

**BEFORE THE DEPARTMENT OF
NATURAL RESOURCES AND CONSERVATION
OF THE STATE OF MONTANA**

APPLICATION FOR BENEFICIAL WATER USE PERMIT NO. 43D 30103712 BY JON AND GAEL CARTER)))	PRELIMINARY DETERMINATION TO GRANT PERMIT
--	-------------	--

On September 9, 2015, Jon and Gael Carter (Applicant) submitted Application for Beneficial Water Use Permit No. 43D 30103712 to the Billings Water Resources Office of the Department of Natural Resources and Conservation (Department or DNRC) for all available flow and 71.6 AF for water spreading irrigation. The Department published receipt of the Application on its website. The Application was determined to be correct and complete as of December 29, 2015. An Environmental Assessment for this Application was completed on December 31, 2015.

INFORMATION

The Department considered the following information submitted by the Applicant.

Application as filed

- Application for Beneficial Water Use Permit, Form 600
- Maps:
 - Undated aerial photo showing proposed source, unnamed tributary (UT) Gold Creek, labeled as “Carter Creek”
 - Topographic map showing proposed point of diversion, conveyance, and place of use
- Water measurement records for UT Gold Creek from May through June 2015
- Photographs of measuring location dated May 29, 2015

Information within the Department’s Possession/Knowledge

- DNRC water right records
- USGS Water Resource Investigation Reports (WRIR) 85-4071 and 84-4143 containing regression equations used to estimate mean annual flow.

- USGS Gaging Station records for USGS 06209500 Rock Creek near Red Lodge MT from May 1, 1932 through August 31, 2015.

- Environmental Assessment dated December 31, 2015

The Department has fully reviewed and considered the evidence and argument submitted in this Application and preliminarily determines the following pursuant to the Montana Water Use Act (Title 85, chapter 2, part 3, MCA). **NOTE:** Department or DNRC means the Department of Natural Resources and Conservation; CFS means cubic feet per second; GPM means gallons per minute; AF means acre-feet; AC means acres; AF/YR means acre-feet per year; IWR means Irrigation Water Requirements; UT means unnamed tributary; and POD means point of diversion.

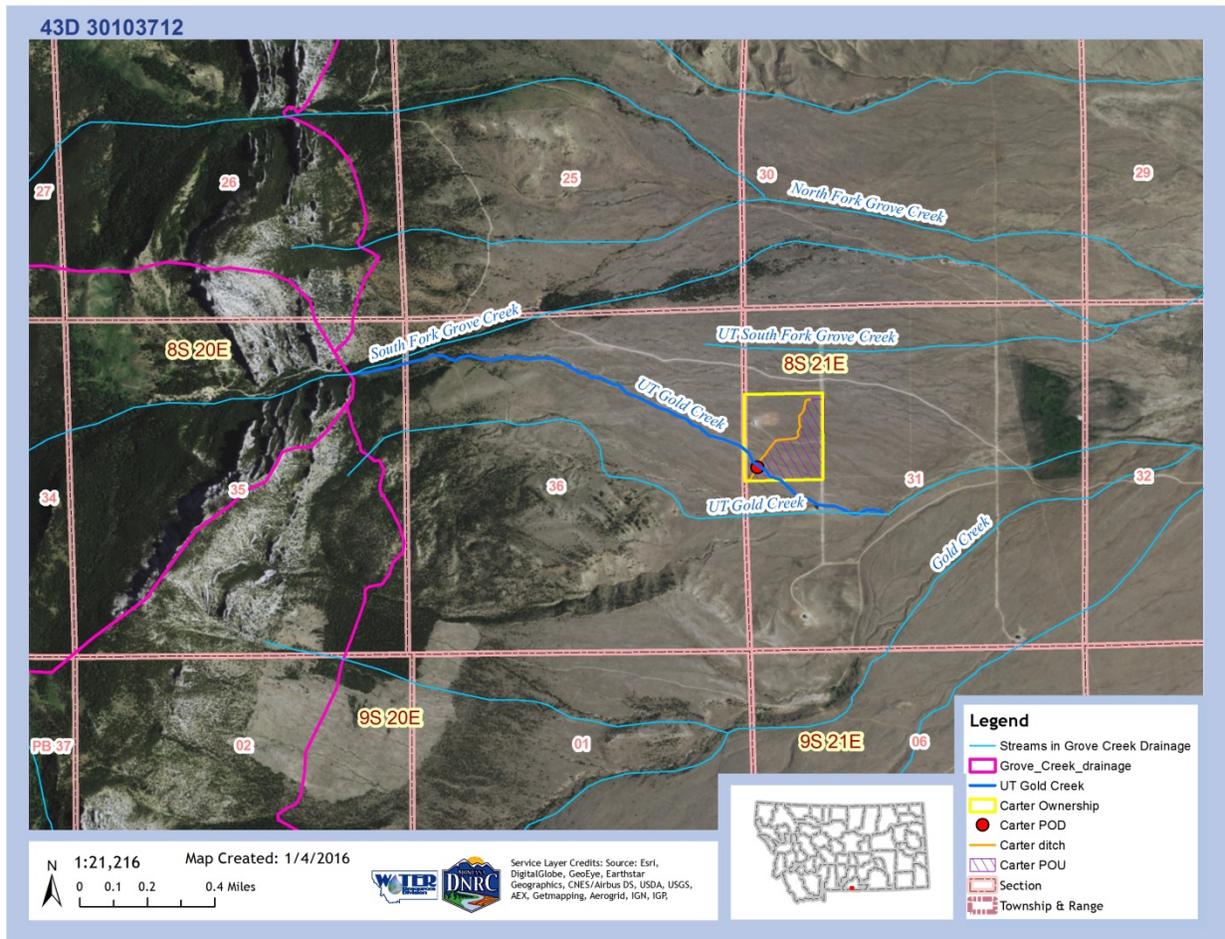
PROPOSED APPROPRIATION

FINDINGS OF FACT

1. The applicant proposes to divert water from a UT of Gold Creek, by means of a dike, from May 1 through June 30 up to 71.6 AF, from a point in Tract 12 Certificate of Survey No. 938 in Government Lot 2 (SWSWNW) Section 31, T8S, R21E, for water spreading irrigation use from May 1 through June 30. The applicant proposes to irrigate 20 acres. The place of use is generally located in Tract 12 Certificate of Survey No. 938 in Government lot 2 (SWNW) Section 31, T8S, R21E. This water spreading irrigation system would utilize all available flow from the source until the acres have been irrigated, up to 71.6 AF (3.58 AF/AC).

2. Water spreading irrigation is approximately 25 percent efficient per Dept. Historic Diverted Memo dated September 13, 2012. With a proposed application of 71.6 AF, approximately 17.9 AF would be consumed and approximately 53.7 AF would return to the source or to groundwater.

3. Below is a map showing the general location of the project, approximately 10 miles west southwest of Belfry, MT.



§ 85-2-311, MCA, BENEFICIAL WATER USE PERMIT CRITERIA

GENERAL CONCLUSIONS OF LAW

4. The Montana Constitution expressly recognizes in relevant part that:
- (1) All existing rights to the use of any waters for any useful or beneficial purpose are hereby recognized and confirmed.
 - (2) The use of all water that is now or may hereafter be appropriated for sale, rent, distribution, or other beneficial use . . . shall be held to be a public use.
 - (3) All surface, underground, flood, and atmospheric waters within the boundaries of the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses as provided by law.

Mont. Const. Art. IX, §3. While the Montana Constitution recognizes the need to protect senior appropriators, it also recognizes a policy to promote the development and use of the waters of the state by the public. This policy is further expressly recognized in the water policy adopted by the Legislature codified at § 85-2-102, MCA, which states in relevant part:

(1) Pursuant to Article IX of the Montana constitution, the legislature declares that any use of water is a public use and that the waters within the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses as provided in this chapter. . . .

(3) It is the policy of this state and a purpose of this chapter to encourage the wise use of the state's water resources by making them available for appropriation consistent with this chapter and to provide for the wise utilization, development, and conservation of the waters of the state for the maximum benefit of its people with the least possible degradation of the natural aquatic ecosystems. In pursuit of this policy, the state encourages the development of facilities that store and conserve waters for beneficial use, for the maximization of the use of those waters in Montana . . .

5. Pursuant to § 85-2-302(1), MCA, except as provided in §§ 85-2-306 and 85-2-369, MCA, a person may not appropriate water or commence construction of diversion, impoundment, withdrawal, or related distribution works except by applying for and receiving a permit from the Department. See § 85-2-102(1), MCA. An applicant in a beneficial water use permit proceeding must affirmatively prove all of the applicable criteria in § 85-2-311, MCA. Section § 85-2-311(1) states in relevant part:

... the department shall issue a permit if the applicant proves by a preponderance of evidence that the following criteria are met:

(a) (i) there is water physically available at the proposed point of diversion in the amount that the applicant seeks to appropriate; and

(ii) water can reasonably be considered legally available during the period in which the applicant seeks to appropriate, in the amount requested, based on the records of the department and other evidence provided to the department. Legal availability is determined using an analysis involving the following factors:

(A) identification of physical water availability;

(B) identification of existing legal demands on the source of supply throughout the area of potential impact by the proposed use; and

(C) analysis of the evidence on physical water availability and the existing legal demands, including but not limited to a comparison of the physical water supply at the proposed point of diversion with the existing legal demands on the supply of water.

(b) the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. In this subsection (1)(b),

adverse effect must be determined based on a consideration of an applicant's plan for the exercise of the permit that demonstrates that the applicant's use of the water will be controlled so the water right of a prior appropriator will be satisfied;

(c) the proposed means of diversion, construction, and operation of the appropriation works are adequate;

(d) the proposed use of water is a beneficial use;

(e) the applicant has a possessory interest or the written consent of the person with the possessory interest in the property where the water is to be put to beneficial use, or if the proposed use has a point of diversion, conveyance, or place of use on national forest system lands, the applicant has any written special use authorization required by federal law to occupy, use, or traverse national forest system lands for the purpose of diversion, impoundment, storage, transportation, withdrawal, use, or distribution of water under the permit;

(f) the water quality of a prior appropriator will not be adversely affected;

(g) the proposed use will be substantially in accordance with the classification of water set for the source of supply pursuant to 75-5-301(1); and

(h) the ability of a discharge permit holder to satisfy effluent limitations of a permit issued in accordance with Title 75, chapter 5, part 4, will not be adversely affected.

(2) The applicant is required to prove that the criteria in subsections (1)(f) through (1)(h) have been met only if a valid objection is filed. A valid objection must contain substantial credible information establishing to the satisfaction of the department that the criteria in subsection (1)(f), (1)(g), or (1)(h), as applicable, may not be met. For the criteria set forth in subsection (1)(g), only the department of environmental quality or a local water quality district established under Title 7, chapter 13, part 45, may file a valid objection.

To meet the preponderance of evidence standard, “the applicant, in addition to other evidence demonstrating that the criteria of subsection (1) have been met, shall submit hydrologic or other evidence, including but not limited to water supply data, field reports, and other information developed by the applicant, the department, the U.S. geological survey, or the U.S. natural resources conservation service and other specific field studies.” § 85-2-311(5), MCA (emphasis added). The determination of whether an application has satisfied the § 85-2-311, MCA criteria is committed to the discretion of the Department. Bostwick Properties, Inc. v. Montana Dept. of Natural Resources and Conservation, 2009 MT 181, ¶ 21. The Department is required grant a permit only if the § 85-2-311, MCA, criteria are proven by the applicant by a preponderance of the evidence. Id. A preponderance of evidence is “more probably than not.” Hohenlohe v. DNRC, 2010 MT 203, ¶¶33, 35.

6. Pursuant to § 85-2-312, MCA, the Department may condition permits as it deems necessary to meet the statutory criteria:

(1) (a) The department may issue a permit for less than the amount of water requested, but may not issue a permit for more water than is requested or than can be beneficially used without waste for the purpose stated in the application. The department may require modification of plans and specifications for the appropriation or related diversion or construction. The department may issue a permit subject to terms, conditions, restrictions, and limitations it considers necessary to satisfy the criteria listed in 85-2-311 and subject to subsection (1)(b), and it may issue temporary or seasonal permits. A permit must be issued subject to existing rights and any final determination of those rights made under this chapter.

E.g., Montana Power Co. v. Carey (1984), 211 Mont. 91, 96, 685 P.2d 336, 339 (requirement to grant applications as applied for, would result in, “uncontrolled development of a valuable natural resource” which “contradicts the spirit and purpose underlying the Water Use Act.”); see also, In the Matter of Application for Beneficial Water Use Permit No. 65779-76M by Barbara L. Sowers (DNRC Final Order 1988)(conditions in stipulations may be included if it further compliance with statutory criteria); In the Matter of Application for Beneficial Water Use Permit No. 42M-80600 and Application for Change of Appropriation Water Right No. 42M-036242 by Donald H. Wyrick (DNRC Final Order 1994); Admin. R. Mont. (ARM) 36.12.207.

7. The Montana Supreme Court further recognized in Matter of Beneficial Water Use Permit Numbers 66459-76L, Ciotti: 64988-G76L, Starnier (1996), 278 Mont. 50, 60-61, 923 P.2d 1073, 1079, 1080, *superseded by legislation on another issue*:

Nothing in that section [85-2-313], however, relieves an applicant of his burden to meet the statutory requirements of § 85-2-311, MCA, before DNRC may issue that provisional permit. Instead of resolving doubts in favor of appropriation, the Montana Water Use Act requires an applicant to make explicit statutory showings that there are unappropriated waters in the source of supply, that the water rights of a prior appropriator will not be adversely affected, and that the proposed use will not unreasonably interfere with a planned use for which water has been reserved.

See also, Wesmont Developers v. DNRC, CDV-2009-823, First Judicial District Court, *Memorandum and Order* (2011). The Supreme Court likewise explained that:

.... unambiguous language of the legislature promotes the understanding that the Water Use Act was designed to protect senior water rights holders from encroachment by junior appropriators adversely affecting those senior rights.

Montana Power Co., 211 Mont. at 97-98, 685 P.2d at 340; see also Mont. Const. art. IX §3(1).

8. An appropriation, diversion, impoundment, use, restraint, or attempted appropriation, diversion, impoundment, use, or restraint contrary to the provisions of § 85-2-311, MCA is invalid. An officer, agent, agency, or employee of the state may not knowingly permit, aid, or assist in any manner an unauthorized appropriation, diversion, impoundment, use, or other restraint. A person or corporation may not, directly or indirectly, personally or through an agent, officer, or employee, attempt to appropriate, divert, impound, use, or otherwise restrain or control waters within the boundaries of this state except in accordance with this § 85-2-311, MCA. § 85-2-311(6), MCA.

9. The Department may take notice of judicially cognizable facts and generally recognized technical or scientific facts within the Department's specialized knowledge, as specifically identified in this document. ARM 36.12.221(4).

Physical Availability

FINDINGS OF FACT

10. The Applicant provided measurements of flow in the UT of Gold Creek from June 4, 2015 through June 24, 2015 using a 90 degree V-notch weir. The Applicant also provided photographs of the flow in the source dated May 29, 2015 showing a tape measure stretched across the stream giving channel width and placed in the stream showing depth. Department staff did a site visit on June 10, 2015 to confirm that the weir was properly placed and was plumb and level. At that time, the staff gage on the weir read 6.0 inches (0.5 feet) equivalent to 0.446 CFS. Records maintained by John Carter indicate the weir was undersized and water flowed over the top when placed on June 4, 2015. The weir could read up to 8 inches (.67 feet) equivalent to 0.922 CFS and the flow was thus greater than that. Pictures taken May 29, 2015 indicate the stream was 5 feet wide and 0.5 feet deep. The channel is approximately triangular. Using Manning's equation with a slope of 0.103 (determined by DNRC using topographic map), the

flow was $1.5/.04 \times 1.25 \times (1.25/5.1)^{2/3} \times 0.103^{1/2} = 5.89$ CFS. The flow decreased exponentially between May 29th, when the water first reached Mr. Carter’s property, and June 24th, when the flow no longer reached the weir.

Table 1. Applicant’s measurements of flow in UT Gold Creek at proposed POD

Date	Staff Gage (Feet)	Flow (CFS)
5/29/2015	N/A	5.89*
6/4/2015	Overtopped	>0.922
6/7/2015	0.625	0.671
6/10/2015	0.500	0.446
6/14/2015	0.427	0.307
6/23/2015	0.094	0.008
6/24/2015	0.000	0.000

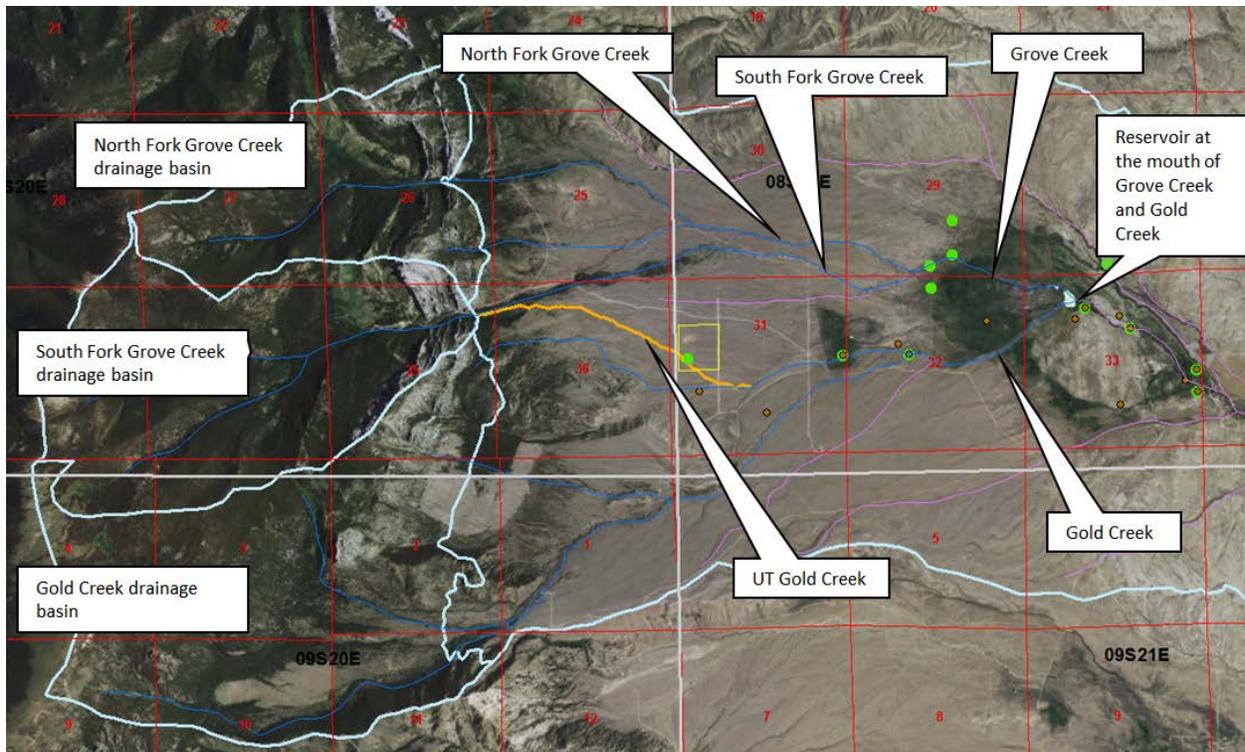
*calculated using Manning’s equation

11. The Department used *USGS WRIR 85-4071: A Method for Estimating Mean and Low Flows of Streams in National Forests of Montana* and *USGS WRIR 84-4143: A Method for Estimating Mean Annual Runoff of Ungaged Streams Based on Basin Characteristics in Central and Eastern Montana* drainage area information paired to a gaged stream in a similar type basin to validate the measurements.

12. The proposed source is a non-perennial stream originating as a branch off South Fork Grove Creek (alluvial fan) below the limestone Palisades on the east side of the Beartooth mountains in the Custer National Forest. This UT Gold Creek only flows at the point of diversion during snow melt runoff and significant rain events.

13. Department staff measured a flow of 0.375 CFS in South Fork Grove Creek on October 14, 2014 using a Marsh McBirney flow meter. The active channel width was 8.1 feet and the bank full width was 14.9 ft. At that time, the Department estimated approximately 30% of the flow was going down the UT of Gold Creek.

14. In order to analyze potential affects downstream to main stem Grove Creek, the Department estimated how much water is physically and legally available in the sources which combine to create Grove Creek. Grove Creek begins at the mouth of North Fork and South Fork Grove Creeks. Gold Creek merges with Grove Creek at a reservoir. The proposed source for this application takes water from a branch off of South Fork Grove Creek which then flows into Gold Creek. Below is a map illustrating the relationship of the sources to each other.



The colors depict the following:

- The dark blue lines represent streams which were analyzed for physical availability.
- Light blue lines represent drainage basins analyzed.
- Pink lines are streams which were not analyzed because they originate outside of the sub-drainage basins.
- Orange line is the unnamed tributary to Gold Creek proposed for appropriation.
- Yellow line is the Applicant's property where the proposed point of diversion and place of use are located.
- Green dots are existing irrigation points of diversion and brown dots are stock water points of diversion.

15. The USGS WRIR 85-4071 technique uses basin area in square miles, precipitation in inches and active channel width in feet to estimate mean annual flow. The Department compared the percentage of mean annual flow by month on Rock Creek at Red Lodge to estimate flow at the Palisades above the point where the UT of Gold Creek splits from South Fork Grove Creek. The Department then calculated 30% and 70% of that flow with 30% going down the UT and 70% going down South Fork Grove Creek. The USGS WRIR 85-4071 regression equation was run using a drainage basin (A) of 2.66 square miles, precipitation (P) of

28 inches and an active channel width (W) of 8.1 feet. The equation for South Fork Grove Creek is: Mean annual discharge in CFS = $0.025 * W^{0.956} A^{0.486} P^{0.699} = 3.05$ CFS.

16. South Fork Grove Creek joins with North Fork Grove Creek and becomes Grove Creek approximately 2.5 miles downstream from where each source leaves the Palisades. Flow and volume in North Fork Grove Creek were estimated using USGS WRIR 84-4143 which estimates mean annual flow based on drainage basin area in square miles (A), precipitation (P), and slope (S). The estimated flow and volume on North Fork Grove Creek were added to 70% of the estimated flow and volume on South Fork Grove Creek to estimate physical availability on Grove Creek.

17. Gold Creek leaves the Palisades and joins with Grove Creek approximately 4.3 miles downstream. Grove Creek and Gold Creek join together at a reservoir. Flow and volume in Gold Creek were estimated using USGS WRIR 84-4143 which estimates mean annual flow based on drainage basin area in square miles (A), precipitation (P) and slope (S). The Department used equation 3 in region 3. The equation is $0.0022 * A^{1.15} P^{1.78} S^{0.33}$. For North Fork Grove Creek A=1.55, P=28 and S = 358.05 and mean annual flow = 0.86 CFS. For Gold Creek A=3.54, P=28 and S=325.32 and mean annual flow = 2.16 CFS. The Department used USGS WRIR 84-4143 for North Fork Grove Creek and Gold Creek because active channel width is not known on these sources.

18. Estimates of physically available flow and volume in South Fork Grove Creek, Grove Creek, UT Gold Creek and Gold Creek will be used to evaluate legal availability downstream. All estimates are based on percentage of mean annual flow in Rock Creek at Red Lodge which is a gaged stream in a similar type basin.

Table 2. Physically Available Water in South Fork Grove Creek at the Palisades based on percentage of mean annual flow by month in Rock Creek near Red Lodge

Month	Percentage of Mean Annual	Estimated Discharge (CFS)	Estimated Discharge (AF)
May	128.18	3.91	239.97
June	346.27	10.56	627.34
Total			867.31

Below are the estimates of flow and volume in the UT of Gold Creek (30% of flow in South Fork Grove Creek at the Palisades), Grove Creek (North Fork Grove Creek plus 70% of South Fork Grove Creek) and Gold Creek.

Table 3. Physically Available Water in UT Gold Creek (30% of flow and volume in South Fork Grove Creek)

Month	Percentage of Mean Annual	Estimated Discharge (CFS)	Estimated Discharge (AF)
May	128.18	1.17	71.99
June	346.27	3.17	188.20
Total			260.19

Table 4. Physically Available Water in Grove Creek (North Fork Grove Creek plus 70% of South Fork Grove Creek) Above the Confluence with Gold Creek

Month	Percentage of Mean Annual	Estimated Discharge (CFS)	Estimated Discharge (AF)
May	128.18	3.84	235.64
June	346.27	10.37	616.03
Total			851.67

Table 5. Physically Available Water in Gold Creek

Month	Percentage of Mean Annual	Estimated Discharge (CFS)	Estimated Discharge (AF)
May	128.18	2.77	169.94
June	346.27	7.48	444.28
Total			614.22

19. The amount of water physically available in UT Gold Creek exceeds the requested volume throughout the period of diversion.

CONCLUSIONS OF LAW

20. Pursuant to § 85-2-311(1)(a)(i), MCA, an applicant must prove by a preponderance of the evidence that “there is water physically available at the proposed point of diversion in the amount that the applicant seeks to appropriate.”

21. It is the applicant’s burden to produce the required evidence. In the Matter of Application for Beneficial Water Use Permit No. 27665-411 by Anson (DNRC Final Order 1987)(applicant

produced no flow measurements or any other information to show the availability of water; permit denied); In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC., (DNRC Final Order 2005).

22. An applicant must prove that at least in some years there is water physically available at the point of diversion in the amount the applicant seeks to appropriate. In the Matter of Application for Beneficial Water Use Permit No. 72662s76G by John Fee and Don Carlson (DNRC Final Order 1990); In the Matter of Application for Beneficial Water Use Permit No. 85184s76F by Wills Cattle Co. and Ed McLean (DNRC Final Order 1994).

23. The Applicant has proven that water is physically available at the proposed point of diversion in the amount Applicant seeks to appropriate. § 85-2-311(1)(a)(i), MCA. (FOF 10-19)

Legal Availability:

AREA OF AFFECT

The area of affect for this application is approximately 2.3 miles downstream from the proposed point of diversion, to the confluence of Grove Creek and Gold Creek. There is a 49.3 AF reservoir located at the mouth of Grove and Gold Creeks which regulates flow downstream. Potential impacts from this proposed appropriation would not be seen below the reservoir.

FINDINGS OF FACT

24. As stated in FOF 14 above, in order to analyze potential affects downstream to main stem Grove Creek, the Department must estimate how much water is physically and legally available in the sources which combine to create Grove Creek. South Fork Grove Creek joins with North Fork Grove Creek and becomes Grove Creek approximately 2.5 miles downstream from where each source leaves the Palisades. Gold Creek leaves the Palisades and joins with Grove Creek at a reservoir approximately 4.3 miles downstream. UT Gold Creek leaves South Fork Grove Creek just below the Palisades and consists of approximately 30% of the flow of South Fork Grove Creek. UT Gold Creek flows approximately 1.3 miles to the Applicant’s proposed point of diversion and another .3 miles to its mouth with another UT Gold Creek.

Table 6. Legal Demands (water rights) on Grove Creek

Water Right Number	Flow Rate (CFS)	Volume (AF)	Volume per month (AF)

ADJ 43D 208837-00	8.75	928.86	154.81
ADJ 43D 208840-00	0.00	106.60	17.77
ADJ 43D 208843-00	0.00	20.58	1.72
ADJ 43D 208846-00	0.08	20.58	1.72

Table 7. Legal Demands (water rights) on Gold Creek

Water Right Number	Flow Rate (CFS)	Volume (AF)	Volume per month (AF)
ADJ 43D 197687-00	7.5	293.18	48.86
ADJ 43D 197692-00	0.08	20.58	1.72

Table 8. Legal Demands (water rights) on UT Gold Creek

Water Right Number	Flow Rate (CFS)	Volume (AF)	Volume per month (AF)
NA 43D 30013193	0.00	5.01	0.42

25. Below are comparisons of the physical water supply and the legal demands on the sources analyzed for physical and legal availability.

Table 9. Grove Creek (calculated as all of North Fork Grove Creek and 70% of South Fork Grove Creek)

Month	Physical Availability (CFS)	Existing Legal Demands (CFS)	Physical minus Legal (CFS)	Physical Availability (AF)	Existing Legal Demands (AF)	Physical minus Legal (AF)
May	3.84	8.83	-4.99	235.64	176.01	59.63
June	10.37	8.83	1.54	616.03	176.01	440.02

There are 4 legal demands on Grove Creek within the area of potential affect which ends at a 49.3 AF reservoir at the mouth of Grove and Gold Creeks. Two of the legal demands (43D 208843-00 and 43D208846-00) are for stock drinking from a reservoir or from a ditch. The animal units are the same for both claims and are likely the same herd. Claim numbers 43D 208840-00 and 43D 208837-00 are supplemental rights which mean they have overlapping places of use. The examination worksheet and interview report form in claim no. 43D 208837-00 indicate the type of irrigation system is water spreading rather than sprinkler/flood and therefore would not have a flow rate but be administered by volume. There are nine points of diversion on claim no. 43D 208837-00, 4 are above the reservoir and are located on South Fork Grove Creek, Grove Creek and UT Grove Creek, 5 are below the reservoir. Because there are points of diversion on multiple sources, it is impossible for the Dept. to determine how much flow and volume should be attributed to each source. Claim no. 43D 208840-00 lists 3 reservoirs, 2 on-stream and 1 off-stream. The locations of the reservoirs are on 3 different sources, Grove Creek, Gold Creek and an UT of Grove Creek. Because these are on different sources, it is impossible for the Dept. to determine how much flow and volume should be attributed to each source. Claims 43D 208843-00 and 43D 208840-00 are multiple uses of the same right. Claims 43D 208846-00 and 43D 208837-00 are multiple uses of the same right. Multiple uses do not allow an appropriator to increase the extent of their right, it decrees them the right to alternate and exchange between uses in accord with historical practices.

Table 10. Gold Creek

Month	Physical Availability (CFS)	Existing Legal Demands (CFS)	Physical minus Legal (CFS)	Physical Availability (AF)	Existing Legal Demands (AF)	Physical minus Legal (AF)
May	2.77	7.58	-4.81	169.94	50.58	119.36
June	7.48	7.58	-0.10	444.28	50.58	393.70

There are 2 legal demands on Gold Creek within the area of potential affect which ends at a 49.3 AF reservoir located at the mouth of Grove and Gold Creeks. Claim no. 43D 197692-00 is for stock drinking directly from Gold Creek and ditches. The legal descriptions for the points of

diversion indicate multiple UTs as sources as well as Gold Creek. As filed this right claims the same number of animal units as the claims on Grove Creek and is likely the same herd. Claim no. 43D 197687-00 has 3 points of diversion on UTs and main stem Gold Creek. The examination worksheet and interview report form in claim no. 43D 197687-00 indicate the type of irrigation system is water spreading rather than sprinkler/flood and therefore would not have a flow rate but be administered by volume. Claim nos. 43D 197692-00 and 43D 197687-00 are multiple uses of the same right. Multiple uses do not allow an appropriator to increase the extent of their right, it decrees them the right to alternate and exchange between uses in accord with historical practices.

Table 11. UT Gold Creek

Month	Physical Availability (CFS)	Existing Legal Demands (CFS)	Physical minus Legal (CFS)	Physical Availability (AF)	Existing Legal Demands (AF)	Physical minus Legal (AF)
May	1.17	0	1.17	71.99	0.42	71.57
June	3.17	0	3.17	188.20	0.42	187.78

26. The comparison of physical and legal availability on Grove Creek and Gold Creek indicate that flow is not legally available in May on Grove Creek and that flow is not legally available on Gold Creek in May or June. The comparison shows that volume is legally available on all sources in May and June.

27. This application proposes to divert 71.6 AF from UT Gold Creek from May to June. While only 71.57 AF are legally available in May, the Applicant would not divert his entire requested volume in one month. There is one downstream legal demand on this UT. That right is Stockwater Permit No. 43D 30013193 for an on stream pit with a capacity of 1.67 AF and an annual volume of 5.01 AF. This right is located at the mouth of two unnamed tributaries of Gold Creek and does not receive all of its annual volume from the source proposed in this application. There is a spring located on the UT of Gold Creek not proposed in this application that contributes water to the stockwater pit year round.

28. The soils under UT of Gold Creek and the Applicants' property are entirely Hanson extremely stony loam, sloping. This soil type is well drained with a moderately high to high capacity to transmit water and has more than 80 inches to the depth of the water table. Frequency of flooding or ponding is none. Department staff conducted an infiltration test on June 10, 2015 by pouring 5 gallons of water into a 12 inch diameter post hole. The soil absorbed all of the water in 28 minutes and 58 seconds. The infiltration rate at that point was 4.9×10^{-4} ft/sec. Department Hydrospecialist, Mark Elison, calculated infiltration rates on the Applicants' proposed 20 acres using the information collected on the site visit. A seepage rate of 0.00049 ft/sec over 20 AC (871,200 ft²) equates to 426.89 CFS or 845.2 AF/ Day. The high infiltration rate of this soil type is consistent with the Applicants' measurements (FOF 10) showing a consistent decrease in discharge throughout the period of measurement.
29. The Applicant submitted an affidavit stating that he has been frequenting the UT Gold Creek area since 1977 and has never witnessed the UT Gold Creek run more than 200 yards past the downstream stockwater pond discussed in FOF 27.
30. To summarize the above findings of fact; the downstream legal demands on the analyzed sources are multiple uses of the same rights, are located on multiple sources, and are most likely water spreading systems which are more dependent on volume than flow rate. Volume is legally available in all months throughout the proposed period of diversion.

CONCLUSIONS OF LAW

31. Pursuant to § 85-2-311(1)(a), MCA, an applicant must prove by a preponderance of the evidence that:
- (ii) water can reasonably be considered legally available during the period in which the applicant seeks to appropriate, in the amount requested, based on the records of the department and other evidence provided to the department. Legal availability is determined using an analysis involving the following factors:
 - (A) identification of physical water availability;
 - (B) identification of existing legal demands on the source of supply throughout the area of potential impact by the proposed use; and
 - (C) analysis of the evidence on physical water availability and the existing legal demands, including but not limited to a comparison of the physical water supply at the proposed point of diversion with the existing legal demands on the supply of water.

E.g., ARM 36.12.101 and 36.12.120; Montana Power Co., 211 Mont. 91, 685 P.2d 336 (Permit granted to include only early irrigation season because no water legally available in late irrigation season); *In the Matter of Application for Beneficial Water Use Permit No. 81705-g76F by Hanson* (DNRC Final Order 1992).

32. It is the applicant's burden to present evidence to prove water can be reasonably considered legally available. Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7 (the legislature set out the criteria (§ 85-2-311, MCA) and placed the burden of proof squarely on the applicant. The Supreme Court has instructed that those burdens are exacting.); see also Matter of Application for Change of Appropriation Water Rights Nos. 101960-41S and 101967-41S by Royston (1991), 249 Mont. 425, 816 P.2d 1054 (burden of proof on applicant in a change proceeding to prove required criteria); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*, (DNRC Final Order 2005) (it is the applicant's burden to produce the required evidence.); *In the Matter of Application for Beneficial Water Use Permit No. 41H 30023457 by Utility Solutions, LLC* (DNRC Final Order 2007)(permit denied for failure to prove legal availability); see also ARM 36.12.1705.

33. Applicant has proven by a preponderance of the evidence that water can reasonably be considered legally available during the period in which the applicant seeks to appropriate, in the amount requested, based on the records of the Department and other evidence provided to the Department. § 85-2-311(1)(a)(ii), MCA. (FOF 24-30)

Adverse Effect

FINDINGS OF FACT

34. The Applicant's plan to not create adverse effect is to wait until the downstream reservoir is full before closing his slide gate to commence irrigation of his property. If call is made he can open the slide gate and allow water to flow downstream towards Gold Creek and Grove Creek.

35. The physically and legally available flow and volume of water in UT Gold Creek exceed the existing legal demands throughout the proposed period of diversion. The volume of water physically and legally available over the combined months of May and June exceed the amounts requested in this application.

CONCLUSIONS OF LAW

36. Pursuant to § 85-2-311(1)(b), MCA, the Applicant bears the affirmative burden of proving by a preponderance of the evidence that the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. Analysis of adverse effect must be determined based on a consideration of an applicant's plan for the exercise of the permit that demonstrates that the applicant's use of the water will be controlled so the water right of a prior appropriator will be satisfied. See Montana Power Co. (1984), 211 Mont. 91, 685 P.2d 336 (purpose of the Water Use Act is to protect senior appropriators from encroachment by junior users); Bostwick Properties, Inc. ¶ 21.
37. An applicant must analyze the full area of potential impact under the § 85-2-311, MCA criteria. *In the Matter of Beneficial Water Use Permit No. 76N-30010429 by Thompson River Lumber Company* (DNRC Final Order 2006). While § 85-2-361, MCA, limits the boundaries expressly required for compliance with the hydrogeologic assessment requirement, an applicant is required to analyze the full area of potential impact for adverse effect in addition to the requirement of a hydrogeologic assessment. Id. ARM 36.12.120(8).
38. Applicant must prove that no prior appropriator will be adversely affected, not just the objectors. Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 4.
39. In analyzing adverse effect to other appropriators, an applicant may use the water rights claims of potentially affected appropriators as evidence of their “historic beneficial use.” See Matter of Application for Change of Appropriation Water Rights Nos. 101960-41S and 101967-41S by Royston (1991), 249 Mont. 425, 816 P.2d 1054.
40. It is the applicant’s burden to produce the required evidence. E.g., Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7 (legislature has placed the burden of proof squarely on the applicant); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*, (DNRC Final Order 2005). (DNRC Final Order 2005). The Department is required to grant a permit only if the § 85-2-311, MCA, criteria are proven by the applicant by a preponderance of the evidence. Bostwick Properties, Inc. ¶ 21.

41. Section 85-2-311 (1)(b) of the Water Use Act does not contemplate a de minimis level of adverse effect on prior appropriators. Wesmont Developers v. DNRC, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pg. 8.

42. The Applicant has proven by a preponderance of the evidence that the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. § 85-2-311(1)(b) , MCA. (FOF 34-35)

Adequate Diversion

FINDINGS OF FACT

43. The Applicant proposes to install a 30 inch culvert in the channel of the UT of Gold Creek parallel to the direction of flow. The culvert would then be covered with soil perpendicular to the channel to create an earthen dike. The dike would be covered with rock to protect the structure and create a spillway. There would be a sliding gate installed on the culvert which would allow the Applicant to close the culvert and cause water to back up behind the dike. Once the water is backed up it would spill into a V shape ditch approximately 5 feet wide, 3 feet deep and ¼ mile long. The Applicant would divert all available flow into the ditch and use canvas or poly dams to divert water through cuts in the ditch onto 20 acres of trees. Any runoff from this water spreading irrigation would run into a borrow ditch along his road and return to the UT of Gold Creek.

CONCLUSIONS OF LAW

44. Pursuant to § 85-2-311(1)(c), MCA, an Applicant must demonstrate that the proposed means of diversion, construction, and operation of the appropriation works are adequate.

45. The adequate means of diversion statutory test merely codifies and encapsulates the case law notion of appropriation to the effect that the means of diversion must be reasonably effective, i.e., must not result in a waste of the resource. *In the Matter of Application for Beneficial Water Use Permit No. 33983s41Q by Hoyt* (DNRC Final Order 1981); § 85-2-312(1)(a), MCA.

46. Whether party presently has easement not relevant to determination of adequate means of diversion. *In the Matter of Application to Change a Water Right No. G129039-76D by Keim/Krueger* (DNRC Final Order 1989).

47. Collection of snowmelt and rain in lined ponds considered adequate means of diversion. *In the Matter of Application for Beneficial Water Use Permit No. 69141-76G by Silver Eagle Mining* (DNRC Final Order 1989).
48. Information needed to prove that proposed means of diversion, construction, and operation of the appropriation works are adequate varies, based upon project complexity design by licensed engineer adequate. *In the Matter of Application for Beneficial Water Use Permit No. 41C-11339900 by Three Creeks Ranch of Wyoming LLC* (DNRC Final Order 2002).
49. Adequate diversions can include the requirement to bypass flows to senior appropriators. E.g., *In the Matter of Application for Beneficial Water Use Permit No. 61293-40C by Goffena* (DNRC Final Order 1989)(design did not include ability to pass flows, permit denied).
50. Applicant has proven by a preponderance of the evidence that the proposed means of diversion, construction, and operation of the appropriation works are adequate for the proposed beneficial use. § 85-2-311(1)(c), MCA (FOF 43).

Beneficial Use

FINDINGS OF FACT

51. The Applicant proposes to divert water for irrigation which is recognized as a beneficial use under § 85-2-102(4), MCA.
52. The volume of 71.6 AF (3.58 AF/AC) was requested because it is the amount that is legally available. This figure was calculated by dividing the available water in May by the number of acres ($71.57/20 = 3.5785$ which rounds to 3.58). This amount is greater than the DNRC Adjudication standard of 1.7 AF/AC for water spreading irrigation in Climate Area 4. The Adjudication manual Exhibit VII-8, Calculation of Volume Guidelines, Table B shows water spreading systems grouped with sub-irrigation and natural overflow. This category of irrigation systems assumes an abundance of natural moisture. The description of flood systems with an overall efficiency of 20% more closely resembles the Applicants' proposed system. In Table B, flood systems are assigned a volume of 8.5 AF/AC in Climate Area 4, much more than requested. The requested volume is reasonable based on the low efficiency of the irrigation system and the extremely high infiltration rate of the soils he proposes to irrigate. Water

spreading systems are not assigned a flow rate because they utilize all available flow until the volume is achieved.

53. The Dept. determined that 20% efficiency for water spreading is a reasonable figure.

CONCLUSIONS OF LAW

54. Under § 85-2-311(1)(d), MCA, an Applicant must prove by a preponderance of the evidence the proposed use is a beneficial use.

55. An appropriator may appropriate water only for a beneficial use. See also, § 85-2-301 MCA. It is a fundamental premise of Montana water law that beneficial use is the basis, measure, and limit of the use. E.g., McDonald, supra; Toohey v. Campbell (1900), 24 Mont. 13, 60 P. 396. The amount of water under a water right is limited to the amount of water necessary to sustain the beneficial use. E.g., Bitterroot River Protective Association v. Siebel, *Order on Petition for Judicial Review*, Cause No. BDV-2002-519, Montana First Judicial District Court, Lewis and Clark County (2003), *affirmed on other grounds*, 2005 MT 60, 326 Mont. 241, 108 P.3d 518; *In The Matter Of Application For Beneficial Water Use Permit No. 43C 30007297 by Dee Deaterly* (DNRC Final Order), *affirmed other grounds*, Dee Deaterly v. DNRC et al, Cause No. 2007-186, Montana First Judicial District, *Order Nunc Pro Tunc on Petition for Judicial Review* (2009); Worden v. Alexander (1939), 108 Mont. 208, 90 P.2d 160; Allen v. Petrick (1924), 69 Mont. 373, 222 P. 451; *In the Matter of Application for Beneficial Water Use Permit No. 41S-105823 by French* (DNRC Final Order 2000).

Amount of water to be diverted must be shown precisely. Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 3 (citing BRPA v. Siebel, 2005 MT 60, and rejecting applicant's argument that it be allowed to appropriate 800 acre-feet when a typical year would require 200-300 acre-feet).

56. It is the applicant's burden to produce the required evidence. Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7; *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*, (DNRC Final Order 2005); see also Royston; Ciotti.

57. Applicant proposes to use water for irrigation which is a recognized beneficial use. § 85-2-102(4), MCA. Applicant has proven by a preponderance of the evidence irrigation is a beneficial

use and that 71.6 AF of diverted volume of water requested is the amount needed to sustain the beneficial use. § 85-2-311(1)(d), MCA, (FOF 51-53)

Possessory Interest

FINDINGS OF FACT

58. The applicant signed the affidavit on the application form affirming the applicant has possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use.

CONCLUSIONS OF LAW

59. Pursuant to § 85-2-311(1)(e), MCA, an Applicant must prove by a preponderance of the evidence that it has a possessory interest or the written consent of the person with the possessory interest in the property where the water is to be put to beneficial use, or if the proposed use has a point of diversion, conveyance, or place of use on national forest system lands, the applicant has any written special use authorization required by federal law to occupy, use, or traverse national forest system lands for the purpose of diversion, impoundment, storage, transportation, withdrawal, use, or distribution of water under the permit.

60. Pursuant to ARM 36.12.1802:

(1) An applicant or a representative shall sign the application affidavit to affirm the following:

(a) the statements on the application and all information submitted with the application are true and correct and

(b) except in cases of an instream flow application, or where the application is for sale, rental, distribution, or is a municipal use, or in any other context in which water is being supplied to another and it is clear that the ultimate user will not accept the supply without consenting to the use of water on the user's place of use, the applicant has possessory interest in the property where the water is to be put to beneficial use or has the written consent of the person having the possessory interest.

(2) If a representative of the applicant signs the application form affidavit, the representative shall state the relationship of the representative to the applicant on the form, such as president of the corporation, and provide documentation that establishes the authority of the representative to sign the application, such as a copy of a power of attorney.

(3) The department may require a copy of the written consent of the person having the possessory interest.

61. The Applicant has proven by a preponderance of the evidence that it has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use. § 85-2-311(1)(e), MCA. (FOF 58)

PRELIMINARY DETERMINATION

Subject to the terms, analysis, and conditions in this Order, the Department preliminarily determines that this Application for Beneficial Water Use Permit No. 43D 30103712 should be **GRANTED**.

The Department determines the applicant may divert water from the UT Gold Creek, by means of a dike, from May 1 through June 30 up to 71.6 AF, from a point in Tract 12 Certificate of Survey 938 in Government Lot 2 (SWSWNW) Section 31, T8S, R21E, for irrigation use from May 1 through June 30. The applicant may irrigate 20 acres. The place of use is located in Tract 12 Certificate of Survey 938 in Government Lot 2 (SWNW) Section 31, T8S, R21E.

NOTICE

This Department will provide public notice of this Application and the Department's Preliminary Determination to Grant pursuant to §§ 85-2-307, MCA. The Department will set a deadline for objections to this Application pursuant to §§ 85-2-307, and -308, MCA. If this Application receives no valid objection or all valid objections are unconditionally withdrawn, the Department will grant this Application as herein approved. If this Application receives a valid objection, the application and objection will proceed to a contested case proceeding pursuant to Title 2 Chapter 4 Part 6, MCA, and § 85-2-309, MCA. If valid objections to an application are received and withdrawn with stipulated conditions and the department preliminarily determined to grant the permit or change in appropriation right, the department will grant the permit or change subject to conditions necessary to satisfy applicable criteria.

DATED this 10th day of March 2016.

/Original signed by Kimberly Overcast/
Kimberly Overcast, Manager
Billings Water Resources Regional Office
Department of Natural Resources and Conservation

CERTIFICATE OF SERVICE

This certifies that a true and correct copy of the PRELIMINARY DETERMINATION TO GRANT was served upon all parties listed below on this ____ day of _____ 2016, by first class United States mail.

JON AND GAEL CARTER
937 RD 23
POWELL, WY 82435-9542

CHRISTINE SCHWEIGERT

MARCH 10, 2016