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

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| **IN THE MATTER OF APPLICATION FOR BENEFICIAL WATER USE PERMIT NO. 76LJ-30102978 BY MONTANA ARTESIAN WATER COMPANY** | **)**<br>**)**<br>**)**<br>**)** | **FINAL ORDER** |

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Pursuant to the provisions of §§ 85-2-309 through 311, MCA (the Water Use Act); § 2-4-601, *et. seq., MCA* (the contested case provisions of the Montana Administrative Procedure Act); and Admin. R. Mont. 36.12.201, *et. seq.*, a contested case hearing was held before the Department of Natural Resources and Conservation (Department) on September 19 - 21, 2017 in Kalispell, Montana. The purpose of the contested case hearing was to hear objections to Application for Beneficial Water Use Permit No. 76LJ-30102978 by Montana Artesian Water Company for which the Department issued a Preliminary Determination to Grant pursuant to § 85-2-307, MCA, on January 14, 2016 (PD).

This Final Order must be read in conjunction with the January 14, 2016 Preliminary Determination to Grant which is hereby incorporated by reference.

## APPEARANCES

Applicant, Montana Artesian Water Company (MAWC), appeared at the hearing through counsel John E. Bloomquist and Richard C. Tappan. Providing expert testimony on behalf of the Applicant were Roger Noble, Applied Water Consulting, and Brad Bennett, Applied Water Consulting. Providing rebuttal testimony for Applicant was Cameron Stringer, hydrogeologist.

Objector, United States Fish and Wildlife Service (USFWS), appeared at the hearing through counsel John C. Chaffin. Testifying on behalf of USFWS was Mark Maskill, manager, USFWS Creston National Fish Hatchery. Providing expert testimony for USFWS was Jaron Andrews, hydrologist USFWS.

Objector, Dora Carroll, appeared at the hearing through counsel Peter F. Carroll.

Objectors, Laurel Fullerton, Keith and Sandra Perry, Steven Harvey, Jean and Marcus Carlson, Gail Watson-Fulsaas and Martin Fulsaas, Melanie Cross, Flathead County School

District No. 3, Tara and Vance Carolin, Donald and Gwen Burtch, Steven Brandt and Elizabeth Hughes, Patricia and Thomas Tucker, Bear Paw Properties, LC, Cynthia Edstrom and Steven Moore, Alan and Deirdre Coit, Robert Mayo and Janice Rayford, Amy and Gregory Eller, Adele Zimmerman, Towle Enterprises, Inc., Paul Koch, Frank Woods, Jr., Cathryn Robocker, Dale Sonstelie, Merle Baldwin, Ashley and Douglas Mason, Amy and John Waller, Leanne and Robert Wagner, Hanson, Inc., J. Elise Robocker, Charles and Rennie Corrigan, Margo Leavitt, and Lawrence Iwersen 2005 Revocable Trust, (herein referred to as "Objector Group"), appeared at the hearing through counsel John J. Ferguson and Graham J. Coppes. Testifying on behalf of Objector Group was Steven Harvey, Gail Watson-Fulsaas, Paul Koch, Dale Sonstelie, and Patrick Nickol. Providing expert testimony for Objector Group was Mikel Siemens, Core Water Consulting; Tom Myers, PhD., hydrologic consultant; Thomas Maddock, III, PhD., University of Arizona; and Willis Weight, PhD., WDW Writing, Consulting & Planning Inc. Dr.'s Weight and Maddock also provided rebuttal testimony for Objector Group.

Objector David Eychner did not appear at the hearing but had previously informed the Hearing Examiner that he would be unavailable.

Objector, Flathead Lakers, did not appear at the hearing but their counsel, Jack Tuholske, informed the Hearing Examiner that he would be unavailable.

Objectors, Richard and Glenda Billman, were present at the hearing but declined to actively participate in the proceedings.

Objector, Donald Hauth, did not appear at the hearing without prior notice and the Hearing Examiner notes that Mr. Hauth did not participate in any of the pre-hearing matters. Objector Donald Hauth's objection is **DISMISSED**.

DNRC employees Kathy Olsen, Kalispell Regional Manager; Nate Ward, Kalispell Water Resource Specialist; Attila Folnagy, Hydrogeologist; and Russell Levens, Hydrogeologist, were examined by and provided testimony for all parties.

## EXHIBITS

Extensive Exhibits were produced by Applicant, Objector Group, and USFWS. Many of those exhibits are duplicative of each other and of the material contained in the official file in this matter. Exhibits are further discussed and cross referenced in Appendix A. Appendix A shows all of the exhibits identified as either duplicative from any party and/or of the official file.

Appendix A also shows those exhibits offered but not admitted by this Hearing Examiner due to non-relevance to the criteria for issuance of a permit under § 85-2-311, MCA.

## PRELIMINARY MATTERS

1. Pursuant to Application for Beneficial Water Use Permit No. 76LJ 30102978 by Montana Artesian Water Company, MAWC proposes to pump 1 CFS (450 GPM) up to 710.53 Acre-Feet (AF) annually from a well for commercial and geothermal use in a water bottling plant. The well is 222 feet deep and completed in a deep alluvial aquifer of the Flathead Valley commonly referred to by the Montana Bureau of Mines and Geology (MBMG) as the Deep Aquifer. The proposed point of diversion is located in the SENWSE Section 20, Township 28N, Range 20W, Flathead County. The proposed period of diversion is January 1-December 31. The proposed period of use for commercial and geothermal use at the water bottling facility is January 1-December 31. The place of use is generally located in the SENWSE Section 20, Township 28N, Range 20W, Flathead County. (PD)

2. Under the proposed commercial use of up to 710.53 AF per year, water will be used for facility water for bathrooms, break room, etc. (0.76 AF), equipment rinsing and facility washing (1.12 AF), water bottle washing and rinsing water (120.57 AF), and water bottling (588.08 AF). (PD)

3. The proposed geothermal use is for 60 GPM up to 12.28 AF per annum and is planned as a temporary use. The volume appropriated for geothermal use will count against the volume bottled; the maximum combined appropriation of these two uses will be 588.08 AF per annum. Upon full buildout, the Applicant plans to bottle the entire volume of 588.08 AF, however as the water bottling plant develops, up to 12.28 AF per annum will be used for the geothermal purpose. During build out, the flow rate of all uses will be managed to not exceed 1 CFS. (PD)

4. The total proposed appropriation is for 1 CFS diverted flow up to 710.53 AF diverted volume per annum. Consumptive use of bottled water is expected to be 100% and is equal to 588.08 AF per year. Water used for the geothermal purpose will ultimately end up being used for bottling; therefore, no consumptive use is assigned for the geothermal purpose. Water used for bottle rinsing, facility washing, and on-site worker uses will be discharged into a drain field; therefore, the consumptive use is estimated to be 10% of the total requirements of 122.45

AF for these uses, or 12.25 AF per year. The total annual consumptive use is calculated to be 600.33 AF which equals an average consumption rate of 372.2 GPM. (PD)

5. In order to obtain a permit, the MAWC was required to prove the following § 85-2-311, MCA, criteria by a preponderance of the evidence:

> (1)(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 . . .

§ 85-2-311(1)(a-e), MCA.

6. The Department issued a Preliminary Determination to Grant Application for Beneficial Water Use Permit No. 76LJ 30102978 by Montana Artesian Water Company on January 14, 2016, pursuant to § 85-2-307(2)(a)(ii), MCA. In its PD, the Department found and concluded that MAWC proved by a preponderance of the evidence that each of the applicable 311 criteria were satisfied. § 85-2-311(1)(a-e), MCA and PD.

7. Pursuant to § 85-2-307, MCA, the Department published notice in the Daily Interlake, a daily newspaper of general circulation printed in the City of Kalispell, Flathead County, Montana on January 27, 2016. Notice was also served on individuals and entities known by the Department to be interested on January 26, 2016. The public notice was re-noticed by individual service and by publication in the Daily Interlake on March 22 and 23, 2016, in order to

extend the objection deadline. The objection deadline was extended to the full 60 days authorized by § 85-2-307(3) due to extensive public interest. The objection deadline was ultimately set for April 7, 2016.

8. The Application received 75 objections of which 39 were deemed valid objections. The valid objections were from Merle J. Baldwin; Bear Paw Properties Inc.; Steven A. Brant & Elizabeth M. Hughes; Donald E. Burtch; Marcus and Jean Carlson; Vance & Tara Carolin; Alan & Deirdre Coit; Charles J. & Rennie C. Corrigan; Melanie Cross; Gregory D. & Amy S. Eller; Flathead County School Dist. #3 – Fair Mont Egan School; Laurel Fullerton; Martin Fulsaas & Gail Watson-Fulsaas; Hanson, Inc.; Steven J. Harvey; Iwersen, Lawrence 2005 Revocable Trust; Paul Koch; Margo R. Leavitt; Douglas W. & Ashley E. Mason; Steven F. Moore & Cynthia S. Edstrom; D. Keith & Sandra D. Perry; Janice H. Rayford & Robert Mayo; J. Elise Robocker; Cathryn J. Robocker; Dale Sonstelie; Towle Enterprises Inc.; Thomas N. & Patricia M. Tucker; Robert O. & Leanne Wagner; John & Amy Waller; Frank M. Woods, Jr.; Adele Zimmerman; Richard C. & Glenda J. Billman; Dora Carroll; David Eychner; Flathead Lakers Inc.; Donald K. Hauth; U.S. Dept. of Interior Fish & Wildlife Service; Confederated Salish & Kootenai Tribes; and Montana LLC. The first 31 valid objectors listed above were initially represented by counsel Ryan Mattick and are referred to in this proceeding as "Objector Group." John J. Ferguson and Graham J. Coppes joined Mr. Mattick as co-counsel in June 2017. Mr. Mattick eventually withdrew as counsel in July 2017. Dora Carroll was represented throughout this matter by counsel Peter F. Carroll. Flathead Lakers were represented in this matter by counsel Jack Tuholske. The U.S. Dept. of Interior Fish & Wildlife Service (USFWS) was represented in this matter by counsel John C. Caffin, U.S. Dept. of Interior Office of the Solicitor. The Confederated Salish & Kootenai Tribes (CSKT) were represented in this matter by counsel John B. Carter and Rhonda R. Swaney. Objectors Richard & Glenda Billman, David Eychner, Donald K. Hauth, and Montana LLC remained without counsel through their respective involvement in this proceeding.

9. Montana LLC withdrew as objectors in this matter on November 10, 2016.

10. CSKT withdrew as objectors in this matter after participating in the preliminary matters (see below) on March 2, 2017.

11. Because valid objections were received on the Application, the Department was required to conduct a contested case hearing on the objections. Among all the objections, the § 85-2-

311(1), MCA, criteria for issuance of a Beneficial Water Use Permit that received at least one valid objection were §§ 85-2-311(1)(a)(i), (1)(a)(ii), (1)(b), (1)(c), (1)(d), (1)(e), and (1)(f), MCA. Those criteria are referred to respectively as physical availability, legal availability, adverse effect, adequate means of diversion, beneficial use, possessory interest, and effects on water quality of a prior appropriator. The requirement that MAWC prove the water quality criteria in Section 311 (1)(f), was triggered by the filing of a valid water quality objection. Therefore, whether the proposed project may adversely affect the water quality of a prior appropriator was not the subject of any findings or conclusions in the PD. *See,* § 85-2-311(2), MCA.

12. The applicant in a permit proceeding has the burden of proof, at all stages of the proceeding, to prove that the applicable Section 311 criteria have been met by a preponderance of the evidence. That being said, at the onset of a contested case proceeding in which a Preliminary Determination to Grant has already been issued by the Department, the Department has determined that the applicant has satisfied the applicable criteria for issuance of a permit or change in appropriation right. § 85-2-307(2)(ii), MCA. If valid objections are not received on an application and the Department preliminarily determined to grant the permit, the department shall grant the application as proposed in the preliminary determination. § 85-2-310(3), MCA. In the instant matter, the Kalispell Regional Office issued its Preliminary Determination to Grant finding and concluding that the Application satisfied the applicable criteria. Therefore, with regard to Section 311(1)(a-e), the burden of production shifted to the Objector to demonstrate that the Applicant failed to satisfy its burden in the contested case proceeding. Because the Applicant retains the burden of proof as to the criteria, Applicant may present evidence at the contested case hearing to rebut relevant evidence pertaining to the objection that the Objector proffers at the hearing.[1]

13. Prior to the hearing proper, the parties agreed to brief some preliminary issues related to the burden of proof that is required for this particular application. A number of the objections

**1** See generally, *Montana Environmental Info. C'tr v. Montana Department of Environmental Quality*, 2005 MT96, 112 P.3d 964 (2005) (MEIC contested the issuance of a permit by MDEQ which was upheld after a contested case hearing. Upon judicial review, the District Court found that MEIC, as the challenging party, bore the burden of proof in the contested case hearing to show that the permit was improperly issued. Citing §§ 26-1-401 and 401, MCA, the Supreme Court found that the "party asserting a claim for relief bears the burden of producing evidence in support of that claim."; § 26-1-401, MCA ("[t]he initial burden of producing evidence as to a particular fact is on the party who would be defeated if no evidence were given on either side. Thereafter, the burden of producing evidence is on the party who would suffer a finding against him in the absence of further evidence."); § 26-1-402, MCA ("[e]xcept as otherwise provided by law, a party has the burden of persuasion as to each fact the existence or nonexistence of which is essential to the claim for relief or defense he is asserting.")

raised the issue that the proposed use of water is for out of state use and subject to additional criteria and a heightened level of proof. Specifically, § 85-2-311(4), MCA, includes satisfaction of additional criteria before appropriating water for out of state use, and requires that an applicant prove the criteria of §§ 85-2-311(1) and (4) are met by clear and convincing evidence as opposed to a preponderance of the evidence applied by the Preliminary Determination: "The department may not issue a permit for the appropriation of water for withdrawal and transportation for use outside the state unless the applicant proves by clear and convincing evidence that: [the § 85-2-311(1) criteria] are met . . ." § 85-2-311(4)(b). (Audio 6/24/16)

14. Pursuant to that agreement this Hearing Examiner issued a "Minute Order" on June 28, 2016, which required briefs from any objectors concerning preliminary issues by August 5, 2016, with a response brief by the Applicant by September 9, 2016, and any reply briefs by September 23, 2016. Objector Group filed their "Objectors' Opening Brief on Preliminary Issues" on August 5, 2016. Objector Flathead Lakers filed a "Objector Flathead Lakers' Motion to Dismiss Application" on August 5, 2016. Objector CSKT filed a "Brief on Preliminary Issues" on August 4, 2016. Applicant filed their "Applicant's Response Brief" on September 9, 2016. Reply briefs were received from Objector Group and Flathead Lakers on September 23, 2016.

15. On October 28, 2016, this Hearing Examiner issued his "Order on Preliminary Issues" in which he essentially agreed with MAWC by concluding:

> Upon withdrawal of the water, filtration and disinfection, and after the water bottles have been capped and packaged, the bottled water is a completed product and commodity not unlike other water intensive commodities that are produced in Montana. The water bottling facility is located in Montana, the completed product is manufactured in Montana, and the appropriator's beneficial use accrues in Montana. The fact that bottled water may subsequently be sold out of state does not trigger the requirements of § 85-2-311(4).

(Order on Preliminary Issues 10/28/2016)

This matter was then set for hearing regarding the criteria found in § 85-2-311(1), MCA, based on the preponderance of the evidence standard.

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**Physical Availability**

FINDINGS OF FACT

16. The PD determined that, based on the pump/aquifer test, the observation wells (Koch Well and Nickol Well) were properly monitored prior to the beginning of the test, that the MAWC Well had been allowed to flow freely at 175 GPM until the flow had stabilized at 153 GPM at the beginning of the pump/aquifer test, and that the test started on March 9, 2015 at 1:10 PM and continued without interruption until 1:10 PM on March 12, 2015 at an average flow rate of 455 GPM. The MAWC Well was evaluated with the 72-hour pump/aquifer test at 455 GPM with a maximum drawdown of 121.9 feet below the static water level of -4.28 feet below ground surface (bgs), leaving 104.4 feet of water column above the bottom of the well. In order to determine the drawdown during the period of diversion, the Department modeled the period of diversion for MAWC #1 using a constant pumping rate of 440.5 GPM and adding drawdown from daily pumping. The aquifer will experience the largest drawdown of 55 feet at the end of the period of diversion. The total maximum drawdown of 174.7 feet for MAWC #1 is the sum of the modeled aquifer drawdown at the end of one year (55 feet), and the drawdown (119.7 feet) at 1,394 minutes (time it takes to pump the daily volume of 634,320 gallons) into the 72-hour aquifer test. This would leave 51.6 feet of water column above the bottom of MAWC #1.

17. Objectors expend considerable effort regarding what is referred to as Form 633 and the requirements of ARM 36.12.121 and ARM 36.12.1703. Objectors argue that fields on the Form 633 were not filled in and that is fatal to the pump and aquifer test. It is undisputed that there was incomplete information on well depths, dimensions and perforated intervals for the two (Koch and Nickols) wells that were used as observation wells during the pump/aquifer test. It is undisputed that groundwater levels were not monitored in the production well prior to the beginning of the pump/aquifer test. It is also undisputed that all of the fields on the Form 633 were not filled in. Objectors specifically point to the fields regarding "measured discharge" from the production well. For example, while Form 633 states:

> Discharge to be measured several times per hour during the first 3 hours of pumping and thereafter several times per hour is discharge fluctuates and requires frequent adjustment; otherwise, *hourly measurements if discharge remains constant and requires little or no adjustment*. (emphasis provided)

Objectors point to Form 633 and the interval between the 4-hour pumping time and the

18-hour pumping time where no data was input. Objectors argue that the missing data on Form 633 is a violation of the requirements of ARM 36.12.121 *et. seq.* and therefore the pump/aquifer test cannot be used to form the basis for proving the physical availability requirement. (Hr'g Tr. 48:17 – 49:16; 50: 4-18; 51:21 – 52:6; 317:22 – 318:4; 320:1-10; 649:15-19; 687:9-12; Siemens Prefiled Test.; Objector Group Closing Brief; USFWS Closing Brief)

18. Applicant responds by arguing that the Department does not ask for information missing from Form 633 if it is not necessary for the pump/aquifer test analysis. Both Department hydrogeologists (Folnagy and Levens) agree that the MAWC pump test data was sufficient for analysis by the Department. The pump test conducted was a "very average test." (Hr'g Tr. 269:20 – 271:15; 273:18-20; 304:23-25; 306:6 – 307:9; 758:23-25; 762:25 – 763:12) Applicant states that "while discharge measurements were not collected each hour, there were no large fluctuations in the discharge flow or observed impacts to the drawdown data. Typically, when discharge does not fluctuate, the data is presumed constant. (Hr'g Tr. 354:2-9; 636:2-23; 686:22-24)

19. While certain fields in the "Measured Discharge" column of Form 633 were left blank, the Applicant used a totalizing meter during the pump/aquifer test. The totalizing meter showed that during the 72-hour pump test 1,965,025 gallons of water were pumped. This figure equates to an average of 454.87 gpm over the course of the test. That figure corroborates the assertion that the pump test was a continual test at close to 455 gpm for 72 hours and no aberrations in the flow rate were occurring. Mr. Bennett testified that once the water level has stabilized "we generally check on it, not necessarily record a flow rate." (Hr'g Tr. 686:22-24)

20. Application No. 76LJ-30102978 was deemed correct and complete on December 30, 2015. "Correct and complete" means "that the information required to be submitted conforms to the standard of substantial credible information and that all of the necessary parts of the form requiring the information have been filled in with the required information for the department to begin evaluating the information." (File; § 83-2-102(8), MCA)

21. Testimony at the hearing clearly establishes that the Department considered the information provided by the Applicant as substantial credible information which included all the *necessary* information to evaluate the Application. Objectors conflate the missing information from Form 633 to mandate finding that the Applicant failed to prove the criteria. This Hearing

Examiner finds that the information missing from the Form 633 is not material to the determination of the physical availability criteria. (Hr'g Tr. 304:23 – 307:9; 758:23-25: 762:25 – 763:12)

22. The Deep Aquifer of the Kalispell Valley is considered to start at a depth of approximately 100 feet below ground surface (bgs) and may be thousands of feet thick. The Deep Aquifer underlies an area of approximately 300 square miles. Wells in the Kalispell Valley drilled to at least 100 feet bgs but less than 200 feet bgs obtain water from an Intermediate Aquifer or Deep Aquifer. Wells drilled to over 200 feet bgs derive water almost exclusively from the Deep Aquifer. (Exhibit A12 @ E2 p. 6; Exhibit OBJS33 @ p. 4)

23. Montana Bureau of Mines and Geology's (MBMG) water budget for the Deep Aquifer estimates an inflow of 213,000 acre-feet/year (AF/y) and a combined existing permitted pumped volume of 23,500 AF/y leaving an unappropriated flux of 190,000 AF/y. This finding was not disputed at the hearing. (Exhibit A13 E. 2 @40; A74)

24. The MAWC production well is drilled to a depth of 222 feet into the Deep Aquifer of the Kalispell Valley which is hundreds of feet thick. The Deep Aquifer is considered a single hydraulic connected system overlain by a confining unit (also described as a "leaky aquitard") which is between zero and "hundreds of feet thick." It is undisputed that the confining layer is probably intermittent with discontinuous layers varying from zero to hundreds of feet thick. On top of the confining unit is a shallow aquifer which is between 50 and 100 feet thick. (PD ¶ 1; Hr'g Tr. 278-9, 280; Exhibit A12 @E2 Fig. 7,8; A29 p. 14)

25. The MAWC production well is a flowing artesian well with a pressure head of -28.8 feet. In other words, if the well casing was extended above ground, the water would rise in the casing 28.8 feet. (PD ¶12)

26. The MAWC production well was allowed to flow until flow stabilized at 153 gpm or -4.28 feet bgs. A pump/aquifer test was performed beginning on March 6, 2015 (monitoring of background levels in observation wells) and March 15, 2015 (recovery phase of the test). The production well was pumped beginning on March 9, 2015 at a constant rate of 455 gallons per minute (gpm) for 72 hours. At the end of the 72-hour pump test, a semi-log graph of drawdown over time was created and extrapolated out for annual (pumping for 365 days) and drawdown was estimated. This drawdown was estimated to be 134 feet, leaving 92.28 feet of water

column remaining above the pump after one year of pumping. (File, Aquifer Test Report)

**Physical Availability**

CONCLUSIONS OF LAW

27. Montana statute requires that an applicant 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." (§85-2-311(1)(a)(i), MCA; PD @ ¶ 7)

28. Physical availability is determined by the Department by comparing the drawdown projected for the proposed period of diversion to the height of the water column above the pump in the proposed production well to determine if the requested appropriation can be maintained. (ARM 36.12.1703)

29. Objectors' arguments related to the sufficiency of the Form 633 are more properly directed toward the correct and complete requirements found in ARM 36.12.1601. Objectors' reliance on ARM 36.12.1703 and the reference in that rule to ARM 36.12.121 is not well taken. A close reading of ARM 36.12.1703 reveals that that rule is used to implement § 85-2-302, MCA, which is the section of statute dealing with "correct and complete" applications, not the § 85-2-311, MCA, criteria for issuance of a permit. ARM 36.12.1601(4) provides "[ ] correct and complete information is not necessarily the same as proving the [§ 85-2-311, MCA] criteria. The department can only grant an application if the [§ 85-2-311, MCA] criteria for issuance of a permit or change are proven." ARM 36.12.1601(5) provides "[a] water right permit application will be deemed *correct and complete* if a permit applicant's information, required to be submitted by ARM 36.12.110 through 36.12.116, 36.12.120, *36.12.121,* 36.12.1301, 36.12.1401, *36.12.1701 through 36.12.1707*, and 36.12.1802, *conforms to the standard of substantial credible information and all the necessary parts of the application form requiring the information, including any required addendums, have been filled in with the required information.*"

30. The fact that there was information missing from MWCA's Form 633 does not equate to inadequate proof of the criteria. The Department did not identify missing information from Form 633 as a deficiency in the Application. Accordingly, this aspect of the Application was deemed correct and complete as a matter of law. §85-2-302(5), MCA. The application materials and evidence regarding physical availability was then substantively analyzed for proof of the criteria

and the PD determined that MAWC proved by a preponderance of the evidence that water was physically available.

31. None of the Objectors have asserted or argued that after one year of pumping the MAWC well will not have a standing column of water above the pump level.

32. The Department's determination that there is water physically available at the proposed point of diversion in the amount that the applicant seeks to appropriate is established by the record. (FOF 16-26) Accordingly, the Hearing Examiner concludes that the MAWC proved by a preponderance of the evidence that water is physically available and concurs in ¶¶ 12-20 of the PD which are incorporated herein as part of this final order.

**Legal Availability**

FINDINGS OF FACT

33. The Department evaluates legal availability of groundwater as it relates to surface water depletions in the Flathead Deep Aquifer differently than in other areas of the state. The Department has determined that due to the upward gradient of groundwater in the valley, groundwater levels in the deep aquifer are effectively controlled by the surface water levels in the Flathead River and Flathead Lake. As such, only the Flathead River and Flathead Lake are used as surface water sources which could be depleted absent specific information to the contrary. (File, Jan. 10, 2011 memo)

34. The analysis conducted by DNRC regarding legal availability utilizes the January 10, 2011 Memo which identifies the Flathead River and Flathead Lake as the surface water sources potentially impacted by depletions due to groundwater pumping. The analysis is limited to those two sources due to the strong upward vertical gradient of groundwater movement exhibited by the Deep Aquifer. (PD ¶ 25)

35. The PD determined that water could reasonably be considered legally available based on the Department's January 10, 2011 memorandum that finds that the Deep Aquifer is controlled by the Flathead River and Flathead Lake and that therefore, "[a] new groundwater user will . . . reduce the discharge from the aquifer to the river and lake . . .." and "[t]he effects of [the depletion] will need to be evaluated via the stream depletion analysis at the Flathead River between Kalispell and Flathead Lake, as well as the lake itself." The PD used the stream

gaging stations at Columbia Falls and Polson and compared the water physically available with the identified legal demands (note, see ¶ 42, below). The PD determined that surface water was legally available during every month of the year, both in flow rate and volume. (PD ¶¶ 25-26)

36. Montana Bureau of Mines and Geology's water budget for the Deep Aquifer estimates an inflow of 213,000 acre-feet/year (AF/y) and a combined existing permitted pumped volume of 23,500 AF/y leaving an unappropriated flux of groundwater of 190,000 AF/y. (Exhibit A13 E. 2 @40; A74)

37. The Department used the aquifer test performed between March 6 and March 15, 2015 and applied the Neuman-Witherspoon solution to model the aquifer properties based on the leaky-confined nature of the Deep Aquifer. The Neuman-Witherspoon solution was selected because it provided the best fit of all the available solutions to the results of the aquifer test. (Hr'g Tr. 274 *et. seq.*)

38. Objectors provide voluminous testimony and exhibits to show why the Neuman-Witherspoon solution is not adequate to estimate aquifer properties. The Department is well aware that the Neuman-Witherspoon solution is not a perfect fit for the Flathead Valley Deep Aquifer and recognizes that in its analysis conducted in this matter. As Mr. Levens testified at his deposition[2] "[w]e feel it's the best representation of our conceptual model." Mr. Levens testified that the Neuman-Witherspoon introduces the least amount of bias and error while Dr. Neuman's "response was to do an extensive groundwater study, and possibly implement[ation] of a numerical model, and that's a very costly thing that has not historically been required for aquifer tests." Mr. Levens states that "my opinion is we typically have not required that level of analysis in water right cases, and particularly in areas where there are not established water availability issues, like the Flathead." (Deposition of Levens)

39. A thorough reading of Mr. Levens' Expert Report dated August 11, 2017 analyzes the concerns of each of the experts that presented testimony regarding the alleged deficiencies in the pump/aquifer test and the associated use of the Neuman-Witherspoon solution for the Deep Aquifer. Regarding Mr. Andrews testimony, Mr. Levens points out that while there is a well 2 miles east of the Creston Fish Hatchery which exhibits declining water levels, that well is located

2. While deposition testimony is not typically admissible unless it is used for impeachment purposes, in this matter Mr. Levens' deposition was offered as an exhibit and admitted without objection.

in an identified recharge area on the east edge of the Kalispell Valley. Furthermore, that well is completed in bedrock and not the Deep Aquifer and a nearby well which is located in the Deep Aquifer exhibits an increasing water level trend. Mr. Andrews also adjusts parameters in the Neuman-Witherspoon solution in order to provide an alternative estimate of drawdown in the Hatchery wells. Mr. Levens concludes that "[o]verall, testimony by Weight, Bennett, and Noble indicated the values used in the DNRC Aquifer Test Report are not arbitrarily high."

Regarding Ms. Siemens concerns regarding the incomplete documentation and inadequacies of the aquifer test for the MAWC well, Mr. Levens points out that the aquifer test does "provide usable data primarily from the Koch well that, along with the MAWC well, is completed in the Deep Aquifer. As pointed out above at ¶¶ 29-30, the incomplete documentation of the pump/aquifer test is not directly related to the § 85-2-311 criteria, but rather to the § 85-2-302 "correct and complete" determination. This Hearing Examiner finds that the test does provide useful and sufficient information despite the shortcomings in documentation.

Regarding Dr. Neuman's criticism of the use of the Neuman-Witherspoon solution, Mr. Levens, again points out that:

> DNRC understands the underlying assumptions of the Neuman and Witherspoon (1969) analytical model and that aquifer testing of the MAWC well is not adequate to allow a comprehensive or rigorous analysis using that model. DNRC has considered using other analytical models including those by Theis (1935) and Hantush (1961); however, each of those models also has limiting assumptions. Ultimately, I am unaware of a precedent, outside a proposed controlled groundwater area, of DNRC requiring the type of detailed investigation recommended by Dr. Neuman that would be necessary to rigorously apply the Neuman and Witherspoon (1969) model.

Mr. Levens notes that "Dr. Neuman does not provide an independent assessment of the MAWC aquifer test or evaluation of the permitting criteria."

Regarding Dr. Maddock's and Dr. Meyers' concerns, Mr. Levens points out that:

> Dr. Maddock provides some insight on the process of modeling base and historical cases to evaluate drawdown and net depletion. He states the base case can be derived from little or no data and be the result of a negotiation process or Court imposed. I am aware of negotiated modeling efforts in other states, Idaho in particular, that have been successful at resolving water right disputes. My understanding is that those negotiations involved all parties and their consultants in review and design of a model.
>
> Dr. Maddock concludes with comments on his review of a numerical groundwater model constructed by Dr. Willis Weight and concludes the proposed use will deplete sloughs

> and streamflow as its principal effect. Dr. Maddock advocates use of Dr. Weight's model; however, the lack of thorough review by DNRC and the applicant raises questions about the acceptability of the model for decision making.
>
> Dr. Maddock did not conduct an independent assessment of depletion, drawdown in wells, or permitting criteria.

and

> Dr. Myers testifies that groundwater levels in 26 wells within 1.5 miles of the MAWC well demonstrate that there is a natural upward hydraulic gradient from the deep aquifer to shallow aquifers and surface water. He concludes that pumping the MAWC well would lower the pressure in the aquifer and decrease the upward gradient resulting in decreased discharge into Egan Slough, the Flathead River, and Flathead Lake.
>
> Overall, Dr. Myers provides a good summary of the general hydrogeology of the vicinity of the MAWC well and a good discussion of basic groundwater hydraulics as it relates to drawdown in wells and depletion of surface waters. His criticism of the 2011 memo is correct to the extent that its wording could be improved; however, I believe Dr. Myers mistakes the basic purpose of the memo.

Mr. Levens concludes that conducting a detailed characterization of hydrogeological conditions at the MAWC site and any potentially impacted areas and depths requires a much more carefully designed and much larger scale study with an analysis, perhaps with the aid of a three-dimensional numerical model, is a level of analysis that DNRC has never required for a water right application and has only been used by DNRC in areas "where water availability or adverse effect concerns have been expressed in a petition for a controlled groundwater area." (Levens, 2017 Expert Report)

40. The following USGS gages were utilized to quantify median of mean monthly flows and volumes on the Flathead River and Flathead Lake: USGS Station #12363000, Flathead River at Columbia Falls which has a period of record from October 1951- September 2014, and USGS Station #12372000, Flathead River near Polson which has a period of record from October 1938- April 2015. The following tables summarize physical availability of water for the Flathead River and Flathead Lake for the year-round period of depletion from the proposed appropriation. (PD ¶ 19)

**Table 1: Flathead River at Columbia Falls USGS Gage # 12363000 (from PD)**

| | Jan | Feb | Mar | Apr | May | Jun |
|---|---|---|---|---|---|---|
| **Flow (CFS)** | 5,607.0 | 4,869.0 | 4,772.0 | 10,535.0 | 22,645.0 | 24,940.0 |

| | Jan | Feb | Mar | Apr | May | Jun |
|---|---|---|---|---|---|---|
| **Volume (AF)** | 344,157.7 | 269,937.4 | 292,905.4 | 625,779.0 | 1,389,950.1 | 1,481,436.0 |
| | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** |
| **Flow (CFS)** | 11,605.0 | 5,798.0 | 5,071.0 | 5,166.5 | 4,626.5 | 6,036.0 |
| **Volume (AF)** | 712,314.9 | 355,881.2 | 301,217.4 | 317,119.8 | 274,814.1 | 370,489.7 |

**Table 2: Flathead River near Polson USGS Gage # 12372000 (from PD)**

| | Jan | Feb | Mar | Apr | May | Jun |
|---|---|---|---|---|---|---|
| **Flow (CFS)** | 10,380.0 | 9,234.0 | 7,778.0 | 9,223.0 | 18,960.0 | 25,820.0 |
| **Volume (AF)** | 637,124.4 | 511,933.0 | 477,413.6 | 547,846.2 | 1,163,764.8 | 1,533,708.0 |
| | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** |
| **Flow (CFS)** | 13,605.0 | 6,317.0 | 6,092.5 | 7,369.0 | 8,838.0 | 10,070.0 |
| **Volume (AF)** | 835,074.9 | 387,737.5 | 361,894.5 | 452,309.2 | 524,977.2 | 618,096.6 |

41. The area of potential impact due to surface water depletions for this application will be from USGS gage #12363000 at Columbia Falls on the Flathead River to the inlet of Flathead Lake, and Flathead Lake downstream to USGS gage #12372000 on the Flathead River near Polson. Seasonal fluctuations of drawdown from groundwater pumping are expected to be dampened resulting in a constant year-round rate of depletion equal to the annual rate of consumption. The following table includes a breakdown of monthly depletions expected to occur within the Flathead River and Flathead Lake. (January 10, 2011 Memo; PD ¶ 25)

**Table 3. Summary of anticipated monthly net depletions (flow and volume) from hydraulically connected surface waters affected by the proposed groundwater appropriation (from PD)**

| Month | Consumption (AF) | Depletion (AF) | Depletion (GPM) |
|---|---|---|---|
| January | 50.0 | 50.0 | 372.2 |
| February | 50.0 | 50.0 | 372.2 |
| March | 50.0 | 50.0 | 372.2 |
| April | 50.0 | 50.0 | 372.2 |
| May | 50.0 | 50.0 | 372.2 |
| June | 50.0 | 50.0 | 372.2 |
| July | 50.0 | 50.0 | 372.2 |
| August | 50.0 | 50.0 | 372.2 |

| Month | Consumption (AF) | Depletion (AF) | Depletion (GPM) |
|---|---|---|---|
| September | 50.0 | 50.0 | 372.2 |
| October | 50.0 | 50.0 | 372.2 |
| November | 50.0 | 50.0 | 372.2 |
| December | 50.0 | 50.0 | 372.2 |
| **TOTAL** | **600.3** | **600.3** | |

42. The Department assessed all surface water legal demands on the Flathead River from the Flathead River at Columbia Falls, USGS gage #12363000, to the Inlet of Flathead Lake and on Flathead Lake to USGS gage # 12372000, on the Flathead River near Polson. When calculating legal demand volumes, irrigation and lawn/garden uses were delegated as occurring from April 1st to October 31st. This is done because all of the legal demands exist within irrigation climatic area three which has a standard period of use from April 1st to October 31st. All other water uses were analyzed as year-round uses. Due to the difficulty of differentiating the distribution of appropriated volume over the period of diversion, it was assumed that the flow rate of each legal demand is continuously diverted throughout each month of the period of diversion. This assumption leads to an overestimation of legal demands on volume of water. This Hearing Examiner finds this an appropriate measure of legal demands as it protects existing water users. A summary of all legal demands over the proposed period of depletion for the Flathead River and Flathead Lake are presented in Tables 4-5 below. (PD ¶ 26) The Department inadvertently omitted the legal demands on Egan Slough, which has a direct physical connection to the Flathead River in this analysis. Testimony at the hearing established that even with inclusion of the Egan Slough water rights in Table 4, below, water is considered legally available within that reach of the river. (Hr'g Tr. 61:18-25, 62:1-6, 18,20, 63:14-24, 78:15-25, 164:5-11; Exhibit A42)

**Table 4: Flathead River at Columbia Falls USGS Gage # 12363000 minus legal demands on Flathead River to inlet of Flathead Lake. (from PD)**

| Month | Water Physically Available (CFS) | Existing Legal Demands (CFS) | Physically Available Water minus Legal Demands (CFS) | Physically Available Water minus Legal Demands (AF) |
|---|---|---|---|---|
| January | 5,607.00 | 3,615.34 | 1,991.66 | 122,248.09 |
| February | 4,869.00 | 3,615.34 | 1,253.66 | 69,502.91 |
| March | 4,772.00 | 3,615.34 | 1,156.66 | 70,995.79 |
| April | 10,535.00 | 6,768.09 | 3,766.91 | 223,754.45 |
| May | 22,645.00 | 8,243.09 | 14,401.91 | 883,989.24 |
| June | 24,940.00 | 8,243.09 | 16,696.91 | 991,796.45 |
| July | 11,605.00 | 5,520.09 | 6,084.91 | 373,491.78 |
| August | 5,798.00 | 3,618.09 | 2,179.91 | 133,802.88 |
| September | 5,071.00 | 3,618.09 | 1,452.91 | 86,302.85 |
| October | 5,166.50 | 3,618.09 | 1,548.41 | 95,041.41 |
| November | 4,626.50 | 3,615.34 | 1,011.16 | 60,062.90 |
| December | 6,036.00 | 3,615.34 | 2,240.66 | 148,580.11 |

**Table 5: Flathead River near Polson USGS Gage # 12372000 minus legal demands on Flathead Lake (from PD)**

| Month | Water Physically Available (CFS) | Existing Legal Demands (CFS) | Physically Available Water minus Legal Demands (CFS) | Physically Available Water minus Legal Demands (AF) |
|---|---|---|---|---|
| January | 10,270.00 | 98.68 | 10,171.32 | 624,309.87 |
| February | 9,207.50 | 98.68 | 9,108.82 | 504,987.79 |
| March | 7,731.50 | 98.68 | 7,632.82 | 468,496.74 |
| April | 9,214.50 | 169.13 | 9,045.37 | 538,396.48 |
| May | 18,960.00 | 169.13 | 18,790.87 | 1,154,720.78 |
| June | 25,720.00 | 169.13 | 25,550.87 | 1,518,919.56 |
| July | 13,570.00 | 169.13 | 13,400.87 | 823,783.21 |
| August | 6,312.00 | 169.13 | 6,142.87 | 378,287.17 |
| September | 6,109.00 | 169.13 | 5,939.87 | 354,026.16 |
| October | 7,342.00 | 169.13 | 7,172.87 | 441,508.57 |
| November | 8,864.50 | 98.68 | 8,765.82 | 520,684.14 |
| December | 9,953.50 | 98.68 | 9,854.82 | 604,883.10 |

43. Montana Bureau of Mines and Geology's water budget for the Deep Aquifer estimates an inflow of 213,000 acre-feet/year (AF/y) and a combined existing permitted pumped volume of

23,500 AF/y leaving an unappropriated flux of groundwater of 190,000 AF/y. This Hearing Examiner finds that groundwater can reasonably considered legally available. (Exhibit A13 E. 2 @40; A74)

44. No testimony or exhibit was entered at the hearing in this matter regarding impacts to the the hydro-power rights on the Salish-Kootenai Dam. The PD addresses this issue at ¶¶ 28-29. This Hearing Examiner finds that the Department properly considered the Salish-Kootenai Dam operations in its analysis.

**Legal Availability**

CONCLUSIONS OF LAW

45. Montana statute requires that an applicant prove 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. 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 proposed point of diversion with the existing legal demands on the supply of water.

(§ 85-2-311(1)(a)(ii), MCA; PD ¶ 7)

46. The Department identified both the water physically available from groundwater and water physically available from surface water in its analysis. (FOF 15, 34)

47. Groundwater is legally available. It is undisputed that MBMG has estimated that there is a net of approximately 190,000 AF/y of unappropriated groundwater water moving through the Deep Aquifer. (FOF 15)

48. Depletions from surface water due to pumping of the MAWC well at the proposed rate and volume of diversion are legally available to MAWC. (FOF 35-39; PD ¶ 31 - 34)

49. Objectors' arguments regarding the completeness of the documentation of the pump/aquifer test and/or the appropriateness of the use of the Neuman-Witherspoon solution to develop aquifer properties, without providing any independent evidence that there is not

groundwater or surface water legally available, are inadequate to overcome applicant's proof by a preponderance of the evidence that both ground and surface water are legally available in the amount it seeks to appropriate. (FOF 33-44) Accordingly, the Hearing Examiner concludes that the MAWC proved by a preponderance of the evidence that water is legally available and concurs in ¶¶ 25-34 of the PD which are incorporated herein as part of this final order.

**Adverse Effect**

FINDINGS OF FACT

50. The record reveals that the Koch and Nickols wells have artesian pressures that are stabilized at approximately -29.3 feet and -37.1 feet respectively (i.e. if the well casings were extended above ground level, water would rise in the casing 29.3 feet and 37.1 feet respectively). The MAWC well has an artesian pressure of approximately -28.8 feet. (Aquifer Test Data; Aquifer Test Report)

51. The aquifer test performed showed that after 72 hours of pumping, the MAWC well exhibited a drawdown of 121.9 feet below the static water level leaving 104.4 feet of water column above the bottom of the well. The Koch and Nickols wells showed a maximum drawdown of 12.2 feet and 1.6 feet which again means that if the casings were extended above ground level, water would still rise in the Koch and Nickols wells 17.1 feet and 35.5 feet. These are actual measured values from the pump/aquifer test. (Aquifer Test Data; Aquifer Test Report)

52. After five years of pumping, drawdown in excess of 1 foot occurs in wells that are 36,000 feet from the Applicant's wells. There are 2,089 water rights and 1,294 water rights that have a known well depth greater than 100 feet that are predicted to experience drawdown greater than one foot. The largest modeled drawdown experienced is 20.5 feet and occurs in a well (Water Right # 76LJ 30071877) that is approximately 635 feet away from the proposed well. The smallest predicted available water column is 11.5 feet after a modeled drawdown of 3.5 feet and occurs in Water Right # 76LJ 72529 00. (PD; Aquifer Test Report)

53. The aquifer test demonstrated that the static water levels in both the Koch and Nickols wells were almost fully recovered after 72 hours of the cessation of pumping of the MAWC well. (Aquifer Test Data)

54. Using the Neuman-Witherspoon solution, the Department modeled drawdown in wells which may be affected by the MAWC well pumping continuously for five years. The largest modeled drawdown was found in the Koch well and was found to be 20.5 feet (still leaving a column of water 8.8 feet above ground level if the casing was extended). Smaller drawdowns are found as radial distance from the MAWC well increases. (Aquifer Test Report)

55. Objectors re-state their objections regarding the incompleteness of the aquifer test data, the application of the Neuman-Witherspoon solution to determine aquifer parameters, and the use of the January 10, 2011 Memo. *Supra, 29-32, 38-39.*

56. Objector Group retained Dr. Willis Weight to create a three-dimensional groundwater model for the Kalispell Valley aquifer systems. Dr. Weight is in the process of developing a numerical groundwater model, but that model was not (and has not been) provided to DNRC and, therefore could not be evaluated or tested. Objector Group's own expert, Dr. Maddock stated that the model was not finished and was a work-in-progress and not "at the stage where it would be published for a peer review article or as a formal report." (Hr'g Tr. 455:10-25). Despite Dr. Weight's model having yet to be completed, Dr. Weight "models drawdown in the deep and shallow aquifers resulting from proposed pumping of the MAWC well. He presents his results in the form of contour maps; however, he does not provide estimates of drawdown in specific wells necessary for evaluation of adverse effect." (Levens, Staff Expert Report)

57. As stated by Mr. Levens:

> Dr. Weight uses the groundwater model to calculate steady-state depletion of 140 gallons per minute (gpm) to the Flathead River, 47.9 gpm from Egan Slough, and 7.2 gpm from Church Slough associated with total pumping of 450 gpm. He also calculates a depletion of 1.6 gpm from Waller Spring for a total depletion to surface water and springs of 196.7 gpm. In contrast, DNRC calculates total depletion of 372.2 gpm to the Flathead River and Flathead Lake. DNRC's analysis is based on the assumption that groundwater pumping eventually is offset by an increase in recharge or decrease in discharge to surface water equal to consumption as stated in the DNRC Depletion Report and supported by testimony by Dr. Maddock. Dr. Weight's analysis does not account for depletion of 175.5 gpm of the total consumption of 372.2 gpm. A full accounting of depletion equal to consumption is necessary to allow evaluation of adverse effect to surface waters as well as to make it possible to evaluate possible errors related to representation of recharge boundaries using general head boundaries in Dr. Weights model.
>
> (Levens, Staff Expert Report)

58. Mr. Levens continues:

> Adverse Effect under 85-2-311, MCA and ARM 36.12.1706 is based on an applicant's plan showing how their proposed use will be regulated during times of shortage so that the rights of prior appropriators will be satisfied. For adverse effect of groundwater applications, the department evaluates how water levels in wells of prior appropriators could be lowered as well as the rate, timing, and location where water flow of hydraulically connected surface waters could be reduced.
>
> There is limited testimony by expert witnesses providing alternative calculations of drawdown in wells or net depletion to surface waters. Mr. Andrews provides an alternative calculation of drawdown in Creston Hatchery wells and states that drawdown created by the MAWC well will likely remove all artesian flow from four USFWS wells and significantly reduce the amount of water the Hatchery could obtain without incurring significant expense to modify their wells. Regarding the applicant's plan, Mr. Andrews testifies that the applicant does not define shortage or what would occur if a 50% reduction in pumping fails to provide relief to prior appropriators. Dr. Weight models drawdown in the shallow and deep aquifers, and calculates depletion using a groundwater flow model; however, drawdown is not reported for individual wells and total depletion equal to consumption is not accounted for. Dr. Weight does not testify regarding whether the rights of prior appropriators will be satisfied under modeled impacts or whether the applicant's plan to control their use during times of shortage is adequate.
>
> (Levens, Staff Expert Report)

59. Both the Department and the Objectors have determined that the effect of pumping the MAWC well will result in drawdown of water in surrounding wells and depletions to surface water. The parties disagree on the consequences of those effects. This Hearing Examiner finds that the Department's determination that there will be no adverse effect to prior existing rights is supported by the record.

60. The Applicant has the ability to regulate the volume of water diverted during times of water shortage so that the water rights of prior appropriators may be satisfied. During times of water shortage, they will initially reduce production by 50%. If the reduction in production is not enough, the Applicant has the ability to cease diversion altogether until senior water users are satisfied. (PD ¶ 35)

## **Adverse Effect**

CONCLUSIONS OF LAW

61. Montana statute requires that an applicant prove 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. 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 (§ 85-2-311(1)(b), MCA)

62. Montana statute makes clear that "priority of appropriation does not include the right to prevent changes by later appropriators in the condition of water occurrence, such as the increase or decrease of streamflow or the lowering of a water table, artesian pressure, or water level if the prior appropriator can reasonable exercise [their] water right under the changed conditions." (§ 85-2-401(1), MCA). This provision embodies the idea that appropriators have a responsibility to construct an adequate means of diversion that reasonably penetrates the aquifer. As was stated in *In re Green Meadow Pet. For Controlled Groundwater Area No. 41I-30022395*, DNRC Proposal for Decision (2007) "[t]o hold that an appropriator is entitled to maintain wells that penetrate only the upper portion of an aquifer against subsequent appropriators, would be to allow a single appropriator or a limited number of appropriators to control an entire aquifer simply to make their own means of diversion easier."

63. The Hearing Examiner concludes that there will be no adverse effect to existing water users due to the proposed appropriation. There are no water rights which have wells with known depths completed in the Deep Aquifer which will experience drawdown below the bottom of their perforations due to the Applicant's proposed pumping, and water is both physically and legally available in the Flathead River and Flathead Lake in the amount which will be depleted. (FOF 50-60; PD ¶ 35-39)

64. Objectors' arguments regarding the completeness of the documentation of the pump/aquifer test and/or the appropriateness of the use of the Neuman-Witherspoon solution to develop aquifer properties and the January 10, 2011 Memo, without providing any independent evidence that there would be adverse effect on existing water rights, falls short of Objectors' burden to show that the proposal to grant the permit was improperly issued.

**Adequate Means of Diversion**

FINDINGS OF FACT

65. Objectors did not introduce any testimony or exhibits at the hearing to contradict the

PD's finding that the proposed means of diversion, construction, or operation were adequate for the proposed use by MAWC.

66. The Applicant proposes to pump 1 CFS up to 710.53 AF per year from a well located in the SENWSE Section 20, Township 28N, Range 20W, Flathead County. The well (MAWC #1) was drilled by O'Keefe Drilling, a licensed well driller in the State of Montana (Lic. No. WWD-126). MAWC #1 is completed to a depth of 222 feet and has an inner casing diameter of 10 inches. The well is a flowing artesian well with a shut-in pressure of 12.5 pounds per square inch (psi) or -28.8 feet below ground surface. The well is completed in a confined aquifer referred to by MBMG as the Deep Aquifer.

67. A Goulds model 7TLC submersible pump will be used to pump water from the well. The well pump will be controlled by a variable frequency drive (VFD) which will allow the pump to maintain constant system pressure with various plant operations occurring. The system pressure will be set at 45 psi and the pump will ramp up/down to maintain this pressure. Water is conveyed from the wellhead via a 6" pipe welded to the side of the well casing. Water to be bottled is conveyed from the well to a series of paper filters and a ultra-violet disinfection system (UV Pro50). After filtration/disinfection, water is conveyed to the Monobloc model RFC 18-18-6 rotary rinser-filler-capper machines. These machines are capable of rinsing and filling 20-ounce water bottles at a rate of 7,000 per hour. Ultimately, Montana Artesian Water Company intends to use up to 20 of these machines to produce 140,000 water bottles per hour, 24 hours a day, 365 days a year (1.2 Billion water bottles; 588.08 AF bottled per year). Additionally, the rinser-filler-capper machine will use 224.25 gallons of rinse water per 1,093.75 gallons of water bottled, for a total annual use of 120.57 AF rinse water at full build out. Facility water (wash water, employee use) in the water bottling plant will be conveyed via a 1" pipe that tees off of the 6" supply line. (PD ¶¶ 49-51)

**Adequate Means of Diversion**

CONCLUSIONS OF LAW

68. Montana statute requires that an applicant prove by a preponderance of the evidence that "the proposed means of diversion, construction, and operation of the appropriation works are adequate." (§ 85-2-311(1)(c), MCA)

69. 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.

70. Objectors did not present any evidence regarding the adequacy of the Applicant's means of diversion, construction, and operation of the appropriation works. Accordingly, the Hearing Examiner concludes that the MAWC proved by a preponderance of the evidence that the proposed means of diversion, construction, and operation of the appropriation works are adequate for the reasons set forth in the PD and concurs in ¶¶ 49-54 of the PD which are incorporated herein as part of this final order.

**Beneficial Use**

FINDINGS OF FACT

71. The Applicant is proposing to divert 1 CFS flow up to 710.53 AF per year for year-round commercial and geothermal use associated with a water bottling plant. The commercial use is further broken down as shown below:

| | |
|---|---|
| Bottled water: | 588.08 AF per year |
| Bottle rinsing: | 120.57 AF per year |
| Facilities wash water: | 1.12 AF per year |
| On-site employee use: | 0.76 AF per year |

72. Annual volume of water bottled is based on the facility's maximum planned production of 140,000 20-ounce water bottles per hour (20 machines producing 7,000 bottles per hour based on manufacturer's specifications). Under full build-out the Applicant intends to bottle water 24 hours a day, 365 days per year, totaling 588.08 AF of water bottled on an annual basis. The annual bottle rinsing requirement was calculated based on the maximum annual water bottle production and manufacturer's specifications for rinsing requirements of the bottling machines (224.25 gallons of rinse water per 1,093.75 gallons bottled). (PD ¶ 56)

73. Per DNRC Form 615, a total of 15 gallons per employee per shift was calculated for employee use. At full build-out, it is anticipated that there will be three daily shifts of 15 employees each for a daily use of 675 gallons and annual use of 0.76 AF. (PD ¶ 57)

74. Facilities wash water use is estimated to be 1000 gallons per day (1.12 AF per year) for washing and rinsing equipment on-site. (PD ¶ 58)

75. The water bottling machines will require 440 GPM for rinsing and bottling purposes at the maximum anticipated production of 140,000 water bottles per hour. The Applicant is requesting 10 GPM to sufficiently provide the on-site employee uses and facility wash water. The total flow rate requested is 1 CFS (450 GPM). (PD ¶ 59)

76. The proposed geothermal use will be temporary and the volume appropriated for geothermal use will count against the volume bottled; the maximum combined appropriation of these two uses will be 588.08 AF per annum. Upon full buildout, the Applicant plans to bottle the entire volume of 588.08 AF, however as the water bottling plant develops, up to 12.28 AF per annum will be used for the geothermal purpose. The total combined flow rate of the commercial and geothermal uses will be 1CFS; during buildout the water delivery system will be managed to not exceed this flow rate when satisfying all uses. The Applicant estimates that the geothermal system can be utilized until the bottling plant reaches a production rate of 120,000 water bottles per hour, at which point the geothermal use will be replaced with a different heat source in favor of maximizing water bottle production. (PD ¶ 60)

77. Objectors argue that MAWC cannot beneficially use the full amount of their requested appropriation because they do not have authorization, such as a discharge permit from DEQ, to operate at their full buildout capacity. MAWC's evidence in this case consists of a detailed plan of development that accounts for all of the water requested. MAWC obtained a DEQ discharge permit for 100 gallons per minute to serve its immediate use. MAWC's plan contemplates gradual development of the project over 20 years. There was no evidence that MAWC cannot obtain a discharge permit for the remaining volume as the project develops over time to full buildout. This Hearing Examiner finds that Applicant's proposed use is a beneficial use and that the requested flow rate of 1 CFS and requested annual volume of 710.53 AF are necessary to sustain the immediate and reasonably contemplated beneficial uses. (Hr'g Tr. 18:7, 66:21, 67:4, 167:16, 202:17)

78. This Hearing Examiner finds that Applicant's proposed use is a beneficial use.

**Beneficial Use**

CONCLUSIONS OF LAW

79. Montana statute requires that an applicant prove by a preponderance of the evidence that "the proposed use of water is a beneficial use." (§ 85-2-311(1)(d), MCA). It is a fundamental premise of Montana water law that beneficial use is the basis, measure, and limit of the use. Accordingly, the amount of water under a permit is limited to the amount of water necessary to sustain the beneficial use. This limitation reflects the prior appropriation principles of bona fide intent and anti-speculation. *McDonald v. State*, 220 Mont. 519, 532, 722 P.2d 598, 606 (1986)( "[T]he amount actually needed for beneficial use within the appropriation will be the basis, measure, and the limit of all water rights in Montana . . ."); *Allen v. Petrick*, 69 Mont. 373, 377 384 P. 451, 453 (One should not be permitted to play the dog in the manger with water he does not or cannot use for a beneficial purpose); *Toohey v. Campbell*, 24 Mont. 13, 60 P. 396 (1900)("The policy of the law is to prevent a person from acquiring exclusive control of a stream, or any part thereof, not for present and actual beneficial use, but for mere future speculative profit or advantage, without regard to existing or contemplated beneficial uses. He is restricted in the amount that he can appropriate to the quantity needed for such beneficial purposes.")

80. However, the concept of beneficial use is flexible enough to allow for the amount of water necessary for immediate needs and reasonably contemplated prospective needs. *Toohey*, 24 Mont. at __, 60 P. at 397; *Wheat v. Cameron*, 64 Mont. 494, 210 P. 761, 763-65(1922)(discussing factors considered to evaluate reasonable diligence and actual use); *Bailey v. Tintinger*, 45 Mont. 154, 122 P. 575, 578, 584 (1912). Section 85-2-312(2), MCA, expressly recognizes the Department's authority to grant a permit for prospective uses "on projects designed for gradual development and gradually increase use of water . . ."

81. Whether a project satisfies the requirement of a non-speculative beneficial use is a discretionary determination arrived at based upon the evidence. In this case, the preponderance of the evidence standard required MAWC to prove that it was more likely than not that the requested flow rate of 1 CFS and requested annual volume of 710.53 AF are necessary in to sustain the immediate and reasonably contemplated beneficial uses. In the absence of a

detailed development and operation plan, the Objector's argument regarding MAWC's failure to request or obtain a discharge permit for the full amount of proposed build out may call into question whether the full volume and flow rate is needed. However, nothing in the MWUA requires that an applicant obtain a water discharge permit prior to obtaining a beneficial water use permit. Considering MAWC's evidence and detailed development plan for gradual development of the project over a 20-year period, obtaining a discharge permit for approximately ¼ of its long term water needs does not undermine the evidence and proof that 1 CFS and 710.53 AF is required for full buildout of the project This hearing examiner concludes that MAWC proved by a preponderance of the evidence that the requested flow rate of 1 CFS and requested annual volume of 710.53 AF are necessary to sustain MAWC's proposed beneficial use and concurs in ¶¶ 55-64 of the PD which are incorporated herein as part of this final order. (PD ¶ 61)

82. The Hearing Examiner notes that the Application proposes full buildout of the project within 20 years of issuance of a permit. Because gradual development of the project over 20 years is a component of the evidence considered, the Hearing Examiner concludes it is appropriate to require a project completion notice within 20 years of issuance of the permit. If MAWC is unable to obtain additional discharge permits, or the project does not develop to full buildout within 20 years, the permit will only be perfected for that amount of water actually put to beneficial use, or MAWC will be required to demonstrate it has proceeded with reasonable diligence in development of the project to obtain additional time to complete the project. § 85-2-312, MCA.

83. The Hearing Examiner has previously addressed the issue of beneficial use inside or outside the State of Montana and determined that the proposed appropriations' "beneficial use accrues on Montana." *Supra @ Preliminary Matters*

**Possessory Interest**

FINDINGS OF FACT

84. The record contains a signed lease agreement between "Weaver Entities, Inc." and "Montana Artesian Water Company" which allows MAWC to occupy the premises owned by Weaver Entities, Inc. The lease is signed by Lew Weaver as President of Weaver Entities, Inc.

and by Larel and Lew Weaver as Directors of Montana Artesian Water Company. (File, General Correspondence)

85. Applicant provided the Department with a printout from the Montana Secretary of State website that identifies Larel Weaver as President of MAWC and Lew Weaver as Vice President of MAWC, and both of them as Directors of MAWC. (File, Deficiency Response)

86. Application for Beneficial Water Use Permit No. 76LJ-30102978 by Montana Artesian Water Company was signed on June 15, 2015 by both Lew and Larel Weaver. (File, Application)

87. Objectors attempt to argue that "there is no other physical documentation, such as a power of attorney or operating agreement, was provided showing they had authority complete [sic] the application on behalf of Montana Artesian Water Company." (Objector Group Closing Brief)

**Possessory Interest**

CONCLUSIONS OF LAW

88. Montana statute requires that an applicant prove by a preponderance of the evidence that "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." (§ 85-2-311(1)(e), MCA)

89. The record is clear that as President, Vice President, and co-Directors of MAWC both Lew and Larel Weaver had authority to sign the Application, and the lease agreement makes clear that Weaver Entities, Inc. has granted authority to MAWC to occupy the premises of the water bottling plant. Objectors arguments to the contrary are simply wrong. Accordingly, this hearing examiner concludes that MAWC proved by a preponderance of the evidence that the it has possessory interest in the place of use and concurs in ¶¶ 65-68 of the PD which are incorporated herein as part of this final order.

**Water Quality**

FINDINGS OF FACT

90. The PD did not address any water quality criteria as those criteria were not implicated

until after objections were filed to the Application. (§ 85-2-311(2), MCA)

91. Objector Group raised a water quality issue but did not present any testimony or final expert report entered as a hearing exhibit which analyzed or substantiated any water quality issues relating to the Application. (Applicant, Closing Brief)

92. Included in Objector Group's objections, is an objection[3] that includes four separate and distinct water quality objections: 1) surface discharge from the washing facility may affect water quality of surface water; 2) underground discharge of wastewater into a septic system may adversely affect water quality of groundwater; 3) surface discharge of geothermal water may adversely affect water quality and aquatic habitat in the Flathead River and Lake; and 4) aquifer drawdown from pumping was observed to result in turbidity in groundwater affecting water quality of senior water users. (i.e. *Waller Objection to Application*). The objection does not allege that surface and underground water discharges from the project could adversely affect the water quality of *a prior appropriator*. Likewise, while the objection asserts that drawdown results in turbidity affecting water quality of senior water users, it stops short of stating turbidity will *adversely* affect the water quality of senior water users.

93. With regard to surface water discharges from the project, MAWC obtained a water discharge permit from DEQ for partial development of the project on September 5, 2017. (Exhibit A14). The discharge permit is designed to protect surface water from water quality degradation. Parameters to be monitored include flow, dissolved oxygen, 5-day biochemical oxygen demand, total suspended solids, pH, temperature, and oil/grease. The evidence further establishes that the temperature of discharges will be similar to naturally occurring surface water temperatures. (Exhibit A12 @ §5; A14). While the discharge permit only covers a portion of the water discharge that will occur at full buildout, it is sufficient for MAWC's immediate needs. MAWC's plan contemplates securing additional discharge permits as the project develops. (Hr'g Tr. 615-620). This Hearing Examiner finds that MAWC's plan for discharge of water from the facility to surface water complies with legally required water quality standards.

94. As for groundwater discharges, MAWC's evidence established that it obtained a septic system permit from the Flathead City-County Health Department on December 10, 2014. This

3 Water quality objections filed by *Waller, et. al.,* were deemed valid for purposes of § 85-2-311(1)(f), MCA. While individually filed, each water quality objection uses identical language. Accordingly, those objections are referred to in the singular for purposes of this decision.

permit was issued pursuant to and in compliance with local and state regulations related to underground sewage treatment. (Exhibit A66). This Hearing Examiner finds that MAWC's septic system plan for underground waste water complies with legally required water quality standards.

95. Finally, MAWC's evidence establishes that groundwater quality will not be affected by pumping due to the nature of upward pressure and chemical composition in the source aquifer. (Exhibit A12 @ §5). MAWC's proposed project includes a plan to respond to adverse effect experienced by other water users as a result of aquifer drawdown through the reduction or cessation of diversions until prior appropriators are satisfied. Because the water quality objection is premised upon aquifer drawdown, this Hearing Examiner finds that the plan is adequate for purposes of responding to a water quality call.

96. Other than the allegations contained in the objection, the Water Quality Objectors produced no evidence to clarify or support the water quality objection.

**Water Quality**

CONCLUSIONS OF LAW (WATER QUALITY CRITERIA § 85-2-311(1)(f), MCA)

97. Montana statute requires that an applicant prove by a preponderance of the evidence that "the water quality of a prior appropriator will not be adversely affected" only if a valid objection is filed. (§ 85-2-311(1)(f), MCA; § 85-2-311(2), MCA)

98. The limited nature of the allegations contained in the water quality objection are noteworthy in this case. The aspects of the objection related to surface and groundwater include limited information and do not allege that the water quality of *a prior appropriator* will be adversely affected. Similarly, the objection related to turbidity does not describe the extent of the turbidity and does not allege water quality of a prior appropriator will be *adversely* affected by the turbidity. No information was provided regarding which prior appropriators were allegedly impacted. (FOF 91).

99. While the Water Quality Objectors were not required to prove the water quality of a prior appropriator would be adversely affected, the applicant's burden with regard to water quality is limited in scope to those water quality issues raised by the objection. Absent production of additional evidence by the Water Quality Objectors, whether the record establishes by a

preponderance of the evidence that the water quality of prior appropriators will not be adversely affected must be weighed against the face of the objection and veracity of allegations contained therein. *Matter of Beneficial Use Permit 76D 3009957 by Kaechele*, Proposal for Decision, Pg. 15 (2005)(the weight of evidence supporting a water quality objection is properly evaluated in determining whether an applicant meets its burden to prove the water quality of prior appropriators will not be adversely affected."); *Matter of Beneficial Use Permit 76M 10858000 by Staninger*, Proposal for Decision, Pg. 14 (2003)(If the validity of an objection is not contested in a timely manner, evidence that the water quality of a prior appropriator must be sufficient to overcome the evidence supporting the objection.)

100. A preponderance of the evidence establishes that MAWC has or will obtain the necessary water quality and wastewater treatment permits for its project satisfying the legal water quality requirement for surface and underground water discharge. A preponderance of the evidence establishes that pumping will not cause degradation of water quality in the source aquifer. Regardless, MAWC's plan to reduce or cease diversions adequately addresses the nature of any water quality effects to senior water users caused by pumping as alleged in the Objection. (FOF 90-96; *Matter of Beneficial Use Permit 76D 30009957 by Kaechele*, Proposal for Decision, Pgs 10, 11, and 15). Accordingly, this Hearing Examiner concludes that a preponderance of the evidence establishes that that water quality of prior appropriators will not be adversely affected. § 85-2-311(1)(f), MCA.

## CONCLUSION

The Preliminary Determination to Grant Permit determined that Montana Artesian Water Company proved all of the applicable § 85-2-311, MCA, criteria by a preponderance of the evidence. Therefore, Application for Beneficial Use Water Permit No. 76LJ 30102978 by Montana Artesian Water Company is **GRANTED** as provided for in the Preliminary Determination to Grant Permit issued by the Kalispell Water Resources Office of the Department of Natural Resources and Conservation on January 14, 2016.

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## NOTICE

This *Final Order* is the Department's final decision in this matter. A Final Order may be appealed by a party who has exhausted all administrative remedies before the Department in accordance with the Montana Administrative Procedure Act (Title 2, Chapter 4, Mont. Code Ann.) by filing a petition in the appropriate court within 30 days after service of the order.

If a petition for judicial review is filed, the Department will transmit a copy of the written transcript prepared by the parties and a copy of the Department's audio recording of the oral proceedings to the district court. The audio recording is the official record of the proceeding.

Dated this 26th day of January 2018.

/Original signed by David A. Vogler/
David A. Vogler, Hearing Examiner
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and Conservation
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## CERTIFICATE OF SERVICE

This certifies that a true and correct copy of the FINAL ORDER was served upon all parties listed below on this 26th day of January 2018 by First Class United States mail and by electronic mail as noted below.

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/Original signed by Jamie Price/
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# APPENDIX A

| DUPLICATIVE (X) | DESCRIPTION |
|---|---|
| **OBJECTOR EXHIBITS (CARROLL)** | |
| | Exhibit 1: Objector Dora Carroll – Depth to Deep Alluvium |
| **OBJECTOR EXHIBITS (USFWS)** | |
| **X** | **Exhibit 1:** Folnagy Aquifer Test Report |
| **X** | **Exhibit 2:** DNRC File (PD, application, etc.) |
| **X** | **Exhibit 3:** MAWC Form 633 |
| | **Exhibit 4:** 1999 Creston NFH Hydrogeology Study |
| | **Exhibit 5:** Neuman 1969 Applicability Paper |
| | **Exhibit 6:** Neuman 1969 Derivation Paper |
| | **Exhibit 7:** Neuman 1972 Field Determination Paper |
| | **Exhibit 8:** Pump Test Analysis |
| | **Exhibit 9:** Abstract 76LJ-111158 |
| | **Exhibit 10:** Abstract 76LJ-188242 |
| | **Exhibit 11:** Abstract 76LJ-111157 |
| | **Exhibit 12:** Abstract 76LJ-188241 |
| | **Exhibit 13:** Abstract 76LJ-189873 |
| | **Exhibit 14:** Abstract 76LJ-30007245 |
| **X** | **Exhibit 15:** MAWC Well Log |
| | **Exhibit 16:** Shallow Well Log |
| | **Exhibit 17:** Nearby Well Log |
| | **Exhibit 18:** Potentiometric Surface Map of the Deep Aquifer |
| | **Exhibit 19:** GWIC Well 81530 |
| | **Exhibit 20:** USGS Hydraulic Conductivity Table |
| | **Exhibit 21:** Thickness Map of Alluvium in the Flathead Valley |
| **OBJECTOR EXHIBITS (OBJECTOR GROUP)** | |
| **X** | **Exhibit 1 (1a, 1b, 1c, 1d, 1e, 1f):** Entire DNRC file – Montana Artesian Water Company Permit No. 30102978, correspondence, reports, documents |
| **X** | **Exhibit 2:** DNRC January 2011 memorandum: Legal availability of groundwater in the Flathead Deep Aquifer |
| **X** | **Exhibit 3:** Addendum attached to Objections filed against Montana Artesian Water Company, including maps of the area and aquifer cross sections |
| **X** | **Exhibit 5:** RLK Hydro Aquifer Report, dated 9/30/2010 |
| **X** | **Exhibit 6:** MAWC's Expert Report, dated 2/15/2017 |

# APPENDIX A

| DUPLICATIVE (X) | DESCRIPTION |
|---|---|
| | **Exhibit 7:** Mast Variance Rejection |
| | **Exhibit 10a:** Waller Water Right Abstracts |
| | **Exhibit 10b:** Fullerton, Peterson, Harvey, Koch Water Right Abstract |
| **X** | **Exhibit 13:** Form 611 – Objection Application of John and Amy Waller |
| | **Exhibit 16:** CWC Expert Report |
| | **Exhibit 17a:** Neuman Figure 1: Log of Pumping Well |
| | **Exhibit 17b:** Neuman Figure 2: Regional Hydrogeologic Cross-Section |
| | **Exhibit 17c:** Neuman Figure 3: Local Hydrogeologic Cross-Section |
| | **Exhibit 17d:** Neuman Figure 4: Water levels in Koch and Nickol wells prior to pumping |
| | **Exhibit 17e:** Neuman Figure 5: Extrapolation of drawdown at pumping well into the future |
| | **Exhibit 17f:** Neuman Figure 6: Extrapolation of 1-year drawdowns from pumping to well to other radial distances using a distance-drawdown curved based on Neuman-Witherspoon (1969) solution |
| | **Exhibit 18a:** Meyers Figure 1: Weaver Entities and Surrounding Wells Map |
| | **Exhibit 18b:** Meyers Figure 2: Map from LaFave et al (2004), Figure 23, showing wells in Kalispell surrounding area |
| | **Exhibit 18c:** Meyers Figure 3: Snapshot of Smith (2004) showing depth to deep aquifer contours near the project area |
| | **Exhibit 18d:** Meyers Figure 4: Measured potentiometric surface at selected wells near MAWC well, Flathead River, Egan Slough |
| | **Exhibit 18e:** Meyers Figure 5: Topographic map showing the wells used for the Mast Well Pump Test |
| | **Exhibit 18f:** Meyers Table 1: Specifications for Mast Wells used for pump tests |
| | **Exhibit 18g:** Meyers Figure 6: Raw drawdown and recovery data for observation well 1 |
| | **Exhibit 18h:** Meyers Figure 7: Snapshot of a portion of Figure 33 from Lafave et al (2004) showing a breakdown in groundwater quality for the Kalispell subarea among shallow intermediate, deep, and bedrock aquifers |
| | **Exhibit 18i:** Meyers Figure 8: Relation of iron concentration with well depth for June 2017 data |
| | **Exhibit 18j:** Meyers Figure 9: Relation of nitrate concentration with well depth for June 2017 data |
| | **Exhibit 18k:** Meyers Figure 10: Relation of sodium concentration with well depth for June 2017 data |
| | **Exhibit 18l:** Observed water chemistry value for various parameters at MAWC well, as well as Koch and Nichol wells |
| | **Exhibit 18m:** Meyers Table 3: Results of water chemistry sampling, June 2017 |
| | **Exhibit 18n:** Meyers Attachment 1: Well Level Data, Collected June, 2017. Well Logs for Meyers Table 1 |
| | **Exhibit 18o:** Meyers Attachment 2: June 2017 Water Chemistry Data of Egan Slough, produced by M.E. Lab |

# APPENDIX A

| DUPLICATIVE (X) | DESCRIPTION |
|---|---|
| | **Exhibit 18p:** Meyers Attachment 3: Well logs used for the Mast Well Pumping Test |
| | **Exhibit 19a:** Willis D. Weight, Transient Model Calibration – Series 3, Figure C1: Zoomed in West-East x-sectional view showing the Model Grid near the Mast well. |
| | **Exhibit 19b:** Willis D. Weight, Transient Model Calibration – Series 3, Figure C2: Mast Model drawdown contours at 0.1 ft. intervals |
| | **Exhibit 19c:** Willis D. Weight, Transient Model Calibration – Series 3, Figure C3: Mast Model Drawdown in 0.1 ft. Intervals to show extent E-E from pumping at the Mast well after 60 hours in x-sectional view |
| | **Exhibit 20:** Kalispell Well Log Files |
| | **Exhibit 21a:** Willis D. Weight, Numerical Model Results from MAWC Pumping – Series 2, Figure B1: Steady State Model with no pumping diversion |
| | **Exhibit 21b:** Willis D. Weight, Numerical Model Results from MAWC Pumping – Series 2, Figure B2: Hydraulic Head in the Steady State Model calibrated to MBMG potentiometric map (oblique view) |
| | **Exhibit 21c:** Willis D. Weight, Numerical Model Results from MAWC Pumping – Series 2, Figure B3: MAWC pumping drawdown influence on Egan Slough |
| | **Exhibit 21d:** Willis D. Weight, Numerical Model Results from MAWC Pumping – Series 2, Figure B4: Zoomed in view of groundwater flow vectors near the MAWC site |
| | **Exhibit 21e:** Willis D. Weight, Numerical Model Results from MAWC Pumping – Series 2, Figure A5: Zoomed in view of groundwater flow vectors near the MAWC site (vertical view) |
| | **Exhibit 21f:** Willis D. Weight, Numerical Model Results from MAWC Pumping – Series 2, Figure B6: West-East cross-sectional that show the Model Grid near the MAWC well |
| | **Exhibit 21g:** Willis D. Weight, Numerical Model Results from MAWC Pumping – Series 2, Figure B7: Flathead River Arcs used in evaluation of stream depletions due to pumping |
| | **Exhibit 21h:** Willis D. Weight, Numerical Model Results from MAWC Pumping – Series 2, Figure B8: Egan Slough and Church Slough polygons used in Long-Term Depletion Analysis |
| | **Exhibit 21i:** Willis D. Weight, Numerical Model Results from MAWC Pumping – Series 2, Figure B9: Zone of Influence due to perpetual pumping impact within Layer 4 |
| | **Exhibit 21j:** Willis D. Weight, Numerical Model Results from MAWC Pumping – Series 2, Figure B10: Zone of Influence due to perpetual pumping impact within Layer 1 |
| | **Exhibit 21k:** Willis D. Weight, Numerical Model Results from MAWC Pumping – Series 2, Figure B11: Drawdown in 0.1 ft intervals to show maximum extent W-E from pumping at the MAWC well in x-sectional view. Bottom of model is at elevation approximately 2,000 feet. |
| | **Exhibit 21l:** Willis D. Weight, Numerical Model Results from MAWC Pumping – Series 2, Figure B12: Drawdown in 0.1 ft. intervals to show maximum extent S-N from pumping at the MAWC well in x-section view |
| | **Exhibit 22a:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 1: Intro & Summary of 3-D Model of Flathead Valley |
| | **Exhibit 22b:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 2: Intro & Summary of 3-D Model of Flathead Valley (Cont.) |
| | **Exhibit 22c:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 3: MBMG Unpublished Conceptual Model |

# APPENDIX A

| DUPLICATIVE (X) | DESCRIPTION |
|---|---|
| | **Exhibit 22d:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 4: Cross sections locations map |
| | **Exhibit 22e:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 5: West-East Cross-Section by MBMG Provided to AWC |
| | **Exhibit 22f:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 6: West-East Cross-Section by MBMG Provided to AWC with additional analysis |
| | **Exhibit 22g:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 7: Cross-Section provided to AWC by MBMG with additional analysis |
| | **Exhibit 22h:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 8: AWC Figures provided by MBMG for their EW Report |
| | **Exhibit 22i:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 9: Two Geologic Models for Flathead Valley by Weight |
| | **Exhibit 22j:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 10: DEM of Flathead Valley (10 m resolution grid). GWIC numbers shown |
| | **Exhibit 22k:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 11: Cross-sections constructed |
| | **Exhibit 22l:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 12: MLM – Cross-sections |
| | **Exhibit 22m:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 13: SLM – Cross-sections |
| | **Exhibit 22n:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 14: Zoom into MAWC well at GWIC M#281779, professional analysis |
| | **Exhibit 22o:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 15: SLM – Cross-sections, zoomed in on immediate area |
| | **Exhibit 22p:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 16: MLM – Cross-sections zoomed in on immediate area |
| | **Exhibit 22q:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 17: MAWC Well compared to Mast well |
| | **Exhibit 22r:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 18: SLM – Cross sections zoomed in on Koch and Nickol wells |
| | **Exhibit 22s:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 19: MLM – Cross sections zoomed in on Koch and Nickol wells |
| | **Exhibit 22t:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 20: Cross-section Trends analysis |
| | **Exhibit 22u:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 21 |
| | **Exhibit 22v:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 22 |
| | **Exhibit 22w:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 23 |
| | **Exhibit 22x:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 24 |
| | **Exhibit 22y:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 25: Solids Models Analysis |
| | **Exhibit 22z:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 26: Confining Unit Map |
| | **Exhibit 22aa:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 27: 3-D view of Confining Units |

# APPENDIX A

| DUPLICATIVE (X) | DESCRIPTION |
|---|---|
| | **Exhibit 22bb:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 28: Numerical Model |
| | **Exhibit 22cc:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 29 |
| | **Exhibit 22dd:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 30 |
| | **Exhibit 22ee:** Willis D. Weight, Geologic Models and Layer Relationships – Series 1, Slide 31 |
| | **Exhibit 23a:** Siemens Document 1: 76LJ 23259-00 Claim File Documents (6 pages) |
| | **Exhibit 23b:** Siemens Document 2: 76LJ 34241 Claim File (59 pages) |
| | **Exhibit 23c:** Siemens Document 3: 76LJ 30064152 Provisional Permit File (141 pages) |
| | **Exhibit 23e:** Siemens Figure 1: Aerial Map, April 2015 |
| | **Exhibit 23f:** Siemens Figure 2: Aerial Map, June 2004 |
| | **Exhibit 23g:** Siemens Figure 3: Aerial Google Map, April 2015 |
| | **Exhibit 23h:** Siemens Figure 4: Close Up Map, April 2015 |
| **X** | **Exhibit 23i:** Mikel Siemens – CWC Expert Testimony, dated July 7, 2017 |
| | **Exhibit 23j:** Siemens Document 4: District Court Case, Wagner 1938 |
| | **Exhibit 23k:** Siemens Figure 4: Drawdown Surface Layer Figure |
| | **Exhibit 23l:** Siemens Table 2: Egan Slough, Water Rights Table |
| | **Exhibit 23m:** Siemens Figure 5: Egan Slough Figure |
| | **Exhibit 23n:** Siemens Figure 6: Waller Spring Figure |
| | **Exhibit 24:** Maddock Figure 1: Streamflow capture from gaining and lowing streams |
| | **Exhibit 25:** Maddock Figure 2: Capture of evapotranspiration losses |
| | **Exhibit 26:** Maddock Figure 3: Capture from external boundaries |
| **X** | **Exhibit 27:** Objectors Supplementary Discovery Responses, 6/15/2017 |
| | **Exhibit 28:** Neuman CV |
| | **Exhibit 29:** Meyers CV |
| | **Exhibit 30:** Siemens CV |
| | **Exhibit 31:** Weight CV |
| | **Exhibit 32:** Maddock CV |
| **X** | **Exhibit 33:** Myers Expert Report |
| **X** | **Exhibit 34:** Weight Expert Report |
| **X** | **Exhibit 35:** Neuman Expert Report |
| **X** | **Exhibit 36:** Maddock Expert Report |
| | **Exhibit 38:** MAWC's Responses to Objectors' Discovery |
| | **Exhibit 39:** MAWC's Supplemental Responses to Objectors' Discovery Requests |

# APPENDIX A

| DUPLICATIVE (X) | DESCRIPTION |
|---|---|
| | **Exhibit 43:** Meyer exhibit Mast Form 633 |
| **APPLICANT EXHIBITS** | |
| **X** | **Exhibit A1:** Preliminary Determination to Grant Permit by Kathy Olsen, dated 01/14/2016 |
| **X** | **Exhibit A2:** Depletion Report by Attila Folnagy, dated 08/11/2015 |
| **X** | **Exhibit A3:** Aquifer Test Report by Attila Folnagy, dated 08/10/2015 |
| **X** | **Exhibit A4:** James Heffner and Russell Levens, Montana Department of Natural Resources and Conservation memo re legal availability of groundwater in the Flathead Deep Aquifer, dated 01/10/2011 |
| **X** | **Exhibit A5:** Application for Beneficial Water Use Permit prepared by Applied Water Consulting with attachments, dated 06/22/2015 |
| **X** | **Exhibit A6:** Deficiency letter by Nathaniel Ward, dated 08/28/2015 |
| **X** | **Exhibit A7:** Response to deficiency letter prepared by Brad Bennett with attachments, dated 09/24/2015 |
| **X** | **Exhibit A8:** Amendment to Application, dated 09/25/2015 |
| **X** | **Exhibit A9:** Correct and complete letter by Nathaniel Ward, dated 12/30/2015 |
| **X** | **Exhibit A10:** Groundwater Permit Application Technical Report by Nathaniel Ward |
| **X** | **Exhibit A11:** Environmental Assessment by Nathaniel Ward, dated 01/07/2016 |
| **X** | **Exhibit A12:** Brad Bennet Pre-Filed Expert Testimony with exhibits, dated 07/07/2017 |
| **X** | **Exhibit A13:** Roger Noble Pre-Filed Expert Testimony with exhibits, dated 07/07/2017 |
| **X** | **Exhibit A14:** Montana Department of Environmental Quality Permit, dated 09/05/2017 |
| **X** | **Exhibit A15:** Montana Department of Environmental Quality Environmental Assessment, dated 09/05/2017 |
| **X** | **Exhibit A16:** Aquifer Test field notes by Brad Bennett |
| **X** | **Exhibit A17:** Weaver Entities Aquifer Test Data (Form 633) |
| **X** | **Exhibit A18:** Dora Carroll Objection to Application and Amended Objection to Application |
| **X** | **Exhibit A19:** Merle J. Baldwin Objection to Application |
| **X** | **Exhibit A20:** Alan and Deirdre Coit Objection to Application |
| **X** | **Exhibit A21:** Willis Weight, Ph.D., PE Pre-Filed Expert Testimony, dated 07/07/2017 |
| **X** | **Exhibit A22:** Willis Weight, Ph.D., PE, Expert Report |
| **X** | **Exhibit A23:** Mikel Siemens Pre-Filed Expert Testimony, dated 07/07/2017 |
| **X** | **Exhibit A24:** Mikel Siemens Expert Report, dated 07/07/2017 |
| **X** | **Exhibit A25:** Mikel Siemens Expert Testimony Report, dated 07/07/2017 |
| **X** | **Exhibit A26:** Shlomo Neuman Pre-Filed Expert Testimony, dated 07/06/2017 |
| | **Exhibit A27:** Shlomo Neuman deposition without exhibits, dated 08/08/2017 |
| **X** | **Exhibit A28:** Shlomo Neuman Expert Report, dated 03/01/2017 |

# APPENDIX A

| DUPLICATIVE (X) | DESCRIPTION |
|---|---|
| X | **Exhibit A29:** Tom Myers Pre-Filed Expert Testimony |
| X | **Exhibit A30:** Tom Myers Expert Report, dated 07/06/2017 |
| X | **Exhibit A31:** Thomas Maddock Pre-Filed Expert Testimony, dated 07/06/2017 |
| X | **Exhibit A32:** Thomas Maddock Expert Report, dated 03/03/2017 |
| X | **Exhibit A33:** U.S. Fish and Wildlife Service Objection to Application |
| X | **Exhibit A34:** Jaron Andrews Pre-Filed Expert Testimony, dated 07/06/2017 |
| X | **Exhibit A35:** Flathead Lakers, Inc. Objection to Application |
| X | **Exhibit A36:** David Eychner Objection to Application |
| X | **Exhibit A37:** Richard and Glenda Billman Objection to Application |
| X | **Exhibit A38:** Donald Hauth Objection to Application |
| | **Exhibit A39:** A. Campbell Stringer Curriculum Vitae |
| | **Exhibit A40:** Review of Weight Expert Report on Montana Artesian Water Company (MAWC) Application for Beneficial Water Use Permit 76LJ-30102978 prepared by A. Campbell Stringer, P.G., dated 09/05/2017 |
| | **Exhibit A41:** Supplemental Report by A. Campbell Stringer, dated 09/14/2017 |
| | **Exhibit A42:** Egan Slough photos |
| | **Exhibit A43:** Flathead River Slough Water Rights |
| | **Exhibit A44:** Fox Hill Application No. 76LJ 30109249 Criteria Addendum (pages 1-42) |
| X | **Exhibit A45:** Russell Levens Staff Expert Report, dated 08/11/2017 |
| | **Exhibit A46:** Russell Levens deposition with exhibits, dated 08/31/2017 |
| | **Exhibit A47:** Hydrogeology Field Manual (2nd ed.) pages 94-117 |
| | **Exhibit A48:** Email string between Brad Bennett, Attila J. Folnagy (DNRC), and Nathaniel T. Ward (DNRC) regarding Great Bear Application Excel Form 633 request and MAWC, dated 08/05/2015 |
| X | **Exhibit A49:** Email string between Brad Bennett and Nathaniel T. Ward (DNRC) regarding MAWC amendment, dated 09/24/2015 |
| X | **Exhibit A50:** Email string between Nathaniel T. Ward (DNRC) and Brad Bennett regarding application and geothermal specs with specs, dated 11/17/2015 |
| X | **Exhibit A51:** Email string between Brad Bennett and Nathaniel T. Ward (DNRC) regarding lease agreement MAWC & Weaver Entities and preliminary determination |
| | **Exhibit A52:** Aqtesolv plots for Nichols and Koch wells |
| | **Exhibit A53:** Barometric Check Aquifer Test Data Charts, dated March 2015 |
| | **Exhibit A54:** Barometric Effect – Koch Well Aquifer Test Data Chart, dated March 2015 |
| | **Exhibit A55:** Barometric Effect – Nickol Well Aquifer Test Data Chart, dated March 2015 |
| | **Exhibit A56:** Applied Water Consulting Well Log, Project No. 693-14, for Weaver Entities well |
| | **Exhibit A57:** Brad Bennett's field notes |

# APPENDIX A

| DUPLICATIVE (X) | DESCRIPTION |
|---|---|
| | **Exhibit A58:** Brad Bennett's log notes, dated December 2014 |
| | **Exhibit A59:** Brad Bennett's Pre-Application Meeting notes, dated 07/29/2014 |
| | **Exhibit A60:** Email from Emily Gillespie (DEQ) to Roger Noble and Brad Bennett regarding well location with map of location approved by DEQ, dated 12/03/2014 |
| | **Exhibit A61:** R. Halloran field activity log |
| | **Exhibit A62:** Observation Well Projected Drawdown |
| | **Exhibit 63:** MAWC Production Well Projection of Pumping Water Level |
| | **Exhibit 64:** Denver Fraser (DEQ) approval letter to Jeff Larsen (Larsen Engineering & Surveying) regarding plans and specifications for MAWC pending permit, dated 11/30/2016 |
| | **Exhibit 65:** Emily Gillespie (DEQ) well conditional approval letter to Brad Bennett EQ#15-1097, dated 08/13/2014 |
| | **Exhibit 66:** Flathead City-County Health Department Septic System Permit No. 15-6916-N, dated 12/10/2014 |
| | **Exhibit A67:** Type-Curve vs. Distance Drawdown for Koch well |
| | **Exhibit A68:** Myron Mast Aquifer Test Data – Form 633 |
| | **Exhibit A69:** Flathead Valley Deep Aquifer: Geologic Setting and Hydrogeologic Implications by John Wheaton, James Rose, Andy Bobst, & Ali Gebril |
| | **Exhibit A70:** 3-Dimensional Geologic Model of the Flathead River Valley at Kalispell Montana by James Rose and John Wheaton, dated 04/06/2016 |
| | **Exhibit A71:** Deep Aquifer Hydrogeology The Flathead (Kalispell) Valley by John Wheaton, James Rose, Ali Gebril, Elizabeth Meredith, and Andy Bobst. Sponsored by The Flathead River Commission, dated 04/06/2016 |
| | **Exhibit A72:** 3-Dimensional Geologic Model of the Flathead River Valley at Kalispell Montana by James Rose, dated 04/06/2016 |
| | **Exhibit A73:** Hydrogeology of the Deep Confined Aquifer by John Wheaton, James Rose, Ali Gebril, Elizabeth Meredith, and Andy Bobst. Science on Tap, dated 04/06/2016 |
| | **Exhibit A74:** Deep Aquifer Hydrogeology The Flathead (Kalispell) Valley by John Wheaton, dated 10/14/2016 |
| | **Exhibit A75:** Montana Well Log Report for Myron Mast |
| | **Exhibit A76:** Montana Well Log Report for Paul Koch |
| | **Exhibit A77:** Montana Well Log Report for Weaver Entities (GWIC Id 281779) |
| | **Exhibit A78:** Montana Well Log Report for Consulting Investing Management, Inc. (GWIC Id 282629) |
| | **Exhibit A81:** Figure 5- Hydrogeologic Cross Section B-B with Montana Well Log Reports for Mike Roth (GWIC ID 260131), Gregory Eller (GWIC ID 288971), and Bob Fink (GWIC ID 224670) |
| **X** | **Exhibit A82:** Summary of Aquifer Characteristics of the Flathead Valley Deep Confined Alluvial Aquifer for MBMG by RLK Hydro, Inc. |
| | **Exhibit A87:** Flathead Lake Groundwater Resources – Lafave Bureau of Mines |
| | **Exhibit A88:** NW69 – Weight Model Match |
| | **Exhibit A89:** Willis Weight Diagrams with notations by Brad Bennett |

# APPENDIX A

## The following Exhibits were offered, but Not Admitted.

| OBJECTOR EXHIBITS (OBJECTOR GROUP) |
|---|
| **1g:** DNRC Environmental Assessment |
| **Exhibit 4:** Weaver Business Emails regarding MAWC |
| **Exhibit 8:** Weaver Entities, Inc. Septic System Permit Application to Montana Department of Environmental Quality and Decision |
| **Exhibit 9:** Montana Department of Environmental Quality Environmental Assessment for Montana Artesian Water Company Permit Application |
| **Exhibit 11:** Daily Interlake Opinion Article by Lew and Larel Weaver |
| **Exhibit 12:** Flathead Beacon Clarifying Water Bottling Plant Operations |
| **Exhibit 14:** Montana DEQ Correspondence |
| **Exhibit 15:** MAWC DEQ Discharge Permit Application |
| **Exhibit 23d:** Siemens Table 1: Recovery Phase and Drawdown Phase of Aquifer Tests data (spreadsheet) |
| **Exhibit 37:** Documents Related to Montana DEQ Permitting Process |
| **Exhibit 40:** Sci Gaia Report on Potential Impacts of MAWC Development |
| **Exhibit 41:** Sci Gaia Response to Environmental Assessment |
| **Exhibit 42:** Sci Gaia Report on MAWC Business Evaluation |
| **APPLICANT EXHIBITS** |
| **Exhibit A79:** Email string between Lew Weaver and Mountain Valley Spring regarding opening and operating another plant in Montana |
| **Exhibit A80:** Email string between Lew Weaver and Core Water regarding Excellent Water Source |
| **Exhibit A83:** DEQ Letter to Weaver |
| **Exhibit A84:** Bennett letter to Reid |
| **Exhibit A85:** Activity Report by Reid |
| **Exhibit A86:** Bennett to Kent Email |