the neighbors stopped irrigating, that the area would become dry. Based on the landscape location of the pond, the obligate wetland species noted nearby (*Carex spp.*, *Juncus spp.*, *Typha spp.* etc.), and the historic imagery, I suggest this pond is intercepting groundwater.

To support the assertion that the pond has intercepted ground water, I pulled the well log for the domestic well for the McKee property. The well D0054726 drilled 7/23/08 has a reported static water level at 10 ft and completed depth at 85 ft. This well is located about 4510 ft so that puts the water table at least within the range of 4500 ft-4425 ft. The pond location is at about 4472 ft which is well within the range of the water table as observed in late July of 2008.

Another nearby well drilled 10/07/1994 had a static water level at 57 ft and completed depth at 83 ft. The location of this well is less certain than the one drilled in 2008 but is a domestic well

for the neighbor down the road (Warner). The average elevation of that property is comparable to that of the pond; however, the property is down valley and has a different drainage basin contributing. The well report from 1994 suggests that in the drier months of the year the water table might be slightly lower. There may be some seasonality to the exact level of the water table during the year and some variations across years, but the information provided between these two well logs could point to changing pressure head and therefore times of a gaining system and then a losing system for the Bear River.

Without more detailed studies this is not certain, but this is enough qualitative evidence for me to be confident in stating that this pond is intercepting groundwater for most of the year. With this then the seepage rate for calculating pond loss is 0.00 FT/DAY for an overall of **0 AFA** of Total Seepage Loss.

Evaporation:

The evaporation loss was calculated from the precipitation deficit data out of the Council NWS USC00102187 station. Overall evaporative loss is **0.63 AFA**.

Multiple Fills:

The application describes that 10 goat, and 10 sheep will be the stock using this pond. Using the IDWR Standard, both goats and sheep are estimated to use 2 gpd. This equates to 14,600 gallons per year (or 0.04 AF) for the animals to drink. No multiple fills are required for this since there is no 'from storage' component.

Total Volume Required: 1.83 AF, ~1.8 AF

OVERLAP ANALYSIS:

This would be McKee's third water right for stockwater but first for 20 head of sheep/goat yet there is no apparent overlap.

69-11520 Jeffry McKee has this water right for instream stockwater from Bear Creek for 0.02 cfs and this does not overlap with this permit.

69-10012 This is a groundwater right for domestic use (Davis, Deborah and Edwards, Dennis) on McKee's property. There is no overlap, but Mr. McKee needs to file a change of ownership for this water right.

69-11505 This is a water right for irrigation (0.42 cfs), and stockwater for 100 range cattle (0.02 cfs) from Dry Gulch (owner is Jeffry McKee) for 21.3 acres. The source is called "Dry Gulch" which is on the east side of the Bear River up slope in the foothills of the mountain range. In backfile (parent right 69-4011) Remarks "Stockwater points of diversion are Bear Creek, Ditches, and spring and snow runoff in 'Dry Gulch'". The two PODs for this water right are located in the gulch on the opposite side of the river from the Bear Ditch and does not include the Bear Creek as a source. These PODs are on the East side of the Bear River on the McKee property, The property owned by McKee is two plots of land mostly on the east side of the river. There is no overlap from this water right.

69-11504 This is a water right for irrigation (0.42 cfs), and stockwater for 100 range cattle (0.02 cfs) from Bear Creek (owner is Jeffry McKee) for 7.2 acres. The backfile shows POD is through the Bear Creek Community Ditch. There is no overlap from this water right. Ben described that the irrigation right portion for Mr. McKee (69-11504) is conveyed through a pipe that comes down from the community ditch and under the road to the pasture area. I was not able to find the pipe from the main ditch but did see the culvert that goes under the road and turns to parallel the road and comes back out onto the McKee property. Based on the location of the culvert (where the unnamed stream and wastewater flow under the road and go on to fill the pond for this permit), I suspect this irrigation water right is being initially conveyed from the same system as is the pond, but it is delivered separately. There is a well (69-10012) for the domestic use in the name of Davis, so Mr. McKee will need to file a change of ownership form.

69-11545 Irrigation for 18.2 acres and stockwater for neighbor (Tietje, Lowell) which is split from 69-4000B which provides for the neighbor's (Warner, Ben) pond that has irrigation, stockwater, and fish propagation. The neighbor Tietje, Lowell whose pond is the wastewater source for this permit may not have a storage component on this water right. This pond has a

surface area of 0.4 acres and estimating an average depth of 3 ft would put the volume at 1.2 AF. The water right rate is $0.54 \text{ cfs} * 1.9835 = 1.07 \text{ AF/day}$; $[1.2 > 1.07]$; and based on the estimation above, the pond does not meet the 24-hr fill exemption. The estimation that the pond is 3 ft deep on average is a very conservative assumption, it is likely much deeper. The dam at the bottom of the pond is about 15 feet tall.

CONDITIONS/RECCOMENDATIONS

Since the POD for an on-stream pond should be located at the position where the holding back of water is, the POD will be at the outlet for this pond. Unfortunately this outlet is on the adjacent QQ and will then require a licensing amendment to change the POD from 20N 03W 26 SENE to 20N 03W 26 NESE. Additionally, the Beneficial Use Diversion to Storage and diversion rate will be removed since it is considered an on-stream pond. This does not require an amendment but will be reflected as well.

Since the calculations in the pond spreadsheet indicate the total volume required is 1.83 AF I would recommend the annual volume be licensed at 1.8 AF.

Since the pond intercepts groundwater, I recommend Mr. McKee file an application for permit since we cannot amend the source. This will ensure that if the wastewater is ever withdrawn or eliminated, yet the pond still has water in it, that the use will still be in compliance. I have written a letter to Mr. McKee to this effect (see file)

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
STOCKWATER STORAGE	01/01 to 12/31		1.8 AF

Totals:

1.8 AF

2. Recommended Amendments

☒ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION Kellie Smith - Hydrologist, Technical

Field Examiner's Name Kellie Smith Date 09.20.2021
 Reviewer _____ Date _____



Image 1. The culvert that conveys flow from the unnamed stream to the Bear Community Ditch. This view is looking at heading 340 degrees (upstream view).



Image 2. The Bear Community Ditch (flow from left to right). The head gate is the diversion from the ditch to the "Big Pond", view at heading 170 degrees.



Image 3. Standing on the western shore looking NW at 40 degrees where water enters the pond.



Image 4. Standing on the eastern shore looking NW at 45 degrees where water exits the pond and flows back into the Bear River.

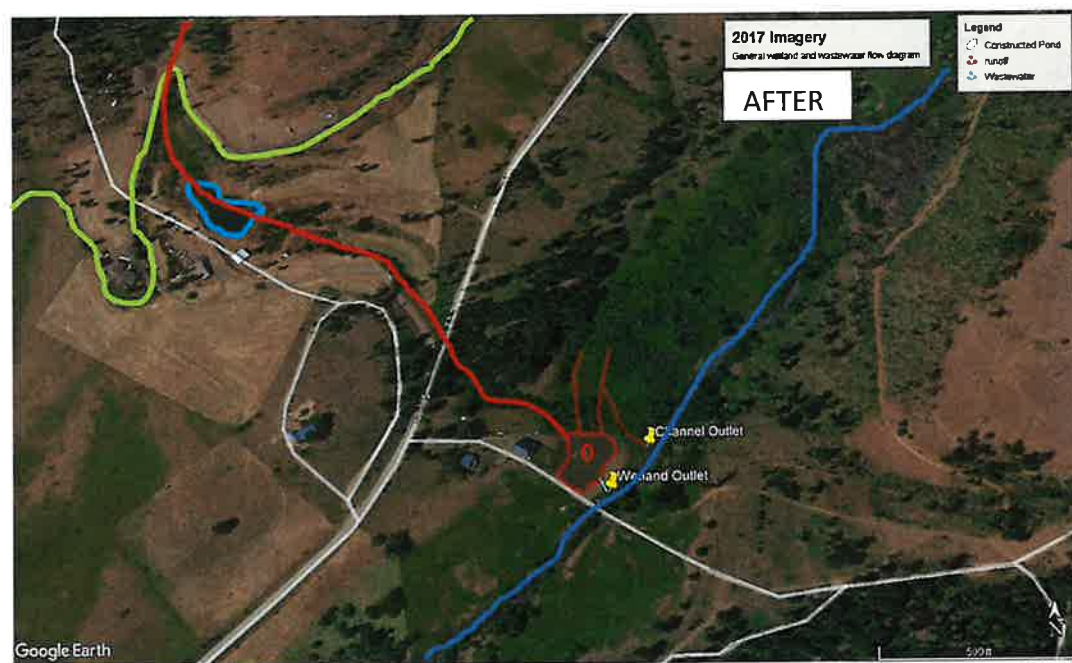
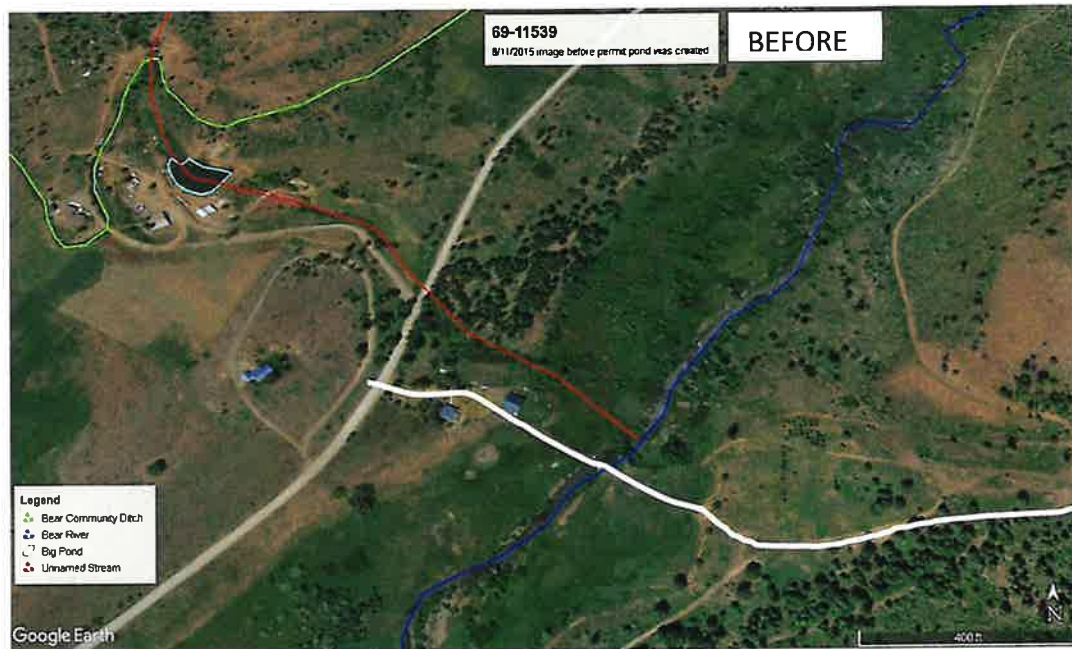


Image 5. The system diagram is sketched here showing the (estimated) change in the wetland area before and after the construction of the stockwater storage pond. The wastewater from the unnamed stream and wastewater from anthropogenic activities on the hillside converge to flow into the stockwater storage pond and through to the Bear River. Remaining wastewater flows through the system to the Bear River apparently the same as it did prior to the construction of the pond (personal communication with Mr. Warner during field exam).



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September 28, 2021

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1522 PRAIRIE VIEW DR
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If you do not concur, or if you have any questions about this information, please contact me as soon as possible. My telephone number is 208-287-4842.

Sincerely,

Kellie Smith
Technical Hydrologist

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Enclosures