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

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APPLICATION FOR BENEFICIAL WATER USE PERMIT NO. 76LJ 30163930 By Flathead Municipal Airport Authority	)))	**DRAFT PRELIMINARY DETERMINATION TO GRANT PERMIT**

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On November 22, 2024, Flathead Municipal Airport Authority (Applicant) submitted Application for Beneficial Water Use Permit No. 76LJ 30163930 to the Kalispell Regional Office of the Department of Natural Resources and Conservation (Department or DNRC) for 140 GPM up to 15.46 AF for Commercial purposes. The Department published receipt of the application on its website. The Department sent the Applicant a deficiency letter under § 85-2-302, Montana Code Annotated (MCA), dated January 12, 2025. The Applicant responded with information dated February 3, 2025. A preapplication meeting was held between the Department and the Applicant on June 25, 2024, in which the Applicant designated that the technical analyses for this application would be completed by the Department. The Applicant returned the completed Preapplication Meeting Form on August 30, 2024. The Department completed Technical Analysis on October 11, 2024. The Technical Analysis was amended by the Department and returned to the Applicant on November 4, 2024. The application was determined to be correct and complete as of February 18, 2025. An Environmental Assessment for this application was completed on February 6, 2025.

INFORMATION

The Department considered the following information submitted by the Applicant, which is contained in the administrative record.

Application as Filed:

- Application for Beneficial Water Use Permit, Form 600
- Maps:
    - Figure 1: Glacier Park International Airport Public Water Supply System Project Location Map, dated 11/8/2024
    - Figure 2: Glacier Park International Airport Public Water Supply System Well Location Map, dated 11/13/2024
- Attachments:
    - Attachment A: Department- completed technical analyses based on information provided in the Preapplication Checklist, dated October 11, 2024. Part B of the technical analysis was amended by the Department and returned to the Applicant on November 4, 2024. The area of revision was the references used for the Department's analysis, therefore the amendment did not significantly alter the analysis presented.
        - Appendix A: Water Rights within the Area of Potential Impact
    - Attachment B: Pump Curve and Motor Specifications
    - Attachment C: Flow Rate, Volume, and Head Calculations

Preapplication as Filed:

- Preapplication Meeting Form, Form 600P
- Addenda:
    - Aquifer Testing Addendum, Form 600-ATA
    - Variance Request, Form 653
- Maps:
    - Figure 1: Glacier Park International Airport Public Water Supply System Project Location Map, dated August 30, 2024
    - Figure 2: Glacier Park International Airport Public Water Supply System Well Location Map, dated August 30, 2024
- Attachments:
    - Attachment A: Montana Well Log Reports
    - Attachment B: Form 633 (Electronic Format)

Information Received After Application Filed:

- Deficiency Response titled: Beneficial Water Use Permit Application No. 76LJ 30163930 for Glacier Park International Airport – WET Project No. 1688-23, dated February 3, 2025

Information Within the Department's Possession/Knowledge:

- The Department also routinely considers the following information. The following information is not included in the administrative file for this application but is available upon request. Please contact the Kalispell Regional Office at 406-752-2288 to request copies of the following documents.
    - DNRC Technical Memorandum: *Physical Availability of Surface Water With Gage Data*, Dated November 1, 2019
    - DNRC Technical Memorandum: *Net Surface Water Depletion from Ground Water Pumping,* Dated July 16, 2018
    - Department Standard Practice for Determining Physical Availability of Surface Water
    - Department Standard Practice for Determining Area of Potential Impact

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).

For the purposes of this document, Department or DNRC means the Department of Natural Resources & 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; PWS means public water supply; DEQ means Department of Environmental Quality; USGS means United States Geological Survey; MCA means Montana Code Annotated; ARM means Administrative Rules of Montana; POD means point of diversion; POU means place of use; BTC means below top of well casing; BGS means below ground surface; ZOI means zone of influence; SKQ means Seli'š Ksanka Qlispe' Dam; T means transmissivity and S means storativity.

PROPOSED APPROPRIATION

FINDINGS OF FACT

1. The Applicant proposes to divert water from the Flathead Deep Aquifer (Deep Aquifer, by means of two wells drilled to 255 and 235 feet, from January 1 to December 31 at 140 gallons per minute up to 15.46 acre-feet, from points in the NE ¼ of SW ¼ of NE ¼ of Section 3, Township 29N, Range 21W, Flathead County, Montana, for Commercial beneficial use. The Applicant proposes to provide potable water to airport patrons via a Public Water Supply approved and monitored by the Montana Department of Environmental Quality (PWS #MT0000929). The place of use is generally located in Government Lot 3 in the NE ¼ of SW ¼ of NE ¼ of Section 3, Township 29N, Range 21W, Flathead County, Montana.

2. The proposed wells are located approximately 8,500 feet from the Flathead River, 2,040 feet from Trumbull Creek, 9,800 feet from Spring Creek, 9,400 feet from Gooderich Bayou, and 7,100 feet from the Whitefish River.

3. Of the total 15.46 AF of diverted volume, 9.8 AF are proposed to be consumed by the proposed commercial use.

4. There are no existing water rights that will supplement this proposed use or overlap with the place of use.

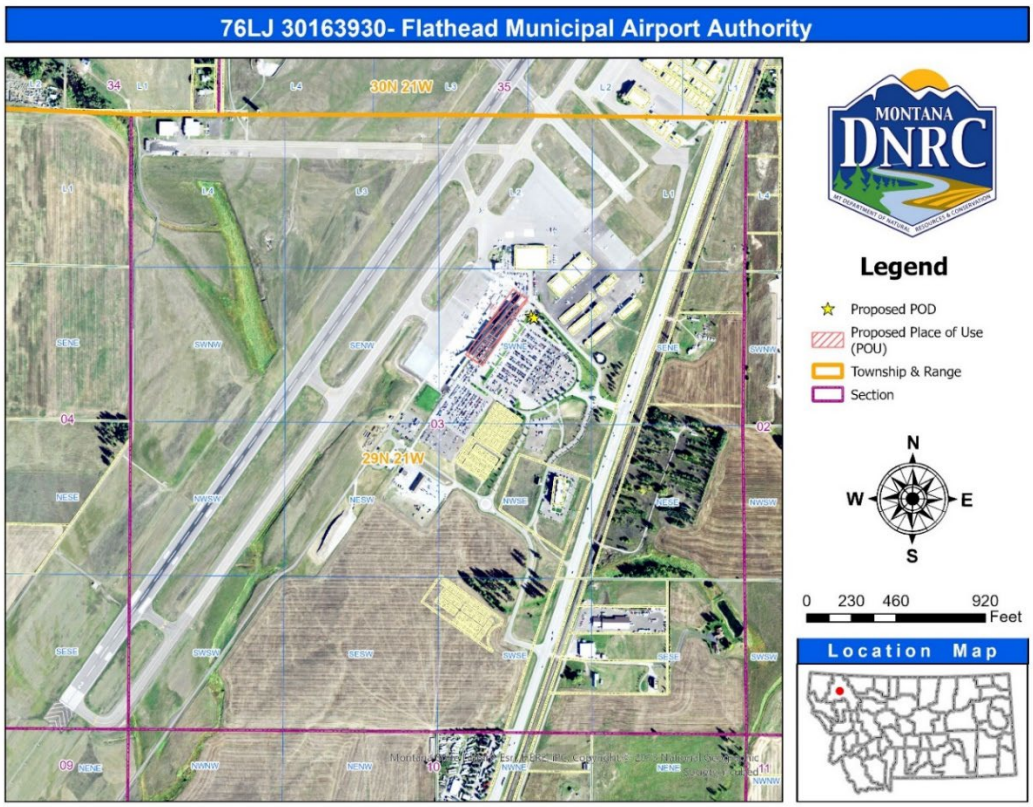

Figure 1. Map of the Applicant's proposed POD on the source and proposed place of use.

§ 85-2-311, MCA, BENEFICIAL WATER USE PERMIT CRITERIA
GENERAL CONCLUSIONS OF LAW

5. 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 . . .

6. 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." Section 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, 357 Mont. 438, 240 P.3d 628.

7. 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.

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

9. 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. Section 85-2-311(6), MCA.

10. 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

11. The Applicant proposes to divert up to 15.46 AF of groundwater for commercial purposes at a flow rate of 140 GPM out of two PWS wells. The East and West PWS wells, PODs 1 & 2 respectively, will operate alternatively such that the pumping rate will not exceed 140 GPM.

GROUNDWATER:

12. The Department evaluated the volume of water that is physically available from the source aquifer using Applicant supplied data from constant rate pumping tests on the proposed East and West PWS Wells. Department Groundwater Hydrologist Jack Landers used data from said tests to produce the October 8, 2024 Groundwater Permit Report affiliated with this application. This report is in the Application file and is available upon request.

13. For purposes of modeling depletions from drawdown, a recommended aquifer Transmissivity (T) of 1,652 ft^2 per day and Storativity (S) of 1.1 x 10^{-4} was derived from the Hantush (1960) solution applied to the data submitted from the January 24, 2024 aquifer test on the West PWS well (POD #2). Predicted theoretical drawdown in **Table 3** for the proposed wells is modeled for the period of diversion using the monthly pumping schedule identified in **Table 1.** The requested commercial volume is apportioned monthly throughout the year based on the number of days in the month. The volume is converted to flow rate using the following equation:

$$Total\ Diverted\ Flow\ Rate\ (GPM) = \frac{Commercial\ Diverted\ Volume\ (AF)}{month} \times \frac{325{,}851\ gallons}{AF} \times \frac{month}{\#\ days} \times \frac{1\ day}{1{,}440\ min}$$

14. The Applicant specified the maximum flow rate that would be apportioned to each well. At peak demand each well will be pumped up to 140 GPM on an alternating schedule. The total volume of 15.46 AF will be apportioned equally between the two wells (7.73 AF each).

Table 1: Proposed Monthly Pumping Schedule for PWS Wells		
Month	**Commercial Diverted Volume (AF)**	**Total Diverted Flow Rate (GPM)**
January	1.3	9.6
February	1.2	9.6
March	1.3	9.6
April	1.3	9.6
May	1.3	9.6
June	1.3	9.6
July	1.3	9.6
August	1.3	9.6
September	1.3	9.6
October	1.3	9.6
November	1.3	9.6
December	1.3	9.6
Total	**15.46**	

Aquifer Test & Drawdown Modelling:

15. Variances were granted by the DNRC Kalispell Regional Water Resources Office from Aquifer Testing Requirements in ARM 36.12.121(3)(g) because groundwater levels were monitored for 10 hours prior to the test, which is less than the two days required. However, water levels were found to have stabilized prior to the beginning of the test and did not affect the Water Sciences Bureau analysis included in the Groundwater Report prepared for this application.

16. Drawdown in the existing wells was modeled for the proposed conditions using the Hantush (1960) solution, a T of 1,652 ft^2 per day and S of 1.1 x 10^{-4}, and the monthly pumping schedules identified in **Table 1** above.

17. The attempted 24-hour constant rate aquifer pumping tests conducted on the East and West PWS wells (PODs #1 & 2, respectively) used for analysis are summarized in **Table 2** below. A generator failure caused the pump to stop after 21.3 hours on the East Well test. A full 24-hour test was conducted on the West Well.

Table 2: Summary of Aquifer Tests Conducted on the Proposed Wells						
Test Date	**Production Well Name/ GWIC ID**	**Observation Wells/ GWIC IDs**	**Test Flow Rate (GPM)**	**Background Monitoring Period (hrs)**	**Test Duration (hrs)**	**Recovery Monitoring Period (hrs)**
1/9/2024	East Well/ 328839	West Well/ 328840 Center Shallow Geothermal Well/ 328779 East Shallow Geothermal Well/ 328779	330.0	70.4	21.3	27.0
1/24/2024	West Well/ 328840	East Well/ 328839 Center Shallow Geothermal Well/ 328779 East Shallow Geothermal Well/ 328779	520.0	10.5	24.0	24.0

18. The East Well was tested at an average flow rate of 330.0 GPM with a maximum drawdown of 29.5 feet from the pre-test static water level of 23.5 feet BTC, leaving 212.0 feet of available water column above the well bottom.

19. The West Well was tested at an average flow rate of 520.0 GPM with a maximum drawdown of 35.6 feet BTC, leaving 199.4 feet of available water column above the well bottom.

20. The remaining available water column for the proposed production wells is calculated in **Table 3**. The remaining water column above the bottom of the well (or above the perforated interval) (row J) is equal to the available drawdown above the bottom of the well or perforated interval (row C) minus the total drawdown (row I). Total drawdown is the sum of interference drawdown (additional drawdown as an effect of pumping of nearby wells- none in this case) and predicted drawdown with well loss (row G). Well loss is calculated by dividing the predicted theoretical maximum drawdown (row G) by a well efficiency percentage (row F). Well efficiency is calculated by dividing the modeled drawdown using the mean aquifer test rate (row E) by the observed maximum drawdown of the aquifer test (row D).

Table 3: Remaining Available Water Column for the Proposed Production Wells			
	Drawdown Estimate	**East PWS Well, POD 1, GWIC ID 328839**	**West PWS Well, POD 2, GWIC ID 328840**
A	Total Depth at Bottom of Perforated Interval (ft BTC)[1]	236.0	222.0
B	Pre-Test Static Water Level (ft BTC)	37.5	55.5
C	Available Drawdown of Water Column Above Bottom of Perforations (ft BTC)	212.5	199.9
D	Observed Drawdown of Aquifer Test (ft)	29.5	35.6
E	Modeled Drawdown Using Mean Aquifer Test Rate (ft BGS)	17.0	26.8
F	Well Efficiency (%)	100%	100%
G	Predicted Theoretical Maximum Drawdown (Permit) (ft BGS)	17.0	26.8
H	Predicted Drawdown with Well Loss (ft)	0.5	0.5
I	Total Drawdown (ft)	0.5	0.5
J	Remaining Water Column (ft)	212.0	199.4

[1]The total well depth measuring point (BGS) was adjusted to the top of the well casing based on a 2-ft well casing stickup reported on the well log.

21. An evaluation of groundwater availability in the source aquifer for the purpose of evaluating physical and legal availability was done by calculating groundwater flux through a Zone of Influence (ZOI) corresponding to the 0.01-foot drawdown contour. A distance-drawdown plot was generated using the Hantush (1960) solution, a constant normalized pumping rate of 9.6 GPM for the period of Diversion, T of 1,652 ft² per day and S of 1.1 x 10^{-4}. The derived 0.01-foot contour occurs 700 ft from the Applicant's wells.

22. The direction of groundwater flow is predominantly from the northeast to the southwest and the width of the ZOI that is perpendicular to the groundwater flow equals 1,400 ft. The calculation for groundwater flux (Q) through the delineated ZOI is given by the following equation:

$$Q = T * W * i$$

Where:

$$T = Transmissivity = {}^{1{,}652\ ft^2}/_{day}$$

$$W = Width\ of\ ZOI = 1{,}400\ ft$$

$$i = Groundwater\ Gradient\ (from\ LaFave, 2004, water\ level\ contour\ map) = 0.002\ ft/ft$$

Groundwater flux was calculated at 4,625.6 ft^3 per day, which equates to 38.8 AF per year.

23. Based on the sufficient remaining available water column in the production wells and the calculation for groundwater flux through the delineated ZOI, the Department finds that the amount of groundwater the Applicant seeks to appropriate, 140 GPM up to 15.46 AF, is physically available in the aquifer.

LEGAL AVAILABILITY

FINDINGS OF FACT

GROUNDWATER:

24. Physical groundwater availability for comparison with legal demands was evaluated by calculating groundwater flux through a Zone of Influence (ZOI) corresponding to the 0.01-foot drawdown contour. A single groundwater right, Groundwater Certificate 76LJ 109403-00 is located within the ZOI, but has a total diversion depth of 25.0 feet, static water level of 10.0 feet, and is completed in the shallow Evergreen Aquifer overlying the Flathead Deep Aquifer (Deep Aquifer). Because it is completed in a different source aquifer, Groundwater Certificate 76LJ 109403-00 is not considered for legal demand in the source aquifer for the proposed appropriation (Deep Aquifer). There are no groundwater rights considered for legal demand in the source aquifer, therefore the calculated groundwater flux of 4,625.6 ft^3 per day (38.8 AF per year) is considered legally available.

SURFACE WATER:

25. The proposed wells are located approximately 8,500 feet from the Flathead River, 2,040 feet from Trumbull Creek, 9,800 feet from Spring Creek, 9,400 feet from Gooderich Bayou, and 7,100 feet from the Whitefish River. The attached Groundwater Permit Technical Analysis Report- Part A concludes that Trumbull Creek, Spring Creek, Gooderich Bayou, and the Whitefish River are all likely connected to the shallow aquifer (Evergreen Aquifer) in the area surrounding the project area. Thickness of the confining unit and presence of intertonguing within the unit were analyzed in the project area. No information was found to support a direct connection between the Deep Aquifer and Shallow Aquifer in this region of the Flathead Valley, therefore the sources of Trumbull Creek, Spring Creek, Gooderich Bayou, and the Whitefish River are all likely not connected to the Deep Aquifer in the project vicinity and were not considered for legal availability.

26. The Flathead River is considered hydraulically connected to the unconfined Evergreen shallow aquifer due to the proximity of shallow wells, perennial stream classification, and hydric soil conditions near the channel. Rose's (2018) map of the thickness of the confining unit indicates that the proposed project is on the western edge of an area where the confining unit is less than 100 ft thick. Confining unit thickness appears to increase towards the west and the Whitefish River. Due to the consistency and lack of intertonguing in the confining unit in the vicinity of the proposed project and thinning of the confining unit east of the proposed project, depletion to surface water from the proposed use would likely occur to the Flathead River and Flathead Lake.

27. The depleted reach for each of the surface waters evaluated for legal availability are as follows:

a. The Flathead River east of the project area (evaluated from the United States Geological Survey (USGS) Gaging Station #12363000 at Columbia Falls, MT to the Flathead Lake inlet); and,

b. Flathead Lake from the lake inlet down to USGS gage #12372000 near Polson, MT.

Physical Availability of the Flathead River (quantified for the purpose of analyzing Legal Availability):

28. Physical availability of the Flathead River was quantified monthly. The DNRC used the method below to quantify physically available monthly flow rates and volumes in the depleted reach during the period of surface water depletion:

a. The Department calculated median of the mean monthly flow rates in cubic feet per second (CFS) for the Flathead River using USGS Gage # 12363000 records for each month of the year (**Table 4**, column B). Those flow rates were then converted to monthly volumes in acre-feet (AF) (**Table 4**, column C) using the following equation found on the DNRC Water Calculation Guide;

$$median\ of\ the\ mean\ monthly\ flow\ (CFS) * 1.98\ (AF/day/CFS) * \#\ days\ per\ month = AF/month$$

b. For analysis of a reach where the gaging station used is in the upstream extent of the depleted reach, the median of the mean monthly gage value also represents physical availability for the reach (**Table 4**, columns B-C).

Table 4 - Physical Availability Analysis of the Flathead River from USGS Gage # 12363000 at Columbia Falls, MT to the Flathead Lake Inlet

A	B	C
Month	**Physically Available Water: Median of the Mean Monthly Flow at Gage # 12363000 (CFS)**	**Physically Available Water: Median of the Mean Monthly Volume at Gage # 12363000 (AF)**
January	5,111.5	313,743.9
February	4,800.5	266,139.7
March	4,772.0	292,905.4
April	10,535.0	625,779.0
May	22,645.0	1,389,950.1
June	24,680.0	1,465,992.0
July	11,400.0	699,732.0
August	5,406.0	331,820.3
September	4,346.0	258,152.4
October	4,929.0	302,542.0
November	4,546.0	270,032.4
December	5,498.5	337,497.9

Legal Availability of the Flathead River:

29. The Flathead River was evaluated from USGS Gage # 12363000 (Flathead River at Columbia Falls, MT) to the Flathead Lake inlet, using entire period of record for this gage (October 1951-March 2024). USGS Gage # 12363000 is the nearest gage to the reach of the Flathead River depleted by the proposed appropriation.

30. Legal availability the Flathead River was quantified monthly. The DNRC used the method below to quantify legally available monthly flow rates and volumes in the depleted reach during the period of surface water depletion:

a. The Department calculated median of the mean monthly flow rates in cubic feet per second (CFS) for Flathead Lake using USGS Gage # 12363000 records for each month of the year (**Table 4**, column B). Those flow rates were then converted to monthly volumes in acre-feet (AF) (**Table 4**, column C) using the following equation found on the DNRC Water Calculation Guide (formerly DNRC form 615):

$$median\ of\ the\ mean\ monthly\ flow\ (CFS) * 1.98\ (AF/day/CFS) * \#\ days\ per\ month = AF/month$$

b. The Department calculated the monthly flow rates appropriated by existing users downstream of the gage on the source (**Table 5**, column D) by:

   i. Generating a list of existing active or severed (divided) surface water rights from the USGS Gage # 12363000 to the Flathead Lake Inlet (this list is included in Appendix B of the Technical Report associated with this application, available on request);

   ii. Calculating flow rate in CFS for all surface water rights where flow in CFS is not listed on the water right from known flow in GPM using the equations below:

$$Flow\ Rate\ (CFS) = \frac{Known\ Flow\ Rate\ (GPM)}{448.8\ GPM/1\ CFS}$$

   iii. Assigning a single combined flow rate of 0.08 CFS to all livestock direct from source rights without a designated flow rate, per Department adjudication standards;

   iv. Assuming the larger instream flow right rate for the entire month in months where two different instream flow rights cover different portions of a month. This leads to an overestimation of flow for half of the month, but is necessary to simplify analysis (and not split these months into two segments); and,

   v. Assuming that the flow rate of each existing right is continuously diverted throughout each month included in its period of diversion. This assumption is necessary due to the difficulty of differentiating the distribution of appropriated volume over the period of diversion on a large quantity of water rights. This leads to an overestimation of existing uses from the source. The Department finds this is an appropriate measure of assessing existing rights as it protects existing water users.

c. Since the gage is upstream of the depleted reach, the Department subtracted the flow rates of the existing rights between USGS Gage # 12363000 and the Flathead Lake inlet (**Table 5**, column D) from the median of the mean monthly gage values (**Table 5**, column B) to determine legally available flow in the depleted reach (**Table 5**, column E). Legally available monthly flow was then converted to monthly volume (**Table 5**, column F).

Table 5: Legal Availability Analysis of Flathead River from USGS Gage # 12363000 at Columbia Falls, MT to the Flathead Lake Inlet					
A	**B**	**C**	**D**	**E**	**F**
Month	**Physically Available Water in the Depleted Reach (CFS)**	**Physically Available Water in the Depleted Reach (AF)**	**Existing Legal Demands from Gage 12363000 to Flathead Lake Inlet (CFS)**	**Legally Available Flow: Physically Available Water Minus Existing Legal Demands (CFS)**	**Legally Available Volume: Physically Available Water Minus Existing Legal Demands (AF)**
January	5,111.5	313,743.9	3,508.3	1,603.2	98,403.2
February	4,800.5	266,139.7	3,508.3	1,292.2	71,638.5
March	4,772.0	292,905.4	3,508.3	1,263.7	77,564.7
April	10,680.0	634,392.0	6,814.1	3,865.9	229,637.0
May	22,660.0	1,390,870.8	8,289.1	14,370.9	882,088.5
June	24,680.0	1,465,992.0	8,289.1	16,390.9	973,622.0
July	11,400.0	699,732.0	5,566.1	5,833.9	358,087.4
August	5,406.0	331,820.3	3,664.1	1,741.9	106,920.5
September	4,346.0	258,152.4	3,664.1	681.9	40,507.4
October	4,929.0	302,542.0	3,664.1	1,264.9	77,642.2
November	4,546.0	270,032.4	3,508.3	1,037.7	61,638.2
December	5,498.5	337,497.9	3,508.3	1,990.2	122,157.2

Physical Availability of Flathead Lake (quantified for the purpose of analyzing Legal Availability:

31. Physical availability of Flathead Lake will be quantified monthly. The DNRC used the method below to quantify physically available monthly flow rates and volumes in the depleted reach during the period of surface water depletion:

a. The Department calculated median of the mean monthly flow rates in cubic feet per second for Flathead Lake using USGS Gage # 12372000 records for each month of the year (**Table 6**, column B). Those flow rates were then converted to monthly volumes in acre-feet (**Table 6**, column C) using the following equation found on the DNRC Water Calculation Guide (formerly DNRC form 615):

$$median\ of\ the\ mean\ monthly\ flow\ (CFS) * 1.98\ (AF/day/CFS) * \#\ days\ per\ month = AF/month$$

b. The Department calculated the monthly flow rates appropriated by existing users upstream of the gage on the source (**Table 6**, column D) by:

   i. Generating a list of existing active or severed (divided) surface water rights from the Flathead Lake inlet to USGS Gage # 12372000 (this list is included in Appendix A);

   ii. Calculating flow rate in CFS for all water rights where flow in CFS is not listed on the water right from known flow in GPM or from known volume using the equations below:

$$Flow\ Rate\ (CFS) = \frac{Known\ Flow\ Rate\ (GPM)}{448.8\ GPM/1\ CFS}$$

$$Flow\ Rate\ (CFS) = Known\ Volume\ (AF) * 0.0014\ \ CFS/AF$$

iii. Assigning a single combined flow rate of 0.08 CFS to all livestock direct from source rights without a designated flow rate, per Department adjudication standards; and,

iv. Assuming that the flow rate of each existing right is continuously diverted throughout each month included in its period of diversion. This assumption is necessary due to the difficulty of differentiating the distribution of appropriated volume over the period of diversion on a large quantity of water rights. This leads to an overestimation of existing uses from the source. The Department finds this is an appropriate measure of assessing existing rights as it protects existing water users.

c. As the gage is downstream of the depleted reach, the Department added the flow rates of the existing rights between the Flathead Lake inlet and USGS Gage # 12372000 (**Table 6**, column D) to the median of the mean monthly gage values (**Table 6**, column B) to determine physical availability in the depleted reach (**Table 6**, column E). Physically available monthly flow rates were then converted to monthly volumes (**Table 6**, column F).

Table 6- Physical Availability Analysis of Flathead Lake from the Flathead Lake Inlet to USGS Gage # 12372000 near Polson, MT

A	B	C	D	E	F
Month	**Physically Available Water: Flathead Lake (CFS)**	**Physically Available Water: Flathead Lake (AF)**	**Existing Legal Demands from Flathead Lake Inlet to Gage # 12372000 (CFS)**	**Physically Available Water Minus Legal Demands (CFS)**	**Physically Available Water minus Legal Demands (AF)**
January	10,270.0	630,372.6	105.9	10,375.9	636,871.9
February	9,149.5	507,248.3	105.9	9,255.4	513,118.6
March	7,763.0	476,492.9	105.9	7,868.9	482,992.3
April	9,214.5	547,341.3	176.7	9,391.2	557,839.5
May	18,570.0	1,139,826.6	176.7	18,746.7	1,150,674.8
June	25,720.0	1,527,768.0	176.7	25,896.7	1,538,266.2
July	12,730.0	781,367.4	176.7	12,906.7	792,215.6
August	6,136.0	376,627.7	176.7	6,312.7	387,475.9
September	6,006.0	356,756.4	176.7	6,182.7	367,254.6
October	7,230.5	443,808.1	176.7	7,407.2	454,656.3
November	8,556.0	508,226.4	105.9	8,661.9	514,516.1
December	9,860.0	605,206.8	105.9	9,965.9	611,706.1

Legal Availability of Flathead Lake:

32. Flathead Lake was evaluated from the Flathead Lake inlet to USGS Gage # 12372000 (Flathead River at Polson, MT), using entire period of record for this gage (October 1938-April 2024). USGS Gage # 12372000 marks the downstream extent of the depleted reach of Flathead Lake.

33. USGS Gage # 12372000 marks the downstream extent of the depleted Reach of Flathead Lake. Seli'š Ksanka Qlispe' (SKQ) Dam near Polson is the control structure for Flathead Lake, and depletions to Flathead Lake will reduce the total volume of water leaving the Lake (passing over/through the dam). The USGS gage is approximately 0.6 miles downstream of the SKQ Dam.

34. Legal availability of Flathead Lake water will be quantified monthly. The DNRC used method below to quantify legally available monthly flows and volumes in the depleted reach during the period of surface water depletion (year-round):

a. Generating a list of existing active or severed (divided) surface water rights from the Flathead Lake inlet to USGS Gage # 12372000 (this list is included in Appendix A of the Technical Report in the application file, available on request);

b. Calculating flow rate in CFS for all surface water rights where flow in CFS is not listed on the water right from known flow in GPM or from known volume using the following equations;

$$Flow\ Rate\ (CFS) = \frac{Known\ Flow\ Rate\ (GPM)}{448.8\ GPM/1\ CFS}$$

$$Flow\ Rate\ (CFS) = Known\ Volume\ (AF) * 0.0014\ \ CFS/AF$$

c. Assigning a single combined flow rate of 0.08 CFS to all livestock direct from source rights without a designated flow rate, per Department adjudication standards; and,

d. Assuming that the flow rate of each existing right is continuously diverted throughout each month included in its period of diversion. This assumption is necessary due to the difficulty of differentiating the distribution of appropriated volume over the period of diversion on a large quantity of water rights. This leads to an overestimation of existing uses from the source. The Department finds this is an appropriate measure of assessing existing rights as it protects existing water users.

The Department subtracted out the flow rates of the existing legal demands (**Table 7**, columns D) within the area of potential impact from the physically available water (**Table 7**, column B) to determine legal availability in the depleted reach (**Table 7**, column E). Legally available monthly flows were then converted to monthly volumes (**Table 7**, column F).

Table 7: Legal Availability Analysis of Flathead Lake from the Flathead Lake Inlet to USGS Gage # 12372000 near Polson, MT					
A	**B**	**C**	**D**	**E**	**F**
Month	**Physically Available Water in the Depleted Reach (CFS)**	**Physically Available Water in the Depleted Reach (AF)**	**Existing Legal Demands in Flathead Lake (CFS)**	**Legally Available Flow: Physically Available Water Minus Existing Legal Demands (CFS)**	**Legally Available Water: Physically Available Water Minus Existing Legal Demands (AF)**
January	10,375.9	636,871.9	105.9	10,270.0	630,372.6
February	9,255.4	513,118.6	105.9	9,149.5	507,248.3
March	7,868.9	482,992.3	105.9	7,763.0	476,492.9
April	9,391.2	557,839.5	176.7	9,214.5	547,341.3
May	18,746.7	1,150,674.8	176.7	18,570.0	1,139,826.6
June	25,896.7	1,538,266.2	176.7	25,720.0	1,527,768.0
July	12,906.7	792,215.6	176.7	12,730.0	781,367.4
August	6,312.7	387,475.9	176.7	6,136.0	376,627.7
September	6,182.7	367,254.6	176.7	6,006.0	356,756.4
October	7,407.2	454,656.3	176.7	7,230.5	443,808.1
November	8,661.9	514,516.1	105.9	8,556.0	508,226.4
December	9,965.9	611,706.1	105.9	9,860.0	605,206.8

Net Depletions to Surface Water:

35. Net depletion is equal to consumption for a proposed groundwater use and is described as the calculated volume, rate, timing, and location of reductions to surface water that are offset by the non-consumed water. Net depletion is analyzed by **1)** quantifying the consumed volume associated with the proposed use; **2)** identifying hydraulically connected surface waters; and **3)** calculating the monthly rate and timing of depletions to affected surface water(s).

a. Consumed groundwater does not return to the source aquifer. Consumed volume depends on the proposed use and its associated percentage of known consumption. Depletion is assumed to be equivalent to consumption on an annual basis unless non-consumed water does not accrete to the potentially affected surface water.

b. Commercial use would be 10% consumptive: given the use of the drainfield method for wastewater disposal, and the results of studies by Kimsey and Flood (1987), Vanslyke and Simpson (1974), and Paul, Poeter, and Laws (2007).

c. A total of 1.5 AF would be consumed, of which the consumed volume schedule for the proposed appropriation (**Table 8**) would result in net depletion to the Flathead River east of the project location at SE Section 01, Township 29 North, Range 21 West.

d. The non-consumed volume occurring from the proposed use would accrue to the shallow aquifer through drainfield wastewater treatment disposal method. The Flathead River and Whitefish River are interpreted as perennial sources that are hydraulically connected to the shallow aquifer. Because the non-consumed volume returns to a different aquifer and surface water sources than depletion from pumping in the proposed wells, net depletion to the Flathead River would be equal to the total diverted volume minus the non-consumed volume returning to the Flathead River.

e. Following the inverse distance weighted method (IDW) described in DNRC (2019) and Section 3.2 of a guidance document developed by the Province of British Columbia (2016), proportions assigned to the Flathead River and Whitefish River are 0.41 and 0.59 based on distances of 8,500 ft and 7,100 ft, respectively. Due to the constant year-round rate and distance from the proposed project to these sources, the non-consumed volume would return to surface water at a constant year-round rate identified in **Table 8.**

Table 8: Total Diverted and Non-Consumed Volumes

Month	Total Diverted Volume (AF)	Total Consumed Volume (AF)	Total Non-Consumed Volume (AF)	Non-Consumed Volume to Flathead River (AF)	Non-Consumed Volume to Whitefish River (AF)
January	1.3	0.1	1.2	0.5	0.7
February	1.2	0.1	1.1	0.4	0.6
March	1.3	0.1	1.2	0.5	0.7
April	1.3	0.1	1.1	0.5	0.7
May	1.3	0.1	1.2	0.5	0.7
June	1.3	0.1	1.1	0.5	0.7
July	1.3	0.1	1.2	0.5	0.7
August	1.3	0.1	1.2	0.5	0.7
September	1.3	0.1	1.1	0.5	0.7
October	1.3	0.1	1.2	0.5	0.7
November	1.3	0.1	1.1	0.5	0.7
December	1.3	0.1	1.2	0.5	0.7
Total	**15.46**	**1.5**	**14.0**	**5.7**	**8.3**

36. Net depletion of surface water from the proposed use would deplete the Flathead River and is equal to the total proposed diverted volume minus the portion of the non-consumed volume returning to the Flathead River (**Table 9**).

Table 9: Total Consumed Volume and Net Depletion to The Flathead River				
Month	**Total Diverted Volume (AF)**	**Non-Consumed Volume to the Flathead River (AF)[1]**	**Flathead River Net Depletion (AF)**	**Flathead River Net Depletion (GPM)**
January	1.3	0.5	0.8	6.1
February	1.2	0.4	0.8	6.1
March	1.3	0.5	0.8	6.1
April	1.3	0.5	0.8	6.1
May	1.3	0.5	0.8	6.1
June	1.3	0.5	0.8	6.1
July	1.3	0.5	0.8	6.1
August	1.3	0.5	0.8	6.1
September	1.3	0.5	0.8	6.1
October	1.3	0.5	0.8	6.1
November	1.3	0.5	0.8	6.1
December	1.3	0.5	0.8	6.1
Total	**15.46**	**5.7**	**9.8**	

[1]*A portion of the non-consumed volume (8.3 AF) returns to the Whitefish River, as shown in* ***Table 8.***

37. The Department finds that 140 GPM up to 15.46 AF/year is legally available in the aquifer based on the comparison of groundwater flux through the ZOI to the volume of existing legal demands within the ZOI. Additionally, the Department finds that the amount of water (6.1 GPM up to 9.8 AF per year) that the proposed groundwater appropriation may deplete from the hydraulically connected reaches of the Flathead River and Flathead Lake to be legally available during the proposed period of diversion.

ADVERSE EFFECT

FINDINGS OF FACT

38. The Applicant provided a plan showing that they can regulate their water use. To satisfy the water rights of senior appropriators during water shortages, the Applicant will reduce water usage during periods of shortage. Additionally, the Applicant has stated that the pumps can be turned off if necessary, in response to a call.

GROUNDWATER:

39. For purposes of modeling depletions from drawdown, a recommended aquifer Transmissivity (T) of 1,652 ft² per day and Storativity (S) of 1.1×10^{-4} was derived from the Hantush (1960) solution applied to the data submitted from the January 24, 2024 aquifer test on the West PWS well (POD #2).

40. Based on the recommended aquifer transmissivity, storativity, and the monthly pumping schedule in **Table 1**, drawdown is the largest at the end of the fifth year using the proposed pumping schedule. The 1-foot drawdown contour would occur at 1.1 ft from the proposed wells, and zero groundwater rights are predicted to experience drawdown equal to or greater than one foot.

SURFACE WATER:

41. Net depletion is equal to consumption for a proposed groundwater use and is described as the calculated volume, rate, timing, and location of reductions to surface water that are offset by return flows (non-consumed water). Net depletion is evaluated by:

a. Quantifying the consumed volume associated with the proposed use;
b. Identifying hydraulically connected surface waters; and,
c. Calculating the monthly rate and timing of net depletions to affected surface water.

42. Consumed volumes for commercial uses utilizing individual drainfields for wastewater treatment are assumed to be 10% of diverted volume according to the DNRC Technical Memorandum: "*Net Surface Water Depletion from Ground Water Pumping,"* dated July 6, 2018. Consumed groundwater does not return to the source aquifer. Consumed volume is dependent on the proposed use and its associated percentage of known consumption. Net depletion is assumed to be equivalent to the consumption on an annual basis unless return flows do not accrete to the potentially affected surface water.

43. The proposed wells are located approximately 8,500 ft from the Flathead River, 2,040 ft from Trumbull Creek, 9,800 ft from Spring Creek, 9,400 ft from Gooderich Bayou, and 7,100 ft from the Whitefish River. Of these sources, the Whitefish River and Flathead River were considered to be connected to the shallow aquifer (more details in the Groundwater Permit Technical Analysis Report Part A generated for this application, available upon request). Non-consumed volumes attributed to these sources are shown in **Table 8.**

44. Areas of connection to the Deep Aquifer are determined from locations where the lacustrine-till aquitard is thinnest. The Flathead River, approximately 8,500 east of the project area down to and including Flathead Lake, is the potentially depleted reach as a result of drawdown through the overlying confining layer from groundwater pumping. Net depletions to the Flathead River as a result of the proposed appropriation are shown in **Table 9.** Legal availability of water in the Flathead River (**Table 5**) and Flathead Lake (**Table 7**) exceeds net depletions.

45. The proposed appropriation is permitted by Public Water Supply (PWS) #MT0000929, which is actively monitored by the Montana Department of Environmental Quality (DEQ).

46. The Department finds there will be no adverse effects to senior surface or groundwater appropriators on potential affected surface and groundwater sources resulting from the Applicant's proposed diversion of 140 GPM up to 15.46 AF of water annually based on:

a. The Applicant's plan to regulate their water use to satisfy the water rights of senior appropriators;
b. The analysis of potential drawdown in neighboring wells demonstrating that there are zero wells anticipated to experience drawdown from the proposed appropriation;
c. The Department's finding that water is legally available in the aquifer; and,
d. The Department's finding that water is legally available in the hydraulically connected reaches of the Flathead River and Flathead Lake.

ADEQUATE MEANS OF DIVERSION

FINDINGS OF FACT

47. The proposed project will utilize two public water supply (PWS) wells completed in the Flathead Deep Alluvial Aquifer (Deep Aquifer). The East well, POD #1, is drilled to a depth of 235 feet BGS and is perforated between 219-234 feet BGS. The West Well, POD #2, is drilled to a depth of 255 feet BGS and a perforated interval between 205-220 feet BGS. The two wells, which are 50 feet apart, both have a static water level at 15 feet BTC. The two wells will operate on an alternating schedule pumping up to 140 GPM (peak instantaneous demand) up to 15.46 AF per year.

48. Predicted theoretical drawdown in **Table 3** for the proposed wells is modeled for the period of diversion using the monthly pumping schedule identified in **Table 1.**

49. A Franklin Electric 6 inch Sand Fighter 10-horsepower 3-phase submersible motor equipped with a Franklin Electric 6-inch SSI series 10-horsepower 150SSI pump end is installed in each of the wells. The pumps are controlled by a variable frequency drive (VFD) set to maintain system pressure at 60 PSI. The total dynamic head (TDH) of the system at a pumping rate of 140 GPM is 216.34 feet based on:

a. The maximum operating pressure of 60 PSI (equivalent to 200.14 feet of head);
b. The 16-foot elevation gain from the static water level to the control room; and,
c. Friction losses for 16 feet of 4-inch galvanized drop pipe (0.25 feet of head).

50. Water is conveyed from the well heads through a pitless adaptor and via 440 feet of 4-inch diameter PVC (DR18, C900) pipe to the mechanical room located in the basement of the terminal building, where water is then distributed for various commercial uses throughout the building.

51. The proposed appropriation is permitted by Public Water Supply (PWS) #MT0000929, which is actively monitored by the Montana Department of Environmental Quality (DEQ).

52. The Department finds that the system is capable of supplying 140 GPM up to 15.46 AF from the two alternating wells.

BENEFICIAL USE

FINDINGS OF FACT

53. The Applicant is proposing to divert 140 GPM up to 15.46 AF for commercial purposes related to potable water service for the Glacier Park International Airport.

54. The Applicant provided estimates of Peak Instantaneous Demand of the project of 140 GPM based on a fixture count analysis and values given in the American Water Works Association (AWWA) M22- Manual of Water Supply Practices. The Applicant provided fixture count analysis is summarized in **Table 10** below.

Table 10: Applicant Provided Fixture Count Analysis			
Fixture	**# of Fixtures**	**Fixture Value (GPM)**	**Total Fixture Value (GPM)**
Toilet (Flush Valve)	64	35.0	2,240.0
Urinal (Flush Valve)	20	35.0	700.0
Faucet (Lavatory)	63	1.5	94.5
Faucet (Utility Sink)	7	4.0	28.0
Faucet (Kitchen Sink)	10	2.2	22.0
Total			**3,084.5**

55. The Applicant applied the total fixture value to Table 4-3 of the AWWA M22 Manual to determine a "Probable Demand" of 155 GPM which was multiplied by a pressure adjustment factor of 0.9 (Table 4-1 of AWAA M22 Manual) based on an average system pressure of 50 PSI to calculate a Peak Instantaneous Demand of 140 GPM.

56. The Applicant provided average daily volume demand calculations based on two existing water production meter readings 273 days apart: October 31, 2018 (2,061 gallons) and July 31, 2019 (1,866,180 gallons). An average daily demand was calculated by dividing the amount of usage across this time period by the number of days:

$$Total\ gallons\ used\ in\ 273\ days = 1{,}866{,}180\ gallons - 2{,}061\ gallons = 1{,}864{,}119\ gallons$$

$$\boldsymbol{Average\ Daily\ Demand_{calcualted}} = 1{,}864{,}119\ gallons/273\ days = \mathbf{6{,}828\ GPD}$$

57. The Applicant calculated the average demand per enplanement based on Glacier Park International Airport records showing a total of 244,177 enplanements between October 31, 2018 and July 31, 2019:

$$1{,}864{,}119\ gallons/244{,}177\ enplanements = \mathbf{7.63\ gallons\ per\ enplanement}$$

58. To accommodate for growth, the Applicant utilized a study involving past numbers of enplanements, growth trends, and a concept and budget report to project an annual estimate of 550,508 enplanements by the year 2040. This estimate was used to calculate projected daily demands:

$$\boldsymbol{Average\ Daily\ Demand_{projected}} = \frac{550{,}508\ enplanements * 7.63\ \frac{gallons}{enplanement}}{365\ days} = \mathbf{11{,}508\ GPD}$$

59. The Applicant then applied a 20% contingency to accommodate for unknown uses associated with unanticipated growth to determine their final proposed volume:

$$\left(\frac{11{,}508\ gallons}{day} * 365\ days * \frac{1\ AF}{325{,}851\ gallons}\right) * 120\% = \mathbf{15.46\ AF}$$

60. The Department determines that the Applicant has provided a reasonable estimate of volume based on existing data. However, due to the unpredictable nature of population growth and or tourism affecting traffic through Glacier Park International Airport (and thus water use), the provisional beneficial water use permit will be subject to the following conditions:

> THE APPROPRIATOR SHALL INSTALL A DEPARTMENT APPROVED IN-LINE FLOW METER AT A POINT IN THE DELIVERY LINE APPROVED BY THE DEPARTMENT. WATER MUST NOT BE DIVERTED UNTIL THE REQUIRED MEASURING DEVICE IS IN PLACE AND OPERATING. ON A FORM PROVIDED BY THE DEPARTMENT, THE APPROPRIATOR SHALL KEEP A WRITTEN MONTLY RECORD OF THE FLOW RATE AND VOLUME OF ALL WATER DIVERTED, INCLUDING THE PERIOD OF TIME. RECORDS SHALL BE SUBMITTED BY JANUARY 31 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR UNTIL THE BENEFICIAL WATER USE PERMIT IS PERFECTED AND THE DEPARTMENT RECEIVES A PROJECT COMPLETION NOTICE. IN THE EVENT THAT AUTHORIZED FLOW RATES AND/OR VOLUMES HAVE BEEN EXCEEDED DURING PERFECTION OF THE PERMIT OR THE APPROPRIATOR FAILS TO SUBMIT ANNUAL REPORTS, THE DEPARTMENT MAY CONTINUE TO REQUIRE ANNUAL SUBMITIONS OF MONTHLY FLOW RATE AND VOLUME RECORDS. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF A PERMIT OR CHANGE. RECORDS MUST BE SENT TO THE WATER RESOURCES REGIONAL

OFFICE. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

61. The Department finds the proposed water use is beneficial, and that the requested flow rate of 140 GPM and annual volume of 15.46 AF are reasonably justified per ARM 36.12.1801(2).

POSSESSORY INTEREST

FINDINGS OF FACT

62. The Applicant signed 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

PHYSICAL AVAILABILITY

63. 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."

64. It is the Applicant's burden to produce the required evidence. *In the Matter of Application for Beneficial Water Use Permit No. 27665-41I 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).

65. 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).

66. The Applicant has proven that water is physically available at the proposed point of diversion in the amount Applicant seeks to appropriate. Section 85-2-311(1)(a)(i), MCA. (FOF 11-23).

LEGAL AVAILABILITY

67. 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).

68. 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.

69. Pursuant to *Montana Trout Unlimited v. DNRC*, 2006 MT 72, 331 Mont. 483, 133 P.3d 224, the Department recognizes the connectivity between surface water and ground water and the effect of pre-stream capture on surface water. *E.g., Wesmont Developers v. DNRC*, CDV-2009-823, Montana First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 7-8; *In the Matter of Beneficial Water Use Permit Nos. 41H 30012025 and 41H 30013629 by Utility Solutions LLC* (DNRC Final Order 2006) (mitigation of depletion required), *affirmed*, *Faust v. DNRC et al.*, Cause No. CDV-2006-886, Montana First Judicial District (2008); *see also Robert and Marlene Takle v. DNRC et al.*, Cause No. DV-92-323, Montana Fourth Judicial District for Ravalli County, *Opinion and Order* (June 23, 1994) (affirming DNRC denial of Applications for Beneficial Water Use Permit Nos. 76691-76H, 72842-76H, 76692-76H and 76070-76H; underground tributary flow cannot be taken to the detriment of other appropriators including surface appropriators and ground water appropriators must prove unappropriated surface water, *citing Smith v. Duff*, 39 Mont. 382, 102 P. 984 (1909), and *Perkins v. Kramer*, 148 Mont. 355, 423 P.2d 587 (1966)); *In the Matter of Beneficial Water Use Permit No. 80175-s76H by Tintzman* (DNRC Final Order 1993)(prior appropriators on a stream gain right to natural flows of all tributaries in so far as may be necessary to afford the amount of water to which they are entitled, *citing Loyning v. Rankin* (1946), 118 Mont. 235, 165 P.2d 1006; *Granite Ditch Co. v. Anderson* (1983), 204 Mont. 10, 662 P.2d 1312; *Beaverhead Canal Co. v. Dillon Electric Light & Power Co.* (1906), 34 Mont. 135, 85 P. 880); *In the Matter of Beneficial Water Use Permit No.* 63997-*42M by Joseph F. Crisafulli* (DNRC Final Order 1990) (since there is a relationship between surface flows and the ground water source proposed for appropriation, and since diversion by Applicant's well appears to influence surface flows, the ranking of the proposed appropriation in priority must be as against all rights to surface water as well as against all groundwater rights in the drainage).

70. Because the Applicant bears the burden of proof as to legal availability, the Applicant must prove that the proposed appropriation will not result in prestream capture or induced infiltration and cannot limit its analysis to ground water. Section 85-2-311(a)(ii), MCA. Absent such proof, the Applicant must analyze the legal availability of surface water in light of the proposed ground water appropriation. *In the Matter of Application for Beneficial Water Use Permit No. 41H 30023457 By Utility Solutions LLC* (DNRC Final

Order 2007) (permit denied); *In the Matter of Application for Beneficial Water Use Permit No. 76H-30028713 by Patricia Skergan and Jim Helmer* (DNRC Final Order 2009); *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 5 ; *Wesmont Developers v. DNRC*, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 11-12.

71. Where a proposed ground water appropriation depletes surface water, Applicant must prove legal availability of amount of depletion of surface water throughout the period of diversion either through a mitigation /aquifer recharge plan to offset depletions or by analysis of the legal demands on, and availability of, water in the surface water source. *Robert and Marlene Takle v. DNRC*, Cause No. DV-92-323, Montana Fourth Judicial District for Ravalli County, *Opinion and Order* (June 23, 1994); *In the Matter of Beneficial Water Use Permit Nos. 41H 30012025 and 41H 30013629 by Utility Solutions LLC* (DNRC Final Order 2006) (permits granted), *affirmed*, *Faust v. DNRC et al.*, Cause No. CDV-2006-886, Montana First Judicial District (2008); *In the Matter of Application for Beneficial Water Use Permit 41H 30019215 by Utility Solutions LLC* (DNRC Final Order 2007 *)*(permit granted*), affirmed*, *Montana River Action Network et al. v. DNRC*, Cause No. CDV-2007-602, Montana First Judicial District (2008); *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 analyze legal availability outside of irrigation season (where mitigation applied)); *In the Matter of Application for Beneficial Water Use Permit No. 41H 30026244 by Utility Solutions LLC* (DNRC Final Order 2008); *In the Matter of Application for Beneficial Water Use Permit No. 76H-30028713 by Patricia Skergan and Jim Helmer* (DNRC Final Order 2009)(permit denied in part for failure to analyze legal availability for surface water depletion); *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 5 (Court affirmed denial of permit in part for failure to prove legal availability of stream depletion to slough and Beaverhead River); *Wesmont Developers v. DNRC*, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 11-12 ("DNRC properly determined that Wesmont cannot be authorized to divert, either directly or indirectly, 205.09 acre-feet from the Bitterroot River without establishing that the water does not belong to a senior appropriator"; Applicant failed to analyze legal availability of surface water where projected surface water depletion from groundwater pumping); *In the Matter of Application for Beneficial Water Use Permit No. 76D-30045578 by GBCI Other Real Estate, LLC* (DNRC Final Order 2011) (in an open basin, Applicant for a new water right can show legal availability by using a mitigation/aquifer recharge plan or by showing that any depletion to surface water by groundwater pumping will not take water already appropriated; development next to Lake Koocanusa will not take previously appropriated water). Applicant may use water right claims of potentially affected appropriators as a substitute for "historic beneficial use" in analyzing legal availability of surface water under § 85-2-360(5), MCA. *Royston, supra*.

72. 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. Section 85-2-311(1)(a)(ii), MCA. (FOF 24-37).

ADVERSE EFFECT

73. 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.*, 211 Mont. 91, 685 P.2d 336 (1984) (purpose of the Water Use Act is to protect senior appropriators from encroachment by junior users); *Bostwick Properties, Inc.*, ¶ 21.

74. 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(5).

75. 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*, 4 (2011).

76. 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*, 249 Mont. 425, 816 P.2d 1054 (1991).

77. 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*, 7 (2011) (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). 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.

78. 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*, 8 (2011).

79. 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. Section 85-2-311(1)(b), MCA. (FOF 38-46).

ADEQUATE DIVERSION

80. 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.

81. 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.

82. Water wells must be constructed according to the laws, rules, and standards of the Board of Water Well Contractors to prevent contamination of the aquifer. *In the Matter of Application for Beneficial Water Use Permit No.* 41I-105511 *by Flying J Inc.* (DNRC Final Order 1999).

83. 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. Section 85-2-311(1)(c), MCA (FOF 47-52).

BENEFICIAL USE

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

85. 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*; *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* , 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).

86. 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*, 3 (2011) (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).

87. It is the Applicant's burden to produce the required evidence. *Bostwick Properties, Inc. v. DNRC*, 2013 MT 48, ¶ 22, 369 Mont. 150, 296 P.3d 1154 ("issuance of the water permit itself does not become a clear, legal duty until [the applicant] proves, by a preponderance of the evidence, that the required criteria have been satisfied"); *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*.

88. Applicant proposes to use water for commercial use which is a recognized beneficial use. Section 85-2-102(5), MCA. Applicant has proven by a preponderance of the evidence commercial use is a beneficial use and that 15.46 AF of diverted volume and 140 GPM is the amount needed to sustain the beneficial use. Section 85-2-311(1)(d), MCA. (FOF 53-61).

POSSESSORY INTEREST

89. 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.

90. 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.

91. 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. Section 85-2-311(1)(e), MCA. (FOF 62).

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. 76LJ 30163930 should be GRANTED.

The Department determines the Applicant may divert groundwater from the Flathead Deep Alluvial Aquifer, by means of two wells drilled to 255 and 235 feet, from January 1 to December 31 at 140 gallons per minute up to 15.46 acre-feet, from points in the NE ¼ of SW ¼ of NE ¼ of Section 3, Township 29N, Range 21W, Flathead County, Montana, for Commercial beneficial use. The place of use is generally located in Government Lot 3 in the NE ¼ of SW ¼ of NE ¼ of Section 3, Township 29N, Range 21W, Flathead County, Montana.

92. The application will be subject to the following conditions, limitations, or restrictions:

THE APPROPRIATOR SHALL INSTALL A DEPARTMENT APPROVED IN-LINE FLOW METER AT A POINT IN THE DELIVERY LINE APPROVED BY THE DEPARTMENT. WATER MUST NOT BE DIVERTED UNTIL THE REQUIRED MEASURING DEVICE IS IN PLACE AND OPERATING. ON A FORM PROVIDED BY THE DEPARTMENT, THE APPROPRIATOR SHALL KEEP A WRITTEN MONTLY RECORD OF THE FLOW RATE AND VOLUME OF ALL WATER DIVERTED, INCLUDING THE PERIOD OF TIME. RECORDS SHALL BE SUBMITTED BY JANUARY 31 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR UNTIL THE BENEFICIAL WATER USE PERMIT IS PERFECTED AND THE DEPARTMENT RECEIVES A PROJECT COMPLETION NOTICE. IN THE EVENT THAT AUTHORIZED FLOW RATES AND/OR VOLUMES HAVE BEEN EXCEEDED DURING PERFECTION OF THE PERMIT OR THE APPROPRIATOR FAILS TO SUBMIT ANNUAL REPORTS, THE DEPARTMENT MAY CONTINUE TO REQUIRE ANNUAL SUBMITIONS OF MONTHLY FLOW RATE AND VOLUME RECORDS. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF A PERMIT OR CHANGE. RECORDS MUST BE SENT TO THE WATER RESOURCES REGIONAL OFFICE. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

NOTICE

The Department will provide a notice of opportunity for public comment on this application and the Department's Draft Preliminary Determination to Grant pursuant to § 85-2-307, MCA. The Department will set a deadline for public comments to this application pursuant to §§ 85-2-307, and -308, MCA. If this application receives public comment pursuant to § 85-2-307(4), the Department shall consider the public comments, respond to the public comments, and issue a preliminary determination to grant the application, grant the application in modified form, or deny the application. If no public comments are received pursuant to § 85-2-307(4), MCA, the Department's preliminary determination will be adopted as the final determination.

/Original signed by Jim Ferch

Jim Ferch, Manager
Kalispell Regional Office
Montana Department of Natural Resources and Conservation

CERTIFICATE OF SERVICE

This certifies that a true and correct copy of the DRAFT PRELIMINARY DETERMINATION TO GRANT was served upon all parties listed below on this Dated this 19th day of February, 2025, by first class United States mail.

FLATHEAD MUNICIPAL AIRPORT AUTHORITY
4170 HIGHWAY 2 EAST
KALISPELL, MT 59901

and:

BRAD BENNETT
WATER & ENVIRONMENTAL TECHNOLOGIES
102 COOPERATIVE WAY, STE 100
KALISPELL, MT 59901

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KRISTAL KIEL, WATER RESOURCE SPECIALIST
KALISPELL Regional Office, (406) 752-2288