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

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APPLICATION FOR BENEFICIAL WATER USE PERMIT NO. 41P 30072942	**)** **)** **)**	**PRELIMINARY DETERMINATION TO GRANT PERMIT**

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On May 15, 2015, Michael and Linda O'Brien (applicants) submitted Application for Beneficial Water Use Permit No. 41P 30072942 (application) to the Havre Water Resources Regional Office of the Department of Natural Resources and Conservation (Department or DNRC) for a new groundwater appropriation with a maximum flow rate of 300 gallons per minute (GPM) up to 3.8 acre feet (AF) of volume for irrigation and domestic use. The application was determined to be correct and complete as of September 4, 2015. An Environmental Assessment for this application was completed on September 10, 2015.

INFORMATION

The DNRC considered the following information submitted by the applicants:

Application as filed:

- Application for Beneficial Water Use Permit, Form 600
- Attachments
- Maps and aerial photos

Information within the DNRC's possession/knowledge

- Aquifer test report from Attila Folnagy, Groundwater Hydrologist dated June 1, 2015
- Depletion report from Attila Folnagy, Groundwater Hydrologist dated June 2, 2015
- USGS Topography Maps
- USGS Water-Resources Investigations Report 89-4082
- Communications with various Department staff, including groundwater hydrologists and engineers
- Water right records, DNRC database

The DNRC has fully reviewed and considered the evidence and argument submitted in the application and preliminarily determines the following pursuant to the Montana Water Use Act (Title 85, chapter 2, part 3, MCA).

PROPOSED APPROPRIATION

FINDINGS OF FACT:

1. The applicants are proposing to appropriate water from a groundwater well located in the Southeast quarter of the Southwest quarter of the Northwest quarter of Section 20, Township 27 North, Range 2 West in Pondera County near the town of Conrad. The proposed groundwater well will be located in the Marias River Basin (Basin 41P) which is not subject to any basin closures or controlled groundwater areas. The well will be completed to a depth of eight feet below ground surface (bgs) and will be located in a 40 foot thick sequence of poorly sorted gravels and sands. These alluvial materials are part of a paleochannel that experienced deposition during the Quaternary Period. Basal and lateral boundaries of the aquifer are provided by its incision into the Cretaceous Marias Formation. Static water levels in the aquifer have been observed at 4.76 feet bgs. Hydraulically connected surface waters are considered to be South Pondera Coulee and an unnamed tributary to South Pondera Coulee. Groundwater pumping is scheduled to occur from January 1 to December 31 in order to satisfy the needs of irrigation and domestic use, although irrigation will occur from March 1 to November 15. Irrigation will occur over approximately 1.3 acres of shelterbelt, lawn and garden, and an orchard. A flow rate of 300 GPM will provide volumes of 3.3 AF per year for irrigation purposes and 0.5 AF per year for domestic purposes. Compared to 3.8 AF of water that will be diverted, a volume of 3.98 AF is expected to be annually consumed by plants. Water will be transported from the point of diversion to the place of use by a truck hauling a 2,000 gallon tank. The place of use for irrigation and domestic purposes is located in the Northeast quarter of the Northeast quarter of the Southeast quarter and the Southeast quarter of the Southeast quarter of the Northeast quarter of Section 1, Township 27 North, Range 3 West. Figure 1 on the following page is a map of the proposed project.

Figure 1-Place of use and point of diversion locations for Application 41P 30072942.

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

GENERAL CONCLUSIONS OF LAW

2. The Montana Constitution expressly recognizes in relevant part that:

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

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

> (1) Pursuant to Article IX of the Montana constitution, the legislature declares that any use of water is a public use and that the waters within the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses as provided in this chapter…
> (3) It is the policy of this state and a purpose of this chapter to encourage the wise use of the state's water resources by making them available for appropriation consistent with this chapter and to provide for the wise utilization, development, and conservation of the waters of the state for the maximum benefit of its people with the least possible degradation of the natural aquatic ecosystems. In pursuit of this policy, the state encourages the development of facilities that store and conserve waters for beneficial use, for the maximization of the use of those waters in Montana…

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

> ... the Department shall issue a permit if the applicants prove by a preponderance of evidence that the following criteria are met:

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

(ii) water can reasonably be considered legally available during the period in which the applicants seek 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 the applicants' plan for the exercise of the permit that demonstrates that the applicants' 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 applicants have a possessory interest or the written consent of the person with the possessory interest in the property where the water is to be put to beneficial use, or if the proposed use has a point of diversion, conveyance, or place of use on national forest system lands, the applicants have any written special use authorization required by federal law to occupy, use, or traverse national forest system lands for the purpose of diversion, impoundment, storage, transportation, withdrawal, use, or distribution of water under the permit;

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

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

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

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

To meet the preponderance of evidence standard, "the applicants, in addition to other evidence demonstrating that the criteria of subsection (1) have been met, shall submit hydrologic or other

evidence, including but not limited to water supply data, field reports, and other information developed by the applicants, the Department, the U.S. Geological Survey, or the U.S. Natural Resources Conservation service and other specific field studies." § 85-2-311(5), MCA (emphasis added). The determination of whether an application has satisfied the § 85-2-311, MCA criteria is committed to the discretion of the Department. Bostwick Properties, Inc. v. Montana Dept. of Natural Resources and Conservation, 2009 MT 181, ¶ 21. The Department is required grant a permit only if the § 85-2-311, MCA, criteria are proven by the applicants by a preponderance of the evidence. Id. A preponderance of evidence is "more probably than not." Hohenlohe v. DNRC, 2010 MT 203, ¶¶33, 35.

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

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

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

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

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

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

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

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

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

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

Physical Availability:

FINDINGS OF FACT

Groundwater

8. The applicants requested variance from aquifer testing requirements which was accepted by Department hydrogeologists. An aquifer test was conducted in 2006 on behalf of Application

for Beneficial Water Use Permit No. 41P 30024017. The test was performed with regards to generally accepted methods and the results provided by the test were determined adequate. Water Rights Solutions, Inc. conducted the 72-hour aquifer test in the aquifer of interest approximately 1,100 feet northwest of the proposed well. The aquifer test was run at an average flow of 750 GPM.

9. The 72-hour aquifer test yielded drawdown results for three monitoring wells as measured with In-Situ® data loggers. Monitoring wells PPZ #1, PPZ #2, and PPZ #3 were respectively located 12.0 feet, 122.0 feet, and 157.0 feet from the production well. Water pumped from the production well was conveyed offsite and discharged onto a wheat field where it percolated back into the ground.

10. Maximum drawdown measurements of 4.10 feet, 2.58 feet, and 2.35 feet were obtained for monitoring wells PPZ #1, PPZ #2, and PPZ #3, respectively. At the production well, a maximum drawdown of 4.34 feet was measured. Drawdown was measured beneath static water levels, which was measured as 4.76 feet bgs in the production well.

11. An 8-hour aquifer test was conducted to satisfy ARM 36.12.121 (3)(e). Because the results from the 72-hour aquifer test performed in 2006 were utilized, the addition of a production well required an 8-hour test to be completed. Drawdown and yield were measured, allowing for the adequacy of diversion and physical availability to be analyzed.

12. Data obtained via 8-hour testing exposed the width of zone of influence to be 6,000 feet. The zone of influence is described as the point that a 0.01 foot drawdown contour occurs at.

13. According to the Irrigation Water Requirement program schedule at the Conrad station, a drawdown of 0.92 feet below the static water level of 4.76 feet bgs is expected for the maximum period of diversion. Accordingly, a depth of water equal to about 2.32 feet will exist above the bottom of the well during the maximum period of diversion.

14. Data obtained during both the 72-hour test and 8-hour test were utilized by Department Groundwater Hydrologist Attila Folnagy. The data and measured flow rates were plotted in a computer model, adjusted based on automatic matches, and then fine-tuned through trial and error to disclose physical availability of the aquifer and other important aquifer properties.

15. The Department's Groundwater Hydrologist found that the aquifer test data is consistent with results from other aquifer tests in the source aquifer and are generally credible.

16. Physical groundwater availability was calculated in order to ensure that water exists in the amount that the applicants seek to appropriate. Equation 1, below, is used to determine yearly aquifer flux.

Equation 1-Solving for yearly aquifer flux, Q.

$$Q = TWi$$ ***where:*** *Q=yearly aquifer flux*
T=transmissivity
W=width of zone of influence
i=groundwater gradient

17. 72-hour test drawdown data and measured flow rates were plotted in a computer model, adjusted based on automatic matches, and then fine-tuned with trial and error. Subsequently, this allowed for an estimation of transmissivity and also allowed for comparison between the estimated number and automatic matches. Adjustment and fine-tuning were performed until representative models were constructed. Cooper-Jacob drawdown analysis estimated an average transmissivity of 6,525 ft^2/day.

18. The 8-hour drawdown and yield test was necessary to determine the location that a 0.01 foot drawdown occurs, which is the radius of the zone of influence. In order to find the 0.01 foot drawdown contour distance that would occur during the maximum diversion, the Theis solution was applied to the data. At a prescribed monthly pumping schedule, the 0.01 foot drawdown contour occurs 3,000 feet from the proposed well location. Therefore, the width of zone of influence is 6,000 feet.

19. Groundwater gradient is the only remaining unknown needed to solve for yearly aquifer flux. A map depicting water table elevations was utilized to determine the groundwater gradient. It was reported that groundwater gradient is equal to 0.015 ft/ft.

20. All unknowns were solved for, and yearly aquifer flux could be calculated using Equation 1. Total yearly aquifer flux per year within the zone of influence was estimated at 4,921 acre-feet. Therefore, the Department concludes that the aquifer has water physically available at the proposed point of diversion to adequately provide for an additional flow of 300 GPM and a volume of up to 3.8 AF per year.

Surface Water

21. According to MCA §85-2-311, analysis of surface water net depletion and physical availability must also be accounted for. Due to the shallow depth of the water table and the highly permeable condition of the aquifer, surface waters in the area are considered to be hydraulically connected to groundwater. Hydraulically connected surface waters include South Pondera Coulee and an unnamed tributary to South Pondera Coulee, which are both either intermittent or ephemeral. Streamflow in these surface waters had to be estimated due to the lack of stream gages or other real-time measurements available in the area. The method used to estimate streamflow is based on a report (Water-Resources Investigations Report 89-4082) prepared by the U.S. Geological Survey in cooperation with the Montana Department of Fish, Wildlife, and Parks.

22. Based on the USGS report, basin area and local precipitation were entered into a monthly regression equation, which yielded a monthly exceedance flow value. The flow values were added together for a year and were found for 90% exceedance flows (Q_{90}), 50% exceedance flows (Q_{50}), and 20% exceedance flows (Q_{20}).

23. The watershed area was delineated based on a U.S. Geological Survey 7.5 minute 1:24,000 scale topographical map with 10' contour intervals. Because digitization of the watershed was completed using geographic information systems technology, the basin area was reported by the software to be approximately 17,600 acres.

24. Oregon State University has developed a precipitation model supported by the USDA Risk Management Agency which assigns a precipitation value for any spatial point. The model uses observed gage measurements, a digital elevation model, and various factors to produce a gridded raster of the daily precipitation across the entirety of Montana. Yearly precipitation models were available from 1980 up to 2013. After analyzing each year's precipitation and taking the mean of the values, it was determined that the average annual precipitation over the center of the watershed is about 12.0 inches.

25. The watershed area and average precipitation have been accounted for, so the regression equations were solved. Table 1 on the following page lists the expected exceedance flows for the three cases. 3.8 AF of volume is needed to satisfy the applicants' permit, which is available in the most conservative exceedance flow of approximately 1,200 AF, perhaps a representation of a drought stricken year. The Department concludes that surrounding surface waters have

water physically available at the proposed point of diversion to adequately provide for an additional flow of 300 GPM and a volume of up to 3.8 AF per year.

Table 1-The estimated exceedance flow values at the proposed point of diversion.

Month	Q_{90} Exceedance flow (cfs)	Q_{90} Volume (acre-feet)	Q_{50} Exceedance flow (cfs)	Q_{50} Volume (acre-feet)	Q_{20} Exceedance flow (cfs)	Q_{20} Volume (acre-feet)
January	0.7	43.8	1.2	74.4	1.5	91.9
February	0.8	46.4	1.3	70.6	1.7	96.5
March	0.9	57.5	1.7	107.3	2.7	164.7
April	2.2	128.8	4.7	279.9	7.0	419.3
May	4.6	281.2	10.8	662.2	16.4	1,009.8
June	3.7	221.1	10.6	630.3	16.1	958.5
July	1.7	105.8	3.8	232.3	5.7	352.0
August	1.1	69.7	2.6	159.4	3.8	231.4
September	1.1	62.9	2.1	124.6	3.2	191.1
October	1.2	76.1	2.1	127.2	2.7	163.9
November	1.1	64.1	1.7	101.3	2.0	120.0
December	0.8	50.7	1.2	74.4	1.5	92.4
Total Volume (acre-feet)		**1,208.1**		**2,643.9**		**3,891.5**

CONCLUSIONS OF LAW

26. Pursuant to § 85-2-311(1)(a)(i), MCA, the applicants must prove by a preponderance of the evidence that "there is water physically available at the proposed point of diversion in the amount that the applicants seek to appropriate."

27. It is the applicants' burden to produce the required evidence. In the Matter of Application for Beneficial Water Use Permit No. 41I 27665 by Anson (DNRC Final Order 1987)(applicant produced no flow measurements or any other information to show the availability of water; permit denied); In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC., (DNRC Final Order 2005).

28. The applicants must prove that at least in some years there is water physically available at the point of diversion in the amount the applicants seek to appropriate. *In the Matter of Application for Beneficial Water Use Permit No. 76G 72662 by John Fee and Don Carlson* (DNRC Final Order 1990); *In the Matter of Application for Beneficial Water Use Permit No. 76F 85184 by Wills Cattle Co. and Ed McLean* (DNRC Final Order 1994).

29. The applicants have proven that water is physically available at the proposed point of diversion in the amount the applicants seek to appropriate. § 85-2-311(1)(a)(i), MCA. (FOF 8-25)

Legal Availability:

FINDINGS OF FACT

Groundwater

30. Three additional groundwater permits exist within the 3,000 foot radius of influence. Legal demands bounded by the zone influence equal a volume of 220.1 AF per year. Aquifer flux was calculated to be 4,921 AF per year, which leaves 4,700.9 AF per year of excess groundwater legally available to permit. In Table 2 below, some basic aquifer properties are listed. On the following page is Figure 2, which is a Theis distance-drawdown plot after the month of July of pumping the applicants' well at the monthly pumping schedule. This plot can be used to estimate drawdown amounts that will occur a specific distance from the well.

Table 2-Some basic aquifer properties determined via in-situ and office methods.

Thickness (b)	40 feet
Transmissivity (T)	6,525 ft^2/day
Storativity (S)	0.1
Width of Zone of Influence (W)	6,000 feet
Groundwater Gradient (i)	0.015 ft/ft

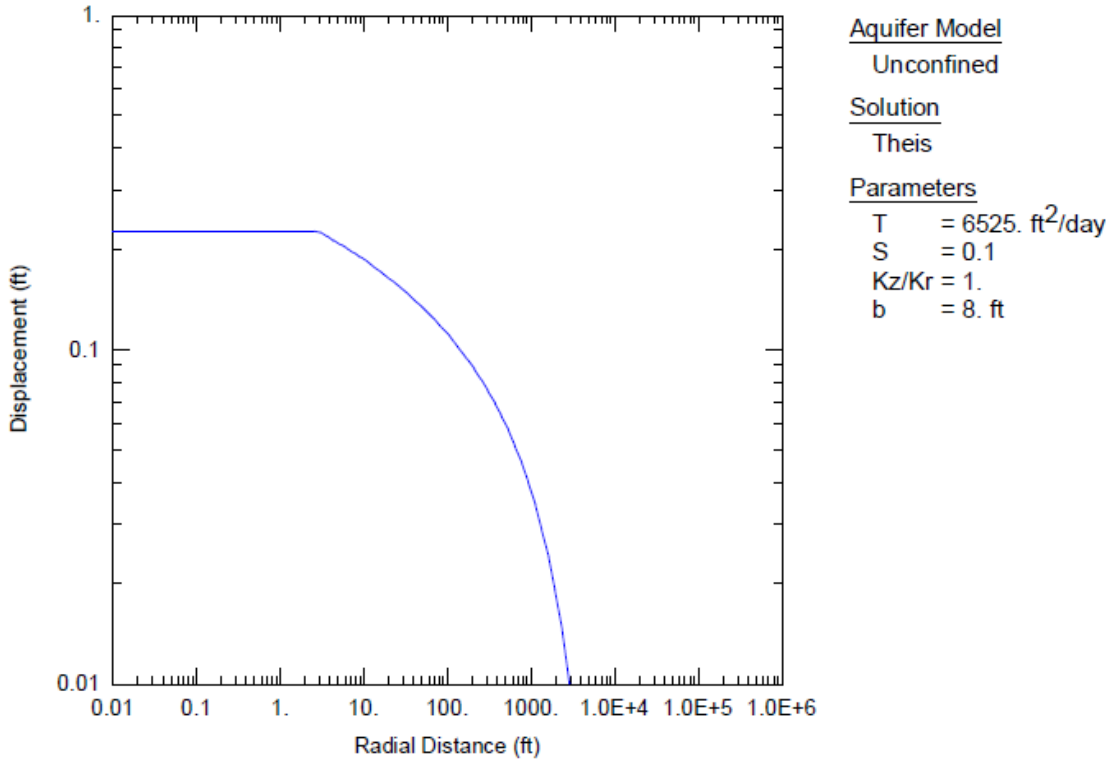

Figure 2-Theis (1935) distance-drawdown plot after July of pumping the applicants' well at the monthly pumping schedule.

31. An excess volume of 4,700.9 AF exists in the source aquifer. Therefore, the Department concludes that the aquifer has water legally available at the proposed point of diversion to provide for an additional flow of 300 GPM and a volume of up to 3.8 AF per year. Below, Table 3 is a list of the legal demands located within the zone of influence.

Table 3-A list of existing legal demands for groundwater wells that are within the Department's identified zone of influence.

Water Right	**Volume Diverted (AF)**
41P 58127 00	47.3
41P 30024017	167.8
41P 155871 00	5.0
Total Volume (AF)	**220.1**

Surface Water

32. The proposed well was modeled by the Department at a distance of 1,200 feet from unnamed tributary of South Pondera Coulee. A distance of 2,600 feet was used for the length between the stream and the edge of the paleochannel. The model predicts that depletion of unnamed tributary of South Pondera Coulee will experience some lag; however, depletions will primarily occur in May through January. Calculated consumption and modeled monthly depletion are reported in Table 4, below. Irrigation consumption was estimated based on consumption standards laid forth by the Irrigation Water Requirement program schedule for the Conrad station.

Table 4-A list presenting the reduction of monthly flow in hydraulically connected surface waters due to the proposed O'Brien well pumping schedule.

Month	Domestic Consumption (AF)	Irrigation Consumption (AF)	Depletion (AF)	Depletion (gpm)
January	0.004	0.000	0.060	0.440
February	0.004	0.000	0.000	0.000
March	0.004	0.000	0.000	0.000
April	0.004	0.058	0.000	0.000
May	0.004	0.504	0.190	1.380
June	0.004	0.785	0.530	3.990
July	0.004	1.076	0.790	5.770
August	0.004	0.920	0.900	6.550
September	0.004	0.491	0.730	5.490
October	0.004	0.096	0.450	3.260
November	0.004	0.000	0.210	1.580
December	0.004	0.000	0.130	0.930
Total	**0.050**	**3.930**	**3.980**	

33. On South Pondera Coulee and an unnamed tributary of South Pondera Coulee, 64 water rights are in use. The legal demand for these water rights was calculated based on ARM

36.12.112 and ARM 36.12.115. Below is Table 5, a comparison of those legal demands to the flow rate and volume of South Pondera Coulee and an unnamed tributary to South Pondera Coulee. Physical availability estimations were based on Q_{50} exceedance flows, or the approximate median point expected for the range of flow rates and volume exiting South Pondera Coulee at its point of convergence with Pondera Coulee. Based on the findings, the Department concludes that hydraulically connected surface waters have water legally available on South Pondera Coulee and an unnamed tributary to South Pondera Coulee. Groundwater pumping will not adversely affect downstream users, and enough water exists in the basin for the flow rate and volume that was requested.

Table 5-A table considering the 64 legal demands located along the source and the physical availability of water flowing past the point of convergence between South Pondera Coulee and Pondera Coulee.

Physical and Legal Availability of South Pondera Coulee and an Unnamed Tributary to South Pondera Coulee												
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Q_{50} Flow Rate Physically Available (cfs)	3.8	4.0	5.5	13.1	28.9	30.2	11.1	7.0	6.1	6.3	5.4	3.8
Existing Legal Demands (cfs)	0.5	0.4	0.5	1.2	2.5	2.6	2.6	2.6	2.3	1.4	0.5	0.5
Flow Rate Legally Available (cfs)	3.8	4.0	5.5	13.1	28.9	30.2	11.1	7.0	6.1	6.3	5.4	3.8
Volume Physically Available (AF)	231.0	224.6	338.3	781.6	1779.8	1797.3	684.2	427.4	362.0	389.4	320.6	235.4
Existing Legal Demands (AF)	31.0	28.0	31.0	73.5	155.1	152.0	157.0	157.0	137.3	88.0	30.0	31.0
Volume Legally Available (AF)	200.0	196.5	307.3	708.2	1624.7	1645.3	527.1	270.4	224.7	301.3	290.6	204.3

CONCLUSIONS OF LAW

34. Pursuant to § 85-2-311(1)(a), MCA, the applicants must prove by a preponderance of the evidence that:

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

(A) identification of physical water availability;

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

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

E.g., ARM 36.12.101 and 36.12.120; Montana Power Co., 211 Mont. 91, 685 P.2d 336 (Permit granted to include only early irrigation season because no water legally available in late irrigation season); *In the Matter of Application for Beneficial Water Use Permit No. 76F 81705 by Hanson* (DNRC Final Order 1992).

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

36. Pursuant to Montana Trout Unlimited v. DNRC, 2006 MT 72, 331 Mont. 483, 133 P.3d 224, the Department recognizes the connectivity between surface water and ground water and the effect of pre-stream capture on surface water. E.g., Wesmont Developers v. DNRC, CDV-2009-823, Montana First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 7-8; *In the Matter of Beneficial Water Use Permit Nos. 41H 30012025 and 41H 30013629 by Utility Solutions LLC* (DNRC Final Order 2006)(mitigation of depletion required), *affirmed*, Faust v. DNRC et al., Cause No. CDV-2006-886, Montana First Judicial District (2008); see also Robert and Marlene Takle v. DNRC *et al.*, Cause No. DV-92-323, Montana Fourth Judicial District for Ravalli County, *Opinion and Order* (June 23, 1994) (affirming DNRC denial of Applications for Beneficial Water Use Permit Nos. 76H 76691, 76H 72842, 76H 76692, and 76H 76070; underground tributary flow cannot be taken to the detriment of other appropriators including surface appropriators and ground water appropriators must prove unappropriated surface water, *citing* Smith v. Duff, 39 Mont. 382, 102 P. 984 (1909), and Perkins v. Kramer, 148 Mont. 355, 423 P.2d 587 (1966)); *In the Matter of Beneficial Water Use Permit No. 76H 80175 by Tintzman*

(DNRC Final Order 1993)(prior appropriators on a stream gain right to natural flows of all tributaries in so far as may be necessary to afford the amount of water to which they are entitled, *citing* Loyning v. Rankin (1946), 118 Mont. 235, 165 P.2d 1006; Granite Ditch Co. v. Anderson (1983), 204 Mont. 10, 662 P.2d 1312; Beaverhead Canal Co. v. Dillon Electric Light & Power Co. (1906), 34 Mont. 135, 85 P. 880); *In the Matter of Beneficial Water Use Permit No. 42M* 63997 *by Joseph F. Crisafulli* (DNRC Final Order 1990)(since there is a relationship between surface flows and the ground water source proposed for appropriation, and since diversion by applicant's well appears to influence surface flows, the ranking of the proposed appropriation in priority must be as against all rights to surface water as well as against all groundwater rights in the drainage.) Because the applicant bears the burden of proof as to legal availability, the applicant must prove that the proposed appropriation will not result in prestream capture or induced infiltration and cannot limit its analysis to ground water.§ 85-2-311(a)(ii), MCA. Absent such proof, the applicant must analyze the legal availability of surface water in light of the proposed ground water appropriation. *In the Matter of Application for Beneficial Water Use Permit No. 41H 30023457 By Utility Solutions LLC* (DNRC Final Order 2007) (permit denied); *In the Matter of Application for Beneficial Water Use Permit No. 76H 30028713 by Patricia Skergan and Jim Helmer* (DNRC Final Order 2009); Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 5 ; Wesmont Developers v. DNRC, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 11-12.

37. Where a proposed ground water appropriation depletes surface water, applicants must prove legal availability of amount of depletion of surface water throughout the period of diversion either through a mitigation /aquifer recharge plan to offset depletions or by analysis of the legal demands on, and availability of, water in the surface water source. Robert and Marlene Takle v. DNRC *et al.*, Cause No. DV-92-323, Montana Fourth Judicial District for Ravalli County, *Opinion and Order* (June 23, 1994); *In the Matter of Beneficial Water Use Permit Nos. 41H 30012025 and 41H 30013629 by Utility Solutions LLC* (DNRC Final Order 2006)(permits granted), *affirmed*, Faust v. DNRC et al., Cause No. CDV-2006-886, Montana First Judicial District (2008); *In the Matter of Application for Beneficial Water Use Permit 41H 30019215 by Utility Solutions LLC* (DNRC Final Order 2007*)*(permit granted), *affirmed*, Montana River Action Network et al. v. DNRC et al., Cause No. CDV-2007-602, Montana First Judicial District

(2008); *In the Matter of Application for Beneficial Water Use Permit No. 41H 30023457 by Utility Solutions LLC* (DNRC Final Order 2007) (permit denied for failure to analyze legal availability outside of irrigation season (where mitigation applied)); *In the Matter of Application for Beneficial Water Use Permit No. 41H 30026244 by Utility Solutions LLC* (DNRC Final Order 2008); *In the Matter of Application for Beneficial Water Use Permit No. 76H-30028713 by Patricia Skergan and Jim Helmer* (DNRC Final Order 2009)(permit denied in part for failure to analyze legal availability for surface water depletion); Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 5 (Court affirmed denial of permit in part for failure to prove legal availability of stream depletion to slough and Beaverhead River); Wesmont Developers v. DNRC, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 11-12 ("DNRC properly determined that Wesmont cannot be authorized to divert, either directly or indirectly, 205.09 acre-feet from the Bitterroot River without establishing that the water does not belong to a senior appropriator"; applicant failed to analyze legal availability of surface water where projected surface water depletion from groundwater pumping); *In the Matter of Application for Beneficial Water Use Permit No. 76D-30045578 by GBCI Other Real Estate, LLC* (DNRC Final Order 2011) (in an open basin, applicant for a new water right can show legal availability by using a mitigation/aquifer recharge plan or by showing that any depletion to surface water by groundwater pumping will not take water already appropriated; development next to Lake Koocanusa will not take previously appropriated water). Applicant may use water right claims of potentially affected appropriators as a substitute for "historic beneficial use" in analyzing legal availability of surface water under § 85-2-360(5), MCA. Royston, supra.

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

Adverse Effect:

FINDINGS OF FACT

39. *Groundwater:* Drawdown in the proposed well and those surrounding wells was calculated in order to ensure that the proposed well will not adversely affect senior water rights.

After five years of pumping the applicants' well at the monthly pumping schedule, models predicted drawdown of less than one foot to be expected in the proposed well and those three additional wells that are within the zone of influence.

40. *Surface Water:* South Pondera Coulee and an unnamed tributary to South Pondera Coulee are considered to be hydraulically connected to the source aquifer. 3.8 AF of surface water streamflow will be depleted for the purpose of recharging the source aquifer. Senior surface water right holders will not be adversely affected downstream of the proposed well.

41. In the event of a call being placed on water, the applicants will discontinue diverting water until such time that diverting water will no longer have an adverse impact on downstream water right holders.

42. The Department finds there will be no adverse effect due to the amount of water being legally available and because the applicants' plan to curtail their appropriation during times of water shortage is adequate.

CONCLUSIONS OF LAW

43. Pursuant to § 85-2-311(1)(b), MCA, the applicants bear the affirmative burden of proving by a preponderance of the evidence that the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. Analysis of adverse effect must be determined based on a consideration of an applicants' plan for the exercise of the permit that demonstrates that the applicants' use of the water will be controlled so the water right of a prior appropriator will be satisfied. See Montana Power Co. (1984), 211 Mont. 91, 685 P.2d 336 (purpose of the Water Use Act is to protect senior appropriators from encroachment by junior users); Bostwick Properties, Inc. ¶ 21.

44. The applicants must analyze the full area of potential impact under the § 85-2-311, MCA criteria, *In the Matter of Beneficial Water Use Permit No. 76N 30010429 by Thompson River Lumber Company* (DNRC Final Order 2006). While § 85-2-361, MCA, limits the boundaries expressly required for compliance with the hydrogeologic assessment requirement, the applicants are required to analyze the full area of potential impact for adverse effect in addition to the requirement of a hydrogeologic assessment. Id. ARM 36.12.120(8).

45. Applicants must prove that no prior appropriator will be adversely affected, not just the objectors. Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 4.

46. In analyzing adverse effect to other appropriators, the applicants may use the water rights claims of potentially affected appropriators as evidence of their "historic beneficial use." See Matter of Application for Change of Appropriation Water Rights Nos. 41S 101960and 41S 101967 by Royston (1991), 249 Mont. 425, 816 P.2d 1054.

47. It is the burden of the applicants to produce the required evidence. E.g., Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7 (legislature has placed the burden of proof squarely on the applicant); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*, (DNRC Final Order 2005). (DNRC Final Order 2005). The Department is required to grant a permit only if the § 85-2-311, MCA, criteria are proven by the applicants by a preponderance of the evidence. Bostwick Properties, Inc. ¶ 21.

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

49. The applicants have proven by a preponderance of the evidence that the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. § 85-2-311(1)(b), MCA. (FOF Nos. 39-42)

Adequate Diversion:

FINDINGS OF FACT

50. The pump will be a Honda WT30 three-inch intake trash pump. Based on the pump specifications, this pump is capable of providing a 300 GPM discharge, and can generate 82 feet of total head lift and 26 feet of suction head lift.

51. The applicants have stated that the small groundwater pit will contain a three foot diameter corrugated metal pipe set to a depth of eight feet. The corrugated pipe will act as a collection gallery for water to be pumped from. Two three inch diameter PVC pipes will be set vertically in the well, and will be connected as a single manifold exiting the corrugated metal pipe. The PVC pipe leaving the corrugated metal pipe will be connected to a three inch diameter

globe valve and a quick coupler. The trash pump will be connected to the quick coupler, and a discharge hose will fill a 2,000 gallon tank which will be transported to the place of use with a truck. All diversion works have been designed and constructed by the applicant, who is a licensed professional engineer. Transportation of the water from the point of diversion to the place of use will occur via Highway 91 and private drives. At the place of use, a hose will connect the tank to either a cistern or irrigation pump, or flood irrigation will occur directly from the tank discharge hose.

52. The Department finds that the proposed well is capable of providing a 300 GPM flow for a volume up to 3.8 AF annually.

CONCLUSIONS OF LAW

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

54. 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. 41Q 33983 by Hoyt* (DNRC Final Order 1981); § 85-2-312(1)(a), MCA.

55. Applicants have proven by a preponderance of the evidence that the proposed means of diversion, construction, and operation of the appropriation works are adequate for the proposed beneficial use. § 85-2-311(1)(c), MCA (FOF 50-52).

Beneficial Use:

FINDINGS OF FACT

56. The applicants propose to divert 300 GPM for a volume up to 3.8 AF from a shallow alluvial aquifer in close hydraulic connection to surface water. Any time savings related to the use of this size pump will be beneficial. The groundwater will provide a domestic supply for the household year-round. Water will also be used to irrigate lawn/garden and shelterbelts surrounding the household from March 1 to November 15.

57. According to ARM 36.12.112(1)(c), irrigation in this region is to occur from April 20 to October 10. However, the applicants have proposed that this is not enough time for adequate

irrigation to occur. ARM 36.12.112 (3) requires an explanation for deviating from the period of diversion and period of use standards.

58. For the case of a standard grain crop such as wheat, precipitation events with a low intensity and short duration can provide shallow subsurface flows if antecedent soil moisture conditions allow. This results in a much higher percentage of natural precipitation being consumed by the crop instead of sitting as soil moisture above the root zone.

59. Trees have a much deeper root system that often penetrates soil well below the zone of antecedent soil moisture. Therefore, an extended irrigation season will be beneficial in order to extend the zone of antecedent soil moisture deeper, and to ensure that the soil stays moist near the roots during the portion of the year when the ground is thawed. Waiting an additional month and a half to begin irrigation could allow for a significant portion of the soil horizon to become dry.

60. An extended irrigation season ensures adequate soil moisture exists around the roots during the period of irrigation, resulting in a higher percentage of irrigation water consumed by the trees. In turn, this optimizes the growing season.

61. The volume of water required for irrigation and domestic use is 3.8 AF, or 0.5 AF volume for domestic use and up to 2.5 AF/acre volume for irrigation of 1.3 acres as allowed in ARM 36.12.115(2)(a). The volume needed for domestic use has been estimated based on historical information regarding the hauling of water for domestic use.

62. The Department finds that the proposed flow of 300 GPM for a volume up to 3.8 AF per year pumped from an unnamed alluvial aquifer is a beneficial use of water.

CONCLUSIONS OF LAW

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

64. An appropriator may appropriate water only for a beneficial use. See also, § 85-2-301 MCA. It is a fundamental premise of Montana water law that beneficial use is the basis, measure, and limit of the use. E.g., McDonald, supra; Toohey v. Campbell (1900), 24 Mont. 13, 60 P. 396. The amount of water under a water right is limited to the amount of water necessary to sustain the beneficial use. E.g., Bitterroot River Protective Association v. Siebel, *Order on Petition for Judicial Review*, Cause No. BDV-2002-519, Montana First Judicial District Court,

Lewis and Clark County (2003), *affirmed on other grounds*, 2005 MT 60, 326 Mont. 241, 108 P.3d 518; *In The Matter Of Application For Beneficial Water Use Permit No. 43C 30007297 by Dee Deaterly* (DNRC Final Order), *affirmed other grounds*, Dee Deaterly v. DNRC *et al*, Cause No. 2007-186, Montana First Judicial District, *Order Nunc Pro Tunc on Petition for Judicial Review* (2009); Worden v. Alexander (1939), 108 Mont. 208, 90 P.2d 160; Allen v. Petrick (1924), 69 Mont. 373, 222 P. 451; *In the Matter of Application for Beneficial Water Use Permit No. 41S-105823 by French* (DNRC Final Order 2000).

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

65. Applicants propose to appropriate water for irrigation and domestic use which are recognized as beneficial uses. § 85-2-102(4), MCA. Applicants have proven by a preponderance of the evidence that irrigation and domestic use are beneficial and that the flow rate of 300 GPM up to 3.8 AF of water requested is the amount needed to sustain the beneficial use. § 85-2-311(1)(d), MCA, (FOF Nos. 56-62)

Possessory Interest:

FINDINGS OF FACT

66. The applicants signed and had the affidavit on the application form notarized affirming the applicants have possessory interest, or the written consent of the person with possessory interest, in the property where the water is to be put to beneficial use.

CONCLUSIONS OF LAW

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

68. Pursuant to ARM 36.12.1802:

(1) The applicants or a representative shall sign the application affidavit to affirm the following:
(a) the statements on the application and all information submitted with the application are true and correct and
(b) except in cases of an instream flow application, or where the application is for sale, rental, distribution, or is a municipal use, or in any other context in which water is being supplied to another and it is clear that the ultimate user will not accept the supply without consenting to the use of water on the user's place of use, the applicants have possessory interest in the property where the water is to be put to beneficial use or has the written consent of the person having the possessory interest.
(2) If a representative of the applicants signs the application form affidavit, the representative shall state the relationship of the representative to the applicants on the form, such as president of the corporation, and provide documentation that establishes the authority of the representative to sign the application, such as a copy of a power of attorney.
(3) The Department may require a copy of the written consent of the person having the possessory interest.

66. The applicants have proven by a preponderance of the evidence that it has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use. § 85-2-311(1)(e), MCA. (FOF 66)

PRELIMINARY DETERMINATION

Subject to the terms, analysis, and conditions in this Order, the Department preliminarily determines that Application for Beneficial Water Use Permit No. 41P 30072942 should be **GRANTED**.

The Department determines the applicants may divert water from an eight foot deep groundwater well located in the Southeast quarter of the Southwest quarter of the Northwest quarter of Section 20, Township 27 North, Range 2 West, Pondera County and located in an unnamed alluvial aquifer. The well will be pumped at a flow rate of 300 GPM for a volume up to 0.5 AF from January 1 to December 31 for domestic use and 3.3 AF from March 1 to November 15 for irrigation. The place of use will be located in the Northeast quarter of the Northeast quarter of the Southeast quarter and the Southeast quarter of the Southeast quarter of the Northeast quarter of Section 1, Township 27 North, Range 3 West, Pondera County.

NOTICE

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

DATED this 18th day of November, 2015.

/Original signed by Matt Miles/

_____

Matt Miles, Deputy Regional Manager
Havre Water Resource Office
Department of Natural Resources and Conservation

CERTIFICATE OF SERVICE

This certifies that a true and correct copy of the PRELIMINARY DETERMINATION TO GRANT was served upon all parties listed below on this 18th day of November, 2015 by first class United States mail.

MICHAEL AND LINDA O'BRIEN
PO BOX 921
CONRAD, MONTANA 59425

/Original signed by Mike Mahowald/
_____
Mike Mahowald