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

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APPLICATION TO CHANGE WATER RIGHT NO. 40B 30164213 by East Fork Holdings LLC	)))	**DRAFT PRELIMINARY DETERMINATION TO GRANT CHANGE**

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On February 4, 2025, East Fork Holdings LLC (Applicant) submitted Application to Change Water Right No. 40B 30164213 to change Statement of Claim No. 6655-00 to the Lewistown Regional Office (LRO) of the Department of Natural Resources and Conservation (the Department or DNRC). The Department published receipt of the application on its website. The Department sent Applicant a deficiency letter under §85-2-302, Montana Code Annotated (MCA), dated February 24, 2025. Applicant responded with information dated June 25, 2025. A preapplication meeting was held between the Department and Applicant on July 2, 2024, in which the Applicant designated that the Technical Analyses for this application would be completed by the Department. Applicant returned the completed Change Preapplication Meeting Form on August 1, 2024. The Department delivered the completed Technical Analyses on August 9, 2024. Because the Application to Change Water Right form, submitted by the Applicant on February 4, 2025, deviated substantially from the Preapplication Meeting Form (on which the Department's Technical Analyses were based), the Department moved Application to Change Water Right No. 40B 30164213 to non-expedited pathway pursuant to ARM 36.12.1302(6) on February 7, 2025. Application was determined to be correct and complete as of July 25, 2025. An Environmental Assessment for this application was completed on August 11, 2025. As a result of Application to Change Water Right No. 40B 30164213 being moved to non-expedited pathway, DNRC is delivering a Revised Technical Analyses to Applicant along with this Draft Preliminary Determination.

INFORMATION

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

Application as filed:

- Application for Change of Appropriation Water Right, Form No. 606
    - Maps (Note that revised maps, submitted as part of Applicant's deficiency response and addressed in the Information Received after Application Filed

section of this document, supersede the following maps which were submitted with the Application as filed):

- *Site Vicinity Map East Fork Holdings LLC.* Created by Water & Environmental Technologies (WET) (Consultant), dated April 25, 2024
- *Proposed Use of 40F 6655-00 East Fork Holdings LLC.* Created by WET, dated January 31, 2025
- *1953 Aerial Historical Place of Use.* Created by WET, dated April 25, 2024
- *Water Use Survey Historical Place of use.* Created by WET, dated April 25, 2024
- *1975 Aerial Historical Place of Use.* Created by WET, dated April 25, 2024
- *1979 DNRC Examination Report Historical Place of Use.* Created by WET, dated April 25, 2024

- Department-completed Technical Analyses based on information provided in the Change Preapplication Meeting Form, dated August 1, 2024 (Note that the Department has completed a Revised Technical Analyses, dated November 21, 2025.)

Information Received after Application Filed

- *Ditch and Waterline Easement Agreement,* between McDonald Creek Holdings LLC (note that Applicant is a subsidiary of McDonald Creek Holdings LLC) and Boyce, Inc., dated July 29, 2025, and received by DNRC LRO on October 23, 2025
- Water Right Ownership Update Form (Form 608), received by DNRC LRO on November 3, 2025; assigned Water Right Ownership Update ID No. 279637
- *Response to Deficiency letter for Change Application No. 40B 30164213*, dated June 20, 2025. Sent by Brad Bennett, PG, Senior Hydrologist, of WET and received by DNRC LRO June 25, 2025
  - Technical Analyses Addendum Form No. 606-TAA and two (2) Form 606-TAA Additional Sheet
  - Maps (note that the following maps supersede the maps submitted in the Application as filed):
    - *Site Vicinity Map Statement of Claim 40B 6655-00 East Fork Holdings LLC.* Created by WET, dated June 20, 2025
    - *Proposed Water Use Change Application 40B 30164213 East Fork Holdings LLC.* Created by WET, dated June 20, 2025

        - *Historical Water Use – 1953 Statement of Claim 40B 6655-00 East Fork Holdings LLC.* Created by WET, dated June 20, 2025
        - *Water Resources Survey - 1970 Statement of Claim 40B 6655-00 East Fork Holdings LLC.* Created by WET, dated June 20, 2025
        - *Historical Water Use – 1975 Statement of Claim 40B 6655-00 East Fork Holdings LLC.* Created by WET, dated June 20, 2025
        - *DNRC Examination Report Map – 1975 Statement of Claim 40B 6655-00 East Fork Holdings LLC.* Created by WET, dated June 20, 2025
        - *New, Unchanged, & Retired POU Statement of Claim 40B 6655-00 East Fork Holdings LLC.* Created by WET, dated June 20, 2025
    - Other attachments were included in the deficiency response. A full list and copies of the attachments are available in the application file.
- *40B 6655-00: East Fork Holdings LLC – Proposed Water Use for 17.4 Acres Graded Border Fields (Revised)*. Sent by Consultant, via email, to DNRC LRO on October 3, 2025

Information within the Department's Possession/Knowledge

- Department file for Statement of Claim No. 40B 6655-00
- 1970 Fergus County Water Resource Survey materials (unpublished), including maps and field notes
- Fergus County Water Resources Survey aerial photos MY-3CC-150 and MY-3CC-152, dated September 4, 1962
- USDA aerial photograph No. 378-72, dated July 11, 1980
- Montana Water Court Case 40B-126 (Master's Report adopted December 19, 2014)
- Montana Cadastral parcel and property information
- Fang, X. (Copyright 2007, updated). *The Open Channel Flow Calculator*. Department of Civil and Environmental Engineering, Auburn University, Alabama, USA. https://eng.auburn.edu/~xzf0001/Handbook/Channels.html
- Szyk, B. (Last updated: July 24, 2024). *Pipe Flow Calculator*. Omni Calculator Physics. https://www.omnicalculator.com/physics/pipe-flow
- DNRC Memorandum: *Preapplication Meeting Form and preapplication timelines for Application to Change a Water Right No. 40B 30164213 no longer applicable,* dated July 30, 2025
- DNRC Memorandum: *Original Technical Analyses for Application to Change a Water Right No. 40B 30164213 no longer applicable,* dated July 30, 2025

- The Department also routinely considers the following information. The following information is not included in the administrative file for this Application, but is available upon request. Please contact the Lewistown Regional Office at 406-538-7459 to request copies of the following documents.
    - DNRC Memorandum: *Development of standardized methodologies to determine historic diverted volume,* dated September 13, 2012
    - DNRC Memorandum: *Distributing conveyance loss on multiple user ditches,* dated February 14, 2020
    - DNRC Memorandum: *Assessment of new consumptive use and irrecoverable losses associated with change applications*, dated April 15, 2013
    - DNRC Standard Practice to Analyze Return Flows (DNRC Change Application Manual, February 2025)

The Department has fully reviewed and considered the evidence and argument submitted in this Application and preliminarily determines the following pursuant to the Montana Water Use Act (Title 85, chapter 2, part 3, part 4, MCA).

For the purposes of this document, Statement of Claim No. 40B 6655-00 is synonymous with "the subject right." As expounded on in Finding of Fact (FOF) Nos. 1and 2 below, use of "Applicant" denotes East Fork Holdings LLC as well as McDonald Creek Holdings LLC. "Irrigation Scenario No. 1" and "Irrigation Scenario No. 2" are terms originally provided by the Applicant in the proposed use narrative of Application to Change Water Right No. 40B 30164213. The irrigation scenarios compartmentalize aspects of the proposed irrigation project in a manner that may make information easier to understand. For that reason, the Department has incorporated the terms into this document. The irrigation scenarios are described in detail within the Adverse Effect section of this document.

Abbreviations of note in this document include: LRO means Lewistown Regional Office; WET means Water & Environmental Technologies (Consultant); FOF means Finding of Fact; ARM means Administrative Rules of Montana; MCA means Montana Code Annotated; WRS means Water Resource Survey; CFS means cubic feet per second; GPM means gallons per minute; AF means acre-feet; AC means acres; IN means inches; FT means feet; hp means horsepower; IWR means Irrigation Water Requirement; NIR means Net Irrigation Requirement; LLD means legal land description; Sec means Section; TWP means Township; and RGE means Range.

WATER RIGHT TO BE CHANGED

FINDINGS OF FACT

1. Application to Change Water Right No. 40B 30164213 was filed by East Fork Holdings LLC. East Fork Holdings LLC is a subsidiary of McDonald Creek Holdings LLC. As such, "Applicant" in this document may be used interchangeably with either limited liability company.

2. After the filing of Application to Change Water Right No. 40B 30164213, and as per Montana Cadastral, the ownership of all property parcels associated with the proposed place of use of Statement of Claim No. 40B 6655-00 were transferred from East Forks Holdings LLC to McDonald Creek Holdings LLC. On November 3, 2025, DNRC LRO received Water Right Ownership Update ID No. 279637 (Form 608), which, in part, transferred ownership of Statement of Claim No. 6655-00 from East Fork Holdings LLC to McDonald Creek Holdings LLC.

3. Applicant seeks a (partial) change in place of use and a change in place of storage (adding a place of storage) of Statement of Claim No. 40B 6655-00. Statement of Claim No. 40B 6655-00 is filed for a flow rate of 2.50 CFS and a diverted volume not to exceed the amount put to historical and beneficial use. Water appropriated under Statement of Claim No. 40B 6655-00 is sourced from North Fork McDonald Creek. The historical means of diversion is a dike and water has historically been conveyed to the place of use via ditch. The purpose of Statement of Claim No. 40B 6655-00 is flood irrigation of 155.00 AC. The period of use and the period of diversion is May 15 to September 15. The point of diversion is in SESWSE Sec 14 TWP 15N RGE 20E Fergus County. **Table 1** below summarizes the claimed elements of Statement of Claim No. 40B 6655-00.

Table 1: Water Right Proposed for Change

Water Right Number	Flow Rate (CFS)	Volume	Purpose	Period Of Use	Place Of Use[A]	Point Of Diversion	Priority Date
40B 6655-00	2.50	Unquantified	Irrigation (Flood)	05/15 to 09/15	S2SWSW Sec 13 TWP 15N RGE 20E; S2S2SE Sec 14 TWP 15N RGE 20E; NENE Sec 23 TWP 15N RGE 20E; N2 Sec 24 TWP 15N RGE 20E; NW Sec 19	SESWSE Sec 14 TWP 15N RGE 20E Fergus County	3/4/1883

					TWP 15N RGE 21E		

[A]All LLDs associated with Statement of Claim No. 40B 6655-00's place of use are within Fergus County.

4. The Department finds that no active water rights are comingled with nor supplemental to Statement of Claim No. 6655-00. The Department finds no overlapping relationship between Statement of Claim No. 40B 6655-00, as historically used, and other active water rights.

5. There are no previous change authorizations on Statement of Claim No. 40B 6655-00.

CHANGE PROPOSAL

FINDINGS OF FACT

6. Applicant proposes a (partial) change to the place of use and change in place of storage (adding a place of storage) of Statement of Claim No. 40B 6655-00. The proposed change will result in 70.65 AC of flood irrigation occurring in Sec 24 TWP 15N RGE 20E as well as Sections 19 and 20 of TWP 15N RGE 21E (all within Fergus County). Precise acreages and quarter-section LLDs for the four proposed place of use IDs are provided in **Table 2** below.

Table 2: Proposed place of use

ID	ACRES	Qtr Sec	Sec	TWP	RGE	County
1	14.88	E2NE	24	15N	20E	Fergus
2	38.36	NW	19	15N	21E	Fergus
3	10.27	SENE	19	15N	21E	Fergus
4	7.14	SWNW	20	15N	21E	Fergus
Total	**70.65**					

7. Applicant proposes to retire 101.75 AC out of the historically irrigated 155.00 AC. Application also proposes 17.40 AC of new irrigation outside of the historical footprint. This results in a proposed 84.35 AC net reduction in irrigated acres. **Figure 1** (New, Unchanged, and Retired Use Map) below visualizes the proposed retired acreage; new acreage; and acreage to continue as flood irrigation within the historical footprint. Note that although Figure 1 was submitted by the Applicant, the Department has edited the original version. Pertinent edits include renaming ditches and revising a misidentified "flume" to "culvert." (The need for these edits is explained in FOF Nos. 25 and 26 below.)

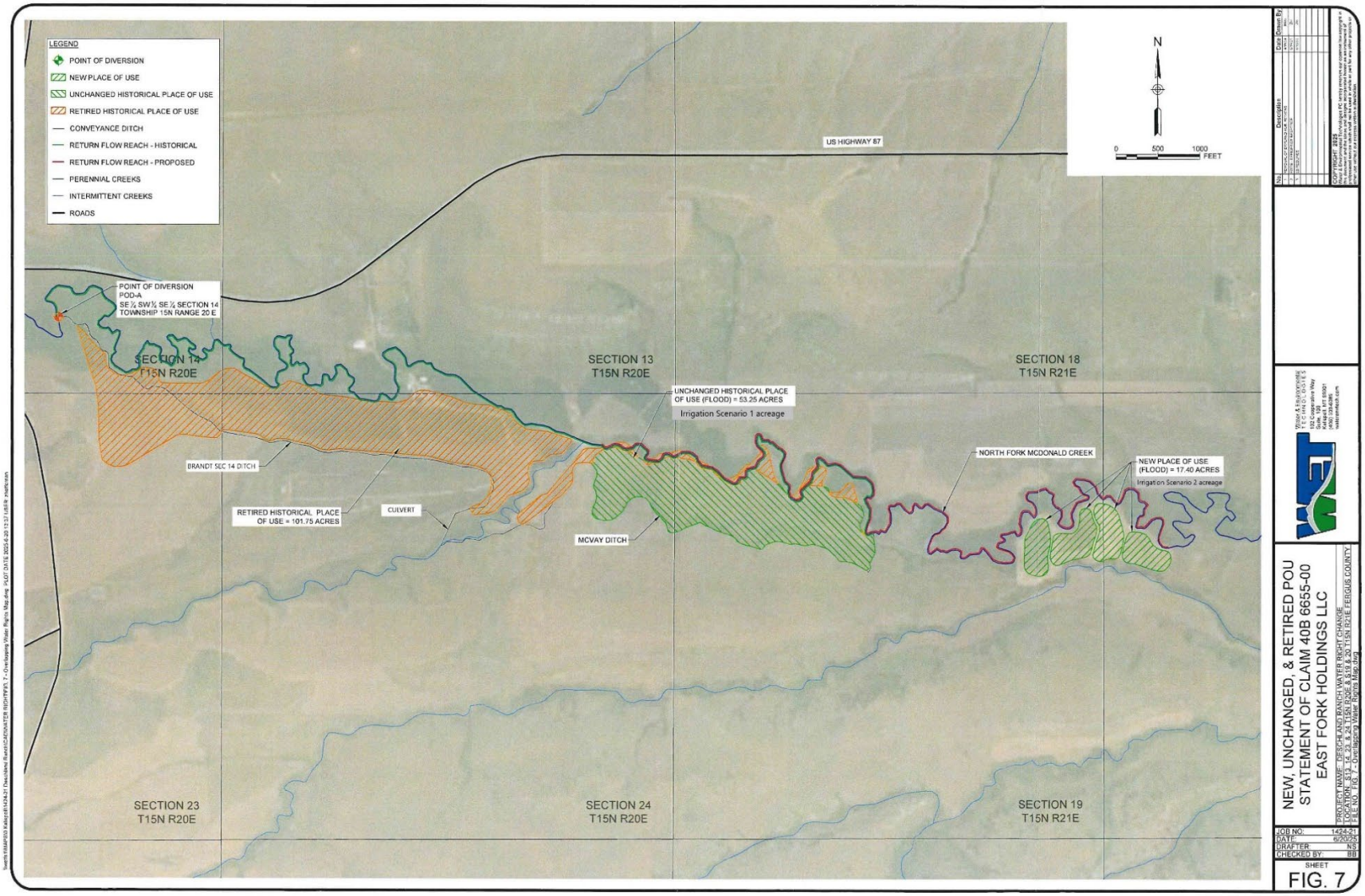

Figure 1: New, Unchanged, and Retired Use Map. Map created by WET on June 20, 2025. Edited with additional information by Matthew Shaw of DNRC on October 14, 2025.

8. The proposed change will result in up to 7.71 AF of water being stored in a 1.62 AC surface area/6.48 AF capacity place of storage throughout a proposed period of storage of May 15 to September 15. (Surface area and capacity calculations are provided in the Adverse Effect section of this document.) The proposed place of storage is in S2SENE Sec 19 TWP 15N RGE 21E Fergus County and NWSWSWNW Sec 20 TWP 15N 21E Fergus County.

9. Applicant proposes to leave 41.61 AF of the historical diverted non-consumed volume instream at the historical point of diversion.

10. Applicant proposes to change the means of diversion from a dike to a pump. (Pump model and specifications are provided in the Adequate Means of Diversion section of this document.)

11. Applicant proposes to convey all water appropriated under Statement of Claim No. 40B 6655-00 via enclosed pipeline.

12. Applicant proposes for the historical flow rate (2.50 CFS); purpose (flood irrigation); point of diversion (SESWSE Sec 14 TWP 15N RGE 20E Fergus County); and period of use/period of diversion (both May 15 to September 15) to remain unchanged.

13. No water rights will become comingled with the subject right because of the change proposal.

14. The Proposed Use Map **(Figure 2)** below shows the elements of the proposed change. Note that although Figure 3 was submitted by the Applicant, the Department has edited the original version. Edits pertinent to proposed use include addition of the Boyce Inc. property parcel (discussed in FOF No. 75/Figure 5 below) and call-out boxes for the irrigated acreage associated with various irrigation scenarios (discussed in the Adverse Effect section of this document).

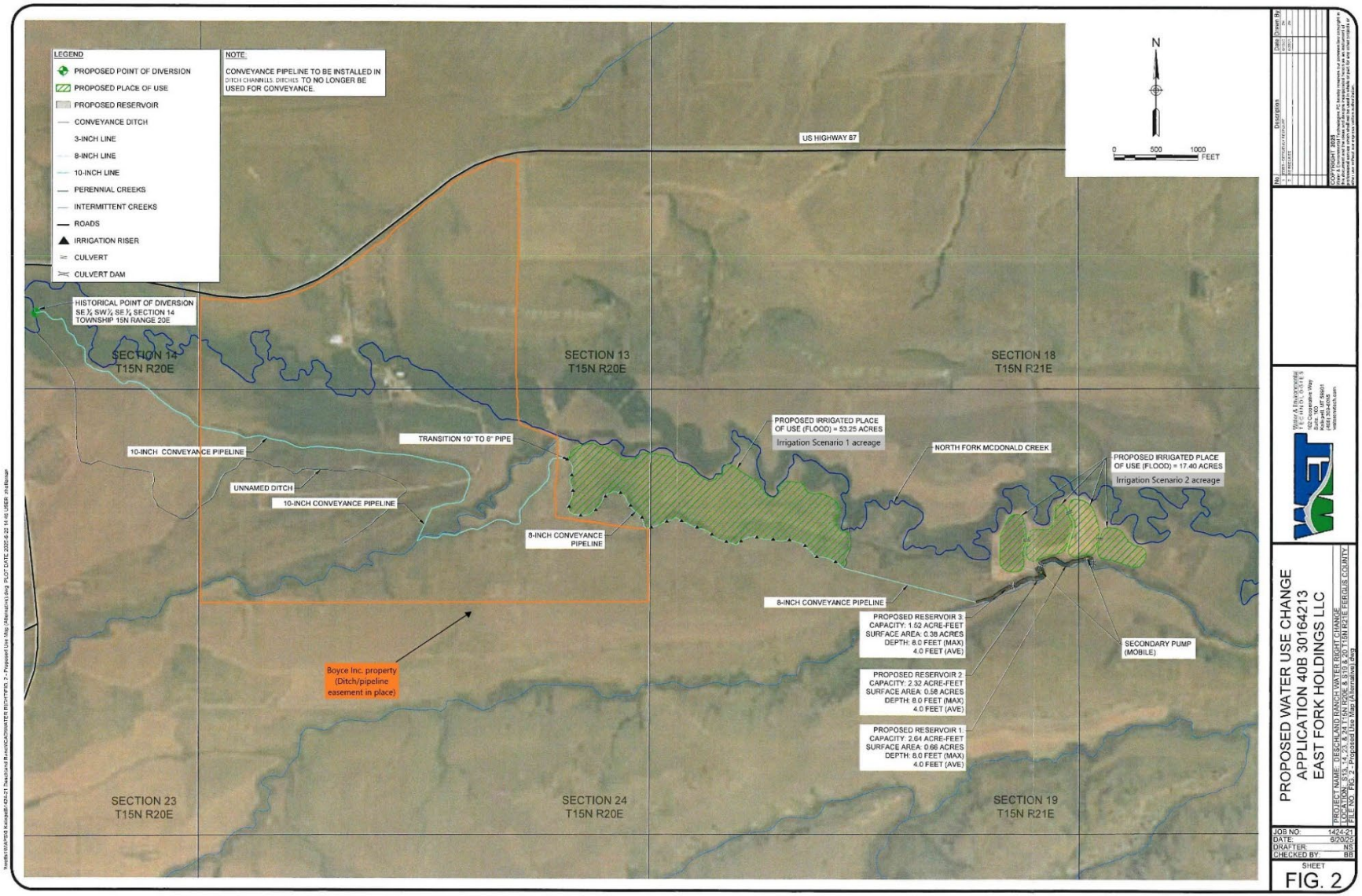

Figure 2: Proposed Use Map. Created by Water & Environmental Technologies on June 20, 2025. Edited with additional information by Matthew Shaw of DNRC on October 31, 2025.

CHANGE CRITERIA

15. The Department is authorized to approve a change if the Applicant meets its burden to prove the applicable § 85-2-402, MCA, criteria by a preponderance of the evidence. *Matter of Royston*, 249 Mont. 425, 429, 816 P.2d 1054, 1057 (1991); *Hohenlohe v. DNRC*, 2010 MT 203, ¶¶ 33, 35, and 75, 357 Mont. 438, 240 P.3d 628 (an Applicant's burden to prove change criteria by a preponderance of evidence is "more probable than not."); *Town of Manhattan v. DNRC*, 2012 MT 81, ¶ 8, 364 Mont. 450, 276 P.3d 920. Under this Preliminary Determination, the relevant change criteria in § 85-2-402(2), MCA, are:

> (2) Except as provided in subsections (4) through (6), (15), (16), and (18) and, if applicable, subject to subsection (17), the department shall approve a change in appropriation right if the appropriator proves by a preponderance of evidence that the following criteria are met:
> (a) The proposed change in appropriation right will not adversely affect the use of the existing water rights of other persons or other perfected or planned uses or developments for which a permit or certificate has been issued or for which a state water reservation has been issued under part 3.
> (b) The proposed means of diversion, construction, and operation of the appropriation works are adequate, except for: (i) a change in appropriation right for instream flow pursuant to 85-2-320 or 85-2-436; (ii) a temporary change in appropriation right for instream flow pursuant to 85-2-408; or (iii) a change in appropriation right pursuant to 85-2-420 for mitigation or marketing for mitigation.
> (c) The proposed use of water is a beneficial use.
> (d) The Applicant has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use or, if the proposed change involves a point of diversion, conveyance, or place of use on national forest system lands, the Applicant has any written special use authorization required by federal law to occupy, use, or traverse national forest system lands for the purpose of diversion, impoundment, storage, transportation, withdrawal, use, or distribution of water. This subsection (2)(d) does not apply to: (i) a change in appropriation right for instream flow pursuant to 85-2-320 or 85-2-436; (ii) a temporary change in appropriation right for instream flow pursuant to 85-2-408; or (iii) a change in appropriation right pursuant to 85-2-420 for mitigation or marketing for mitigation.

16. The evaluation of a proposed change in appropriation does not adjudicate the underlying right(s). The Department's change process only addresses the water right holder's ability to make a different use of that existing right. *E.g., Hohenlohe*, ¶¶ 29-31; *Town of Manhattan*, ¶ 8; *In the*

Matter of Application to Change Appropriation Water Right No.41F-31227 by T-L Irrigation Company (DNRC Final Order 1991).

HISTORICAL USE AND ADVERSE EFFECT

FINDINGS OF FACT - Historical Use

17. The decree status for Statement of Claim No. 40B 6655-00 is Post Decree. (See Preliminary Decree No. 95 for Flatwillow Creek, Including Box Elder Creek, issued May 5, 2011.) The Department finds the subject right's priority date, as modified by Montana Water Court Case No. 40B-126, to be March 4, 1883. Originally claimed priority date is August 10, 1903. DNRC Examination Report for Statement of Claim No. 40B 6655-00, dated January 24, 2007, (see Department file No. 40B 6655-00) notes that the Fergus County Water Resource Survey shows the March 4, 1883, priority date.

18. The historical place of use for Statement of Claim No. 40B 6655-00 consists of a total of 155.00 AC, as modified by Montana Water Court Case No. 40B-126. The historical place of use resides in portions of TWP 15N RGE 20E and TWP 15N Rge 21E, which are in Fergus County. As part of Application to Change Water Right No. 40B 30164213, DNRC analyzed the historical place of use and acreage. Sources utilized by the Department were the 1970 Fergus County Water Resource Survey materials (unpublished), including maps and field notes; Fergus County Water Resources Survey aerial photos MY-3CC-150 and MY-3CC-152, dated September 4, 1962; and USDA aerial photograph No. 378-72, dated July 11, 1980. LLDs and corresponding acreage for the subject right's five historical place of use IDs are provided in **Table 3** below.

Table 3: Historical place of use for Statement of Claim No. 40B 6655-00.

ID	ACRES	Qtr Sec	Sec	TWP	RGE	County
1[A]	3.00	S2SWSW	13	15N	20E	Fergus
2[A]	9.00	S2S2SE	14	15N	20E	Fergus
3[A]	22.00	NENE	23	15N	20E	Fergus
4[A,B]	82.00	N2	24	15N	20E	Fergus
5[B]	39.00	NW	19	15N	21E	Fergus

[A]Place of use associated with Field ID 'West Field'
[B]Place of use associated with Field ID 'East Field'

19. As evidenced in the footnotes of Table 3 above and for the purposes of this document, particularly in calculating historical use, the Department has compartmentalized the 155.00 AC historical place of use into two fields. As can be seen in **Figure 3** (Historical Use Map) below, the two historical fields, West Field (96.00 AC) and East Field (59.00 AC) are separated by an unnamed tributary of North Fork McDonald Creek. Note that although Figure 4 was submitted by the Applicant, the Department has edited the original version. Edits include relabeling of ditches

as well as revising a misidentified “flume” to “culvert.” (The need for these edits is explained in FOF Nos. 25 and 26 below.) Additionally, the historical acreages were revised to reflect the Department found acreages. The acreages have been revised from 95.0 AC and 58.6 AC (cumulatively 153.6 AC) to the Department-found 96.0 AC and 59.0 AC (cumulatively 155.0 AC), respectively. The numerical variances are attributed to differences in GIS projection, drawing tool selection, and/or individual user interpretation.

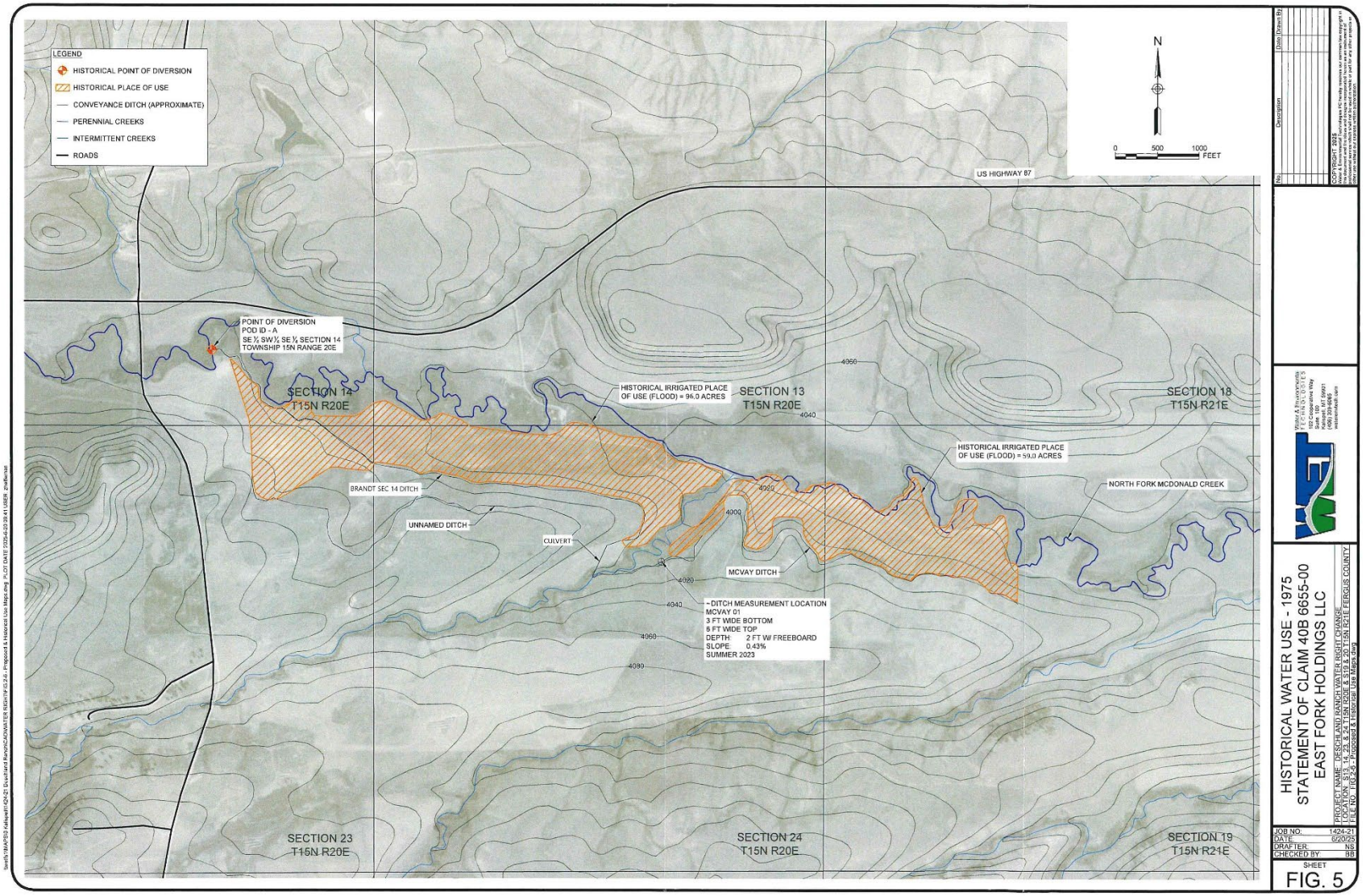

Figure 3: Historical Use Map. Created by WET on June 20, 2025. Edited with additional information by Matthew Shaw of DNRC on October 14, 2025.

20. The Department, using ARM 36.12.1902(16) standards and methodology, finds the historical consumptive use and historical field application volume for the subject right to be 106.86 AF and 178.10 AF, respectively. These figures, as well as variables used by the Department to achieve them, are summarized in **Table 4** below. Variables include the historical acres (155.00 AC); a 5% irrecoverable loss rate, as per ARM 36.12.1902(17)(a); an irrigation water requirement of 15.54 IN for flood irrigation near the Lewistown (Fergus County) Weather Station, as per ARM 36.12.1902(16); a historic management factor of 48.8% for Fergus County, as per ARM 36.12.1902(16); and an on-farm efficiency of 55% for contour ditch (design slope 1.5% to 3%) flood irrigation, as per ARM 36.12.115(2)(e). Note that aside from field acreage, all other variable values are identical for the East and West fields.

Table 4: Historical field consumed and applied volumes for Statement of Claim No. 40B 6655-00.

Field ID	Acres	IWR (IN)[1]	Mgmt. Factor[2] (%)	Field Efficiency (%)	Crop Consumption (AF)	Applied Volume (AF)	IL (AF)	Total Consumed Volume (AF)	Non-Consumed Volume (AF)
West Field	96.00	15.54	48.8	55	60.67	110.31	5.52	66.18	44.12
East Field	59.00	15.54	48.8	55	37.29	67.79	3.39	40.68	27.12
Total	**155.00**	**-**	**-**	**-**	**97.95**	**178.10**	**8.91**	**106.86**	**71.24**

[1]Lewistown IWR Weather Station
[2]Fergus County Historical Use Management Factor (pre-July 1, 1973)

21. Upon review of Department records and the Applicant's testimony, the Department finds no supplemental historical relationships exist between Statement of Claim No. 40K6655-00 and other active water rights.

22. The Department finds the historical means of diversion for Statement of Claim No. 40B 6655-00 to be, as claimed and decreed by the Water Court, a dike on North Fork McDonald Creek. The Applicant attests that the dike was historically used to direct flow toward the ditch (Brandt Sec 14 Ditch) at the point of diversion. Furthermore, the Applicant attests that a headgate and a steel culvert were used in conjunction with the dike to control and regulate the amount of water entering the ditch, particularly during periods of higher streamflow. Utilizing a gravity-fed Pipe Flow Calculator (Szyk) and the Applicant-submitted culvert dimensions of a length of 100 FT; a drop of 2.5 FT; a diameter of 12 IN; and a roughness coefficient of 120, the Department corroborates the Applicant assertion of a 7.07 CFS flow capacity for the historical means of diversion.

23. The point of diversion was claimed to be in the NESWSE Sec 14, TWP 15N RGE 20E Fergus County. However, the third quarter-section LLD was modified by rule under the Department's Claim Examination process to SESWSE Sec 14. (See the DNRC Examination Report, dated January 24, 2007, located within Department file No. 40B 6655-00.) Fergus County Water Resources Survey aerial photos MY-3CC-150 and MY-3CC-152, dated September 4, 1962 and USDA aerial photograph No. 378-72, dated July 11, 1980 support the modification. Accordingly, the Department finds the historical point of diversion to be in the SESWSE Sec 14, TWP 15N RGE 20E Fergus County.

24. The Department finds the historical maximum flow rate for Statement of Claim No. 6655-00 to be the decreed rate of 2.50 CFS; equivalent to the claimed 100 miner's inches.

25. The historical means of conveyance for Statement of Claim No. 40B 6655-00 is by ditch. The Brandt Ditch was identified by the claimant as the ditch used (1980). The ditch name was refined to Brandt Ditch Sec 14 during Preliminary Decree (2011). However, in the Department's Examination Report for Statement of Claim No. 40B 6655-00 (2007), the examinator commented, *"Section 19 acreage appears irrigated from an U.T. [unnamed tributary]; supply ditch originates in the NWSWNE Sec 24 on 1979 Aerial with 1:5840 Grid aligned at the SE corner. Could be disconnected from Brandt Ditch(?)"* Applicant has provided insight that water was historically diverted from the point of diversion, then conveyed through the extent of Brandt Sec 14 Ditch and subsequently conveyed into McVay Ditch before reaching the portion of the place of use in Sec 19 TWP 15N RGE 21E (East Field). An 18 IN steel culvert located in the NWSWNE Sec 24 TWP 15N RGE 20E Fergus County connected the two ditches/transferred water from the Brandt Sec 14 Ditch to McVay Ditch. This culvert was elevated on a trestle, bisecting the unnamed tributary mentioned by the Department examiner but not using the unnamed tributary as an additional source of water. Considering the examination comment, the information supplied by the Applicant, and with support from Water Resource Survey materials and aerial photos, the Department finds that historically both the Brandt Sec 14 Ditch and the McVay Ditch conveyed water appropriated under the subject right. (Supporting sources include the Fergus County Water Resource Survey including maps and field notes, dated July 1970; Fergus County Water Resources Survey aerial photos MY-3CC-150 and MY-3CC-152, dated September 4, 1962; and USDA aerial photograph No. 378-72, dated July 11, 1980.)

26. The Applicant neglected to distinguish between the Brandt Sec 14 and McVay ditches, describing/labeling them in the application materials, collectively, as McVay Ditch. As such the

Applicant-provided ditch dimensions are asserted to be a representative average across both the Brandt Sec 14 Ditch and McVay Ditches.

27. Historically, water appropriated under Statement of Claim No. 6655-00 was conveyed through a total of 9,038 FT of ditch (6,460 FT within the Brandt Ditch and 2,578 FT in the McVay Ditch). The Applicant attests the ditch (meaning Brandt Sec 14 Ditch and McVay Ditch as a collective ditch) has a trapezoidal design with 0.75:1 side slopes; average bottom width of 3 FT and top width of 6 FT; average channel slope of 0.43%; and average depth (excluding freeboard) of 2.0 FT. These dimensions originate from field notes collected by the Applicant in the summer of 2023. Utilizing the Applicant-supplied dimensions and The Open Channel Flow Calculator (Fang), the Department corroborated the Applicant's asserted historical ditch capacity. The Department finds the historical capacity of the ditch to be 31.62 CFS.

28. The 123 days from May 15 to September 15 constitute both the historical period of use and the historical period of diversion for Statement of Claim No. 40B 6655-00. Applicant asserts that typically water was both diverted and used throughout the respective periods, with irrigation of the 96.00 AC West Field and 59.00 AC East Field alternating as conditions dictated. Temporary check dams were utilized to direct flow from ditches onto the fields. The West Field was irrigated an average of 76 days per irrigation season, while the East Field received and used water for the remaining 47 days. Typically, two cuttings were made per irrigation season with crops being primarily alfalfa or pasture grasses.

29. The Department determined conveyance lengths for each of the two historical fields in accordance with *Department Technical Memorandum: Distributing Conveyance Loss on Multiple User Ditches. (February 14, 2020).* The Department finds that the 96.00 AC West Field received water out of the Brandt Sec 14 Ditch, 400 FT from the point of diversion. Water for the East Field was conveyed from the point of diversion through the extent of the Brandt Sec 14 Ditch, continued through the connecting culvert and then into McVay Ditch, before arriving at the East Field. The East Field is assigned a conveyance length of 9,038 FT, which includes the entirety of Brandt Sec 14 Ditch and a portion of the McVay Ditch. Therefore, the Department finds a cumulative historical conveyance length of 9,438 FT.

30. Monthly net evaporation for the historical ditch system is informed by the Department's Gridded Monthly Net Evaporation GIS layer, as provided by the Water Sciences Bureau. Historically, the ditch system was typically utilized throughout the 123-day, May 15 to September 15, period of diversion. To reflect partial-month evaporation in May and September, monthly net evaporation values for these months have been divided into two. The Department finds the period

adjusted net evaporation for the historical period of diversion to be 9.12 IN (0.76 FT). **Table 5** below summarizes the monthly net evaporation.

Table 5: Monthly net evaporation for the historical ditch system within the period of diversion.

Time period	Net evaporation (IN)
May (May 1 to May 15)	0.53 (1.06 / 2)
June	0.52
July	1.51
August	4.40
September (September 1 to September 15)	2.16 (4.13 / 2)
Total	**9.12 (0.76 FT)**

31. Conveyance loss, as calculated by ARM 36.12.1902(10), is the sum of seepage loss, vegetative loss, and ditch evaporation. These components are determined by the following equations:

i. $\text{Seepage Loss}^{A} = \frac{\text{wetted perimeter} \times \text{ditch length} \times \text{ditch loss rate} \times \text{days}}{43{,}560\ \text{ft}^2/\text{acre}}$,

ii. $\text{Vegetation Loss}^{B} = \left(\%\frac{\text{loss}}{\text{mile}}\right) \times \text{flow rate} \times \text{days} \times \text{ditch length} \times 2\ (\text{unit conversion constant})$,

iii. $\text{Ditch Evaporation}^{C} = \frac{\text{ditch surface area} \times \text{evaporation rate}}{43{,}560\ \text{ft}^2/\text{acre}}$.

Values for the variables in these equations (summarized in **Table 6** below) include a total conveyance length of 9,438 FT, apportioned amongst the East and West Fields; the full flow rate of 2.50 CFS, as applied to each field historically; an estimated average ditch width of 4.0 FT when carrying 2.50 CFS, which results in a wetted perimeter of 4.14 FT; a ditch loss rate of 0.55 FT3/FT2/day for clay, clay loam, and silty clay loam, as per page 3 of *DNRC Memorandum: Development of standardized methodologies to determine Historic Diverted Volume*, dated September 13, 2012; 123-days of irrigation, apportioned amongst the East and West Fields as typically historically used; and 0.76 FT of seasonal evaporation, informed by DNRC's Gridded Net Evaporation GIS layer and apportioned amongst the East and West Fields as typically historically used. Thus, the Department finds the total historical conveyance loss for Statement of Claim No. 40B 6655-00 to be 27.29 AF.

Table 6: Historical conveyance loss for Statement of Claim No. 40B 6655-00.

Ditch ID	Wetted P[A] (FT)	Avg. Width (FT)	Flow Rate (CFS)	Ditch Loss Rate[B] (FT^3/FT^2/day)	Period Adj. Evap.[C] (FT)	Length (FT)	Days Irrigated	Seepage Loss (AF)	Vegetation Loss (AF)	Ditch Evap. (AF)	Conveyance Loss (AF)

West Field (96.00 AC)	4.14	4.0	2.50	0.55	0.47	400	76	1.59	0.22	0.02	1.83
East Field (59.00 AC)	4.14	4.0	2.50	0.55	0.29	9,038	47	22.20	3.02	0.24	25.46
Total	**-**	**-**	**-**	**-**	**0.76**	**9,438**	**123**	**23.79**	**3.24**	**0.26**	**27.29**

[A]Wetted perimeter (P) based on approximate channel geometry from field measurements, while conveying flow rate of 2.50 CFS.
[B]Ditch loss rate based on Web Soil Survey results and NEH standards 1993: clay, clay loam, silty clay loam.
[C]Period adjusted evaporation = (No. of Days Irrigated / 123-day irrigation season) * seasonal evaporation of 0.76 FT

32. Per Department standard practice, the diverted volume is the sum of the field application volume and the calculated conveyance loss. **Table 7** below reveals the Department found total historical diverted volume of 205.39 AF.

Table 7: Historical diverted volume for Statement of Claim No. 40B 6655-00.

Field ID	Field Application Volume (AF)	Conveyance Loss Volume (AF)	Diverted Volume (AF)
West Field	110.31 AF	1.83	112.14
East Field	67.79	25.46	93.25
Total	**178.10**	**27.29**	**205.39**

33. The Department finds the following historical use, as shown in **Table 8** below.

Table 8: Summary of historical use findings for Statement of Claim No. 40B 6655-00.

Water Right No.	Priority Date	Diverted Volume (AF)	Flow Rate (CFS)	Purpose (Total Acres)	Consumptive Use (AF)	Place of Use[A]	Point of Diversion
40B 6655-00	3/4/1883	205.39	2.50	Irrigation, flood (155.00)	106.86	S2SWSW Sec 13 TWP 15N RGE 20E; S2S2SE Sec 14 TWP 15N RGE 20E; NENE Sec 23 TWP 15N RGE 20E; N2 Sec 24 TWP 15N RGE 20E; NW Sec 19 TWP 15N RGE 21E	SESWSE Sec 14 TWP 15N RGE 20E Fergus County

[A]All LLDs associated with Statement of Claim No. 40B 6655-00's historical place of use are within Fergus County.

ADVERSE EFFECT

FINDINGS OF FACT

34. Change elements under Application to Change Water Right No. 40B 30164213 include a proposed (partial) change to the place of use and a proposed change in (an addition of a) place of storage for Statement of Claim No. 40B 6655-00.

35. Application to Change Water Right No. 40C 30164213 seeks to utilize the historically diverted flow rate of 2.50 CFS and the historically diverted volume of 205.39 AF. The proposed place of use will utilize the historically consumed volume of 106.86 AF.

36. Utilizing Statement of Claim No. 40B 6655-00's historical point of diversion; historical flow rate; and historical periods of use and diversion, Applicant proposes to flood irrigate a total of 70.65 AC.

37. While the Applicant is not changing the historical point of diversion, the means of diversion is proposed to change from a dike to a pump.

38. In proposed use narrative for Application to Change Water Right No. 40B 30164213, the proposed appropriation and beneficial use of water for Statement of Claim No. 40B 6655-00 was described by the Applicant as two separate "irrigation scenarios." Henceforth, and for the purposes of this document, the Department will refer to these as Irrigation Scenario No. 1 and Irrigation Scenario No. 2.

39. Irrigation Scenario No. 1 pertains to the gated-pipe irrigation of 53.25 AC within the historical footprint. Irrigation Scenario No. 2 involves a proposed place of storage and subsequent graded border irrigation (design slope 0.75% to 1.5%) of 17.40 AC outside the historical footprint.

40. Irrigation Scenario No. 1 consists of gated-pipe flood irrigation of a 53.25 AC field that lies within the historical footprint. Water will be conveyed from the point of diversion to the Scenario 1 field via 9,038 FT of 10 IN PVC pipe. Pump specifications and a pipeline diameter of 10 IN in that portion of the irrigation system will allow the Scenario 1 field to receive the full historical flow rate of 2.50 CFS. While the initial irrigation outlet for the Scenario 1 field occurs in 10 IN pipe, downstream of that initial outlet, the pipeline system transitions to 8 IN diameter pipe. At regular intervals, approximately 200 FT apart, along the pipeline adjacent to the Scenario 1 field, a series of tee fittings with gated valves (or similar manually operated valves) will be installed. Irrigation Scenario No. 1 will utilize natural topography to gravity-feed flood irrigate the 53.25 AC field. The Irrigation Scenario No. 1 field is in E2NE Sec 24 TWP 15N RGE20E Fergus County and NW Sec 19 TWP 15N RGE 21E Fergus County.

41. Irrigation Scenario No. 2 involves a proposed place of storage and subsequent flood irrigation (graded border irrigation with design slope 0.75% to 1.5%) of 17.40 AC outside of the historic footprint, utilizing water pumped from the proposed place of storage. (The proposed place of storage is described in FOF Nos. 45—53 below.) Water ultimately applied to Irrigation Scenario No. 2 acreage will first be conveyed from the point of diversion to the proposed place of storage

through a 15,952 FT PCV pipeline system (9,038 FT of 10 IN diameter PCV pipe, plus 6,914 FT of 8 IN diameter PCV). The conveyed water will then be stored in the proposed place of storage. Water will enter the proposed place of storage at a flow rate of 1.9 CFS. Stored water will then be pumped (secondary mobile pump) at a rate of 1.1 CFS from the proposed place of storage to the Scenario 2 acreage via approximately 175 FT of 3 IN pipeline or hose (approximated due to mobile pump). The Department will consider the mobile pump in the place of storage as a secondary point of diversion. The 17.40 AC associated with Irrigation Scenario No. 2 is in the SENE Sec 19 TWP 15N RGE 21E Fergus County and SWNW Sec 20 TWP 15N RGE 21E Fergus County.

42. Utilizing GIS, the Department corroborates the Applicant assertion that 53.25 AC of proposed irrigation (the same 53.25 AC corresponding to Irrigation Scenario No. 1) is within the historical footprint and that 17.40 AC (the same 17.40 AC corresponding to Irrigation Scenario No. 2) is outside of the historical footprint.

43. Irrigation Scenarios Nos. 1 and 2 are proposed to operate nonconcurrent to one another. System limitations, including unique hydraulic conditions within the project area and pipeline configuration (namely diameter reductions downstream), preclude concurrent operation.

44. Up to 56 days of irrigation are proposed for each of the two irrigation scenarios, totaling up to 112 days of irrigation per season. The 112 days are proposed to be utilized within the unchanging historical 123-day period of use from May 15 to September 15.

45. Applicant proposes a place of storage (onstream reservoir) on an ephemeral unnamed tributary of North Folk McDonald Creek in S2SENE Sec 19 TWP 15N RGE 21E Fergus County and NWSWSWNW Sec 20 TWP 15N 21E Fergus County. The Department finds there are no water rights on the ephemeral unnamed tributary of North Fork McDonald Creek, downstream of the proposed place of storage location.

46. Corrugated steel culverts (18 IN diameter) with headgates are proposed as part of the design of each of the three reservoirs which comprise the proposed place of storage. The Department finds that the culvert-headgate combinations will, in part, provide a means for the Applicant to ensure that the natural water within the ephemeral drainage is not retained within the proposed place of storage. This ensures that there would be no expansion of the subject right resulting from the retention (and subsequent secondary diversion) of water from the ephemeral unnamed tributary.

47. The proposed place of storage consists of three adjacent reservoirs (or dams), managed as a collective storage system. Water in the place of storage will be pumped out to irrigate the

Irrigation Scenario No. 2 acreage. The three dams comprising the proposed place of storage each have a height of 9 FT and maximum reservoir depth of 8 FT. Corrugated steel culverts (18 IN diameter) with headgates are proposed to be installed to drain the reservoirs, transfer water between the reservoirs, and ensure that the natural water within the drainage is not diverted. Riprapped spillways will be utilized to mitigate the potential of catastrophic failure.

48. Applicant proposes a 123-day period of storage, synchronized with Statement of Claim No. 40B 6655-00's unchanging historical period of use and period of diversion, May 15 to September 15. The proposed place of storage will be periodically topped off or replenished throughout the period of storage as water is pumped out for the 17.40 AC associated with Irrigation Scenario No. 2. Because the irrigation scenarios cannot occur simultaneously, the place of storage will only be filled when the 53.25 AC Irrigation Scenario No. 1 field is not being irrigated. The Applicant estimates up to 56 days may be required to irrigate the Scenario 1 field. As such, the remaining 56 days of the proposed 112 irrigation days will be available to fill, replenish, and/or maintain the water level in the proposed place of storage.

49. The Department finds capacity of the proposed place of storage to be 6.48 AF (1.62 AC surface area x 4.0 FT average depth = 6.48 AF). **Table 9** below summarizes the proposed place of storage and reveals a total volume of 7.71 AF for the period of storage. (Methodology behind the Department-calculated storage evaporation and surface area are provided in FOF Nos. 50 and 51.)

Table 9: Proposed reservoir summary.

Storage Evaporation[1] (AF)	Reservoir Surface Area (AC)	Reservoir Capacity (AF)	Total Volume (AF)
1.23	1.62	6.48	7.71

[1]Informed by DNRC Water Science Bureau's Gridded Monthly Net Evaporation GIS layer

50. Monthly net evaporation for the proposed place of storage is informed by the Department's Gridded Monthly Net Evaporation GIS layer, as provided by the Water Sciences Bureau. As a conservative approach, the proposed place of storage is assumed to be full or filling throughout the 123-day May 15 to September 15 proposed period of storage. To reflect partial-month evaporation in May and September, monthly net evaporation values for these months have been divided into two. The Department finds the period adjusted net evaporation for the proposed period of storage to be 9.12 IN (0.76 FT). **Table 10** below summarizes the monthly net evaporation.

Table 10: Monthly net evaporation for the proposed place of storage within the proposed period of storage.

Time period	Net evaporation (IN)

May (May 1 to May 15)	0.53 (1.06 / 2)
June	0.52
July	1.51
August	4.40
September (September 1 to September 15)	2.16 (4.13 / 2)
Total	**9.12 (0.76 FT)**

51. Department standard practice for calculating surface area uses the following equation:

$$Surface\ Area\ (AC) = \frac{Length\ (FT)\ X\ Width\ (FT)}{43{,}560(FT^2/AC)}$$

As **Table 11** below shows, surface areas and subsequent evaporation volumes, have been tabulated for each of the three dams comprising the proposed place of storage, prior to being totaled. The volume of evaporative loss ("storage evaporation" in Table 11) is based on surface area and net evaporation. The Department standard practice for calculating volumetric evaporation loss from reservoirs uses the following equation:

$$Evaporation\ (AF) = Surface\ Area\ (Acres)\ X\ \frac{Net\ Evaporation\ (in)}{12\ (in)}$$

Utilizing a seasonally adjusted net evaporation value of 9.12 IN (0.76 FT) for the purposed period of storage of May 15 to September 15, the Department finds the evaporative loss volume for the proposed place of storage to be 1.23 FT.

$$1.23\ AF = 1.62\ AC\ X\ \frac{9.12\ (in)}{12\ (in)}$$

Table 11: Storage evaporation, by dam.

Evaporation:	Average width (FT)	Length (FT)	Surface area (AC)	Average depth (FT)	Capacity (AF)	Seasonal evaporation[A] (FT)	Storage evaporation (AF)
Dam 1	41.9	685	0.66	4.0	2.64	0.76	0.50
Dam 2	51.0	495	0.58	4.0	2.32	0.76	0.44
Dam 3	33.4	495	0.38	4.0	1.52	0.76	0.29
Total	**42.1**	**1,675**	**1.62**	**4.0**	**6.48**	**0.76**	**1.23**

[A]Seasonal evaporation based on the 123-day purposed period of storage from May 15 to September 15 and is informed by DNRC's Gridded Monthly Net Evaporation GIS layer. All dams are assumed to be full or filling throughout the purposed period of storage.

52. The Department, as per the statutory definition of a change in appropriation right (MCA 85-2-102(7)(b)), does not consider a change in method of irrigation when calculating the proposed consumptive and field applied volumes on acreage that was historically irrigated by a given water right. Thus, as per Table 1 of ARM 36.12.1902(16)(g), a historical (1964-1973) management factor of 48.4% for Fergus County; an on-farm efficiency of 55% for contour ditch irrigation with a design slope of 1.5% to 3%; and an IWR of 15.54 IN for flood irrigation near Lewistown Weather Station, Fergus County, were used in calculating the proposed diverted volumes and consumptive use for the 53.25 AC of proposed flood irrigation which lie inside the historically flood-irrigated footprint. While the Lewistown Weather Station flood IWR of 15.54 IN carries over for the 17.40 AC of proposed flood irrigation outside of the historical footprint, that acreage is subject to a modern (1997-2006) management factor of 68.3% and an on-farm efficiency value of 65% for graded border flood irrigation with design slope 0.75% to 1.5%. **Table 12** below summarizes the variables used to calculate the total proposed consumptive use for each irrigation scenario. Note that evaporative storage loss for the proposed place of storage is included in Irrigation Scenario No. 2's total consumed volume. The Department, using ARM 36.12.1902(16) and standard methodology finds the total proposed consumptive use of 54.63 AF to be 52.23 AF less than the historical consumptive use of 106.86 AF. Thus, the Department finds no expansion of Statement of Claim No. 40B 6655-00 will occur regarding consumptive use.

Table 12: Proposed consumed and field applied volumes for Statement of Claim No. 40B 6655-00.

Irrigation Scenario/ Method	Location relative to Hist. footprint	Acres	IWR (in)[1]	Mgmt. Factor (%)	Field Efficiency (%)	Crop Consumption (AF)	Applied Field Volume (AF)	IL (AF)	Storage Evap. Loss (AF)	Total Consumed Volume (AF)	Non-Consumed Volume (AF)
Scenario 1 /Gated pipe flood	Inside historical footprint	53.25	15.54	48.8[2]	55	33.70	61.20	3.10	-	36.80	24.40
Scenario 2 /Graded border (design slope 0.75% to 1.5%)	Outside historical footprint	17.40	15.54	68.3[3]	65	15.40	23.70	1.20	1.23	17.83	5.87
Total	**-**	**70.65**	**-**	**-**	**-**	**49.10**	**84.90**	**4.30**	**1.23**	**54.63**	**30.27**

[1]Lewistown IWR Weather Station
[2]Fergus County Historical Use Management Factor (pre-July 1, 1973)
[3]Fergus County Proposed Use Management Factor (1997-2006)

53. In addition to evaporative losses, the Department calculated seepage loss for the proposed place of storage. Seepage loss (as well as evaporative loss) associated with the proposed place of storage are attributed entirely to Irrigation Scenario No. 2. However, in contrast to the 56 days of pumping/pipeline flow proposed for Irrigation Scenario No. 2, and to be conservative, seepage loss for the proposed place of storage is assigned the full 123-day period

of storage. The Department finds the total seepage loss for the proposed place of storage to be 61.77 AF, as seen in **Table 13** below.

Table 13: Seepage loss for proposed place of storage, by dam.

Seepage loss:	Average wetted perimeter (FT)	Length (FT)	Seepage loss rate[A] (FT^3/FT^2/day)	Days full[B]	Seepage loss (AF)
Dam 1	43.22	685	0.30	123	25.08
Dam 2	52.15	495	0.30	123	21.87
Dam 3	35.35	495	0.30	123	14.82
Total	**43.6**	**1,675**	**0.30**	**123**	**61.77**

[A]Loss rate based on Web Soil Survey results (NEH standards 1993): clay, clay loam, silty clay loam.
[B]All dams are assumed to be full or filling throughout the purposed period of storage.

54. Applicant proposes conveying water from the unchanging historical point of diversion, via enclosed PVC pipeline, to either the Irrigation Scenario No. 1 field or to the proposed place of storage (which ultimately services Irrigation Scenario No. 2 acreage).

55. Applicant proposes installing 13,726 FT of the proposed 15,952 FT pipeline system within the existing channels of the Brandt and McVay Ditches. Note that the Applicant is not proposing abandonment of Brandt and McVay Ditches, but rather a repurposing.

56. Citing, *Department Technical Memorandum: Development of standardized methodologies to determine Historic Diverted Volume. (September 13, 2012*)), Applicant-supplied proposed use calculations include a pipeline seepage loss rate of $0.2ft^3/ft^2$/day for the entirety of the proposed 15,952 FT pipeline system. The Department finds Applicant's anticipation of potential pipeline seepage reasonable and factored the 0.2 FT^3/FT^2/day seepage loss rate into DNRC's Technical Analyses.

57. Pipeline conveyance lengths for each of the two proposed fields were determined in accordance with *Department Technical Memorandum: Distributing Conveyance Loss on Multiple User Ditches. (February 14, 2020).* The Department finds conveyance to the Irrigation Scenario No. 1 field includes 9,038 FT of 10 IN pipeline with a flow rate of 2.50 CFS. Likewise, DNRC finds Irrigation Scenario No. 2 acreage has a total pipeline conveyance length of 15,952 FT; 9,038 FT of 10 IN pipe at 2.50 CFS flow rate, plus an additional 6,914 FT of 8 IN pipe (the latter connecting the 10 IN segment to the place of storage). The 6,914 FT of 8 IN pipe is limited to a flow rate of 1.90 CFS. (Rationale regarding flow rate limitations at various portions of the proposed pipeline system is provided in FOF Nos. 77—79.)

58. Within the 123-day period of diversion (unchanging from historical), the Applicant proposes 112 days of conveyance (also described by Applicant as pumping or flow). In calculating conveyance loss, each of the Applicant's two irrigation scenarios are attributed 56 of the 112 days.

59. The Department finds conveyance loss associated with Irrigation Scenario No. 1 to be 6.08 AF, as seen in **Table 14** below. Similarly, **Table 15** summarizes conveyance loss for Irrigation Scenario No. 2 at 9.80 AF (6.08 AF + 3.72 AF). Thus, the Department finds the cumulative proposed conveyance loss to be 15.88 AF (6.08 AF + 9.80 AF), with all proposed conveyance loss attributed to pipeline seepage.

Table 14: Summary of conveyance loss associated with Irrigation Scenario No. 1.

Pipeline seepage loss:	Pipeline wetted perimeter[A] (FT)	Pipeline length (FT)	Seepage loss rate[B] ($FT^3/FT^2/day$)	Days flowing[C]	Seepage loss (AF)
10 IN pipeline	2.62	9,038	0.20	56	6.08

[A]Wetted perimeter: Perimeter of 10 IN pipe, conveying a flow rate of 2.5 CFS. Full-pipe flow is assumed and the equation used is $P = 2\pi r$ where P is the wetted perimeter and *r* is the pipeline radius.
[B]Seepage loss rate: based on *DNRC Memorandum: Development of standardized methodologies to determine historic diverted volume,* dated September 13, 2012
[C]Days flowing: Period of use is 123 days between May 15 to September 15; 56 days allowed to cover the proposed field.

Table 15: Summary of conveyance loss associated with Irrigation Scenario No. 2.

Pipeline seepage loss:	Pipeline wetted perimeter[A] (FT)	Pipeline length (FT)	Seepage loss rate[B] ($FT^3/FT^2/day$)	Days flowing[C]	Seepage loss (AF)
10 IN pipeline	2.62	9,038	0.20	56	6.08
Pipeline seepage loss	**Pipeline wetted perimeter (FT)**	**Pipeline length (FT)**	**Seepage loss rate[1] ($FT^3/FT^2/day$)**	**Days flowing**	**Seepage loss (AF)**
8 IN pipeline	2.09	6,914	0.20	56	3.72

[A]Wetted perimeter: Perimeter of 10 IN pipe, conveying a flow rate of 2.50 CFS; 8 IN pipe conveying 1.90 CFS. Full-pipe flow is assumed and the equation used is $P = 2\pi r$ where P is the wetted perimeter and *r* is the pipeline radius.
[B]Seepage loss rate: based on *DNRC Memorandum: Development of standardized methodologies to determine historic diverted volume,* dated September 13, 2012
[C]Days flowing: Period of use is 123 days between May 15 to September 15; 56 days allowed to cover the proposed field.

60. DNRC calculated proposed diverted volume by summing the proposed field application volumes (84.90 AF) and proposed cumulative losses (78.88 AF). The Department finds the proposed diverted volume to be 163.78 AF, as **Table 16** below attests. The proposed diverted volume of 163.78 AF is a reduction of 41.61 AF from the historical diverted volume of 205.39 AF. Thus, the Department finds that no expansion of Statement of Claim No. 40B 6655-00 will occur regarding diverted volume.

Table 16: Proposed diverted volume, by irrigation scenario.

Field ID	Conveyance Losses (AF)	Storage Losses (AF)	Cumulative Losses (AF)	Field Application Volume (AF)	Diverted Volume (AF)

Irrigation Scenario No. 1	6.08	N/A	6.08	61.20	67.28
Irrigation Scenario No. 2	9.80	63.0	72.80	23.70	96.50
Total	**15.88**	**63.00**	**78.88**	**84.90**	**163.78**

61. The Department finds the proposed use of Statement of Claim 40B 6655-00 to include the elements listed in **Table 17** below:

Table 17: Summary of proposed use of Statement of Claim No. 40B 6655-00.

Water Right No.[1]	Priority Date[1]	Diverted Volume (AF)	Flow Rate[1] (CFS)	Purpose[1] (Total Acres)	Consumptive Use (AF)	Place of Use[2]	Point of Diversion[1]
40B 6655-00	3/4/1883	163.78	2.50	Irrigation, flood (70.65)	54.63	E2NE Sec 24 TWP 15N RGE 20E; NW Sec 19 TWP 15N RGE 21E; SENE Sec 19 TWP 15N RGE 21E; SWNW Sec 20 TWP 15N RGE 21E	SESWSE Sec 14 TWP 15N RGE 20E Fergus County

[1]Unchanged from historical.
[2]All proposed places of use are in Fergus County.

62. The Department finds no change to the historical timing of diversion. DNRC finds the historical pattern of diversion will change in so far as the place of use is proposed to change.

63. The Department finds historical return flows total 71.2 AF from 155.0 AC of irrigation. The Department finds the starting point of return flows would be to North Fork McDonald Creek downstream of the western boundary of SESWSE Sec 14, TWP 15N, RGE 20E Fergus County. Under the proposed change, the Department finds return flows would be equal to 31.6 AF from 70.65 AC of irrigation and would accrue to North Fork McDonald Creek beginning at the eastern boundary of NWNENE Sec 24, TWP 15N, RGE 20E Fergus County. Locations of both historical and proposed return flows are provided in **Figure 4** below.

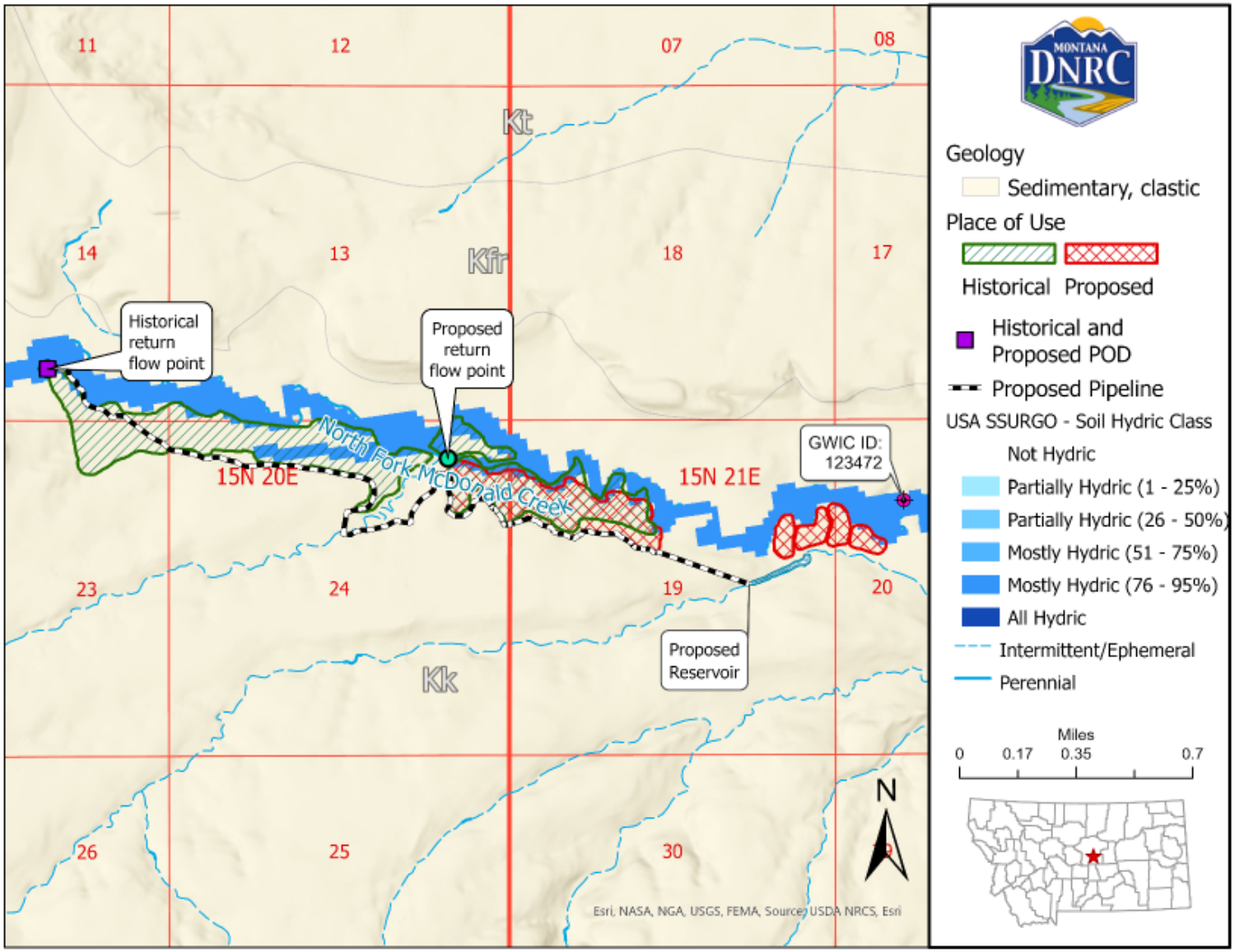

Figure 4: Location of historical and proposed irrigation and return flows. Created by Jack Landers, Groundwater Hydrologist, DNRC as part of *Surface Water Change Technical Analyses Report-Part B Application No. 40B 30164213.*

64. Under the proposed change, return flows would enter back into the source where they have historically returned upstream of the next downstream appropriator. In addition, the Applicant proposes to leave 41.61 AF of the historical diverted non-consumed volume instream at the historical point of diversion. Therefore, the Department finds that an analysis of rate and timing of return flows was not warranted.

65. The Department finds that the proposed diverted non-consumed volume to be left instream at the historical point of diversion, 41.61 AF, is sufficient to offset the 40.97 AF reduction in return flows that will result under Application to change Water Right No. 40B 30164213.

66. Applicant asserts that no adverse effect will be caused by the proposed change. According to the Applicant, Statement of Claim No. 40B 6655-00 has been in a period of nonuse since 2011, when the landowner's father passed away and operations were put on hold. Applicant asserts that the proposed change to the subject right will not adversely affect other water users as Statement of Claim No. 40B 6655-00 is proposed to be used in largely the same manner as it was historically with no proposed increase in historically diverted volume, consumed volume, or flow rate. Applicant attests to having no knowledge of call being made on the source of supply. Applicant further asserts that there is no other water right holders on the Brandt Section 14 Ditch or the McVay Ditch that will be affected by the change. Applicant's stated plan for ensuring existing water rights will be satisfied in times of water shortage and/or responding to call being made is to turn off the pump at the point of diversion. The Department finds Applicant's assertions accurate by a preponderance of evidence and the response to call plan to be reasonable.

67. The Department finds that no active water rights will become comingled with nor supplemental to Statement of Claim No. 40B 6655-00 because of Application to Change Water Right No. 40B 30164213.

68. In Applicant's *Technical Memorandum: Application to Change a Water Right Technical Analyses Addendum – Application, dated June 20, 2025,* (submitted as part of deficiency response), the Applicant states that two active water rights have places of use, "located within the same general vicinity," as the subject right. Both water rights, Statement of Claim Nos. 40B 11706-00 and 40B 11709-00, are for livestock direct from surface water sources: North Fork McDonald Creek and Horsethief Coulee, respectively. The Department finds that following the proposed change, the place of use for the subject right and for Statement of Claim No. 40B 11709-00 will be adjacent but not overlapping. Furthermore, the Department finds that because of the change, the subject right and Statement of Claim No. 40B 11706-00 will both have place of use LLDs in the NE Sec 19 and NW Sec 20 TWP 15N RGE 21E Fergus County, with the subject right's places

of use refined to two quarter sections, SENE Sec 19 and SWNW Sec 20. As a livestock direct from source water right, the place of use for Statement of Claim No. 40B 11706-00 occurs within the surface water body itself. As such, the Department finds that Statement of Claim No. 40B 11706-00 should not be considered overlapping with the proposed place of use for the irrigation purpose subject right. The Department finds that no active water rights will become overlapping, supplemental, or comingled with Statement of Claim No. 40B 6655-00 because of Application to Change Water Right No. 40B 30164213.

69. The Department finds that no other water rights will be impacted because of this change due to the location, rate, and timing of return flows remaining the same as they have historically.

70. The Department finds the proposed change will not adversely affect the use of existing water rights of other persons or other perfected or planned uses or developments for which a permit or certificate has been issued or for which a state water reservation has been issued.

BENEFICIAL USE

FINDINGS OF FACT

71. Statement of Claim No. 40B 6655-00 will retain its purpose of irrigation of agricultural crops. Irrigation is identified as a beneficial use in § 85-2-102(4)(a), MCA. The Applicant proposes to appropriate 163.78 AF of water at the historical maximum flow rate of 2.50 CFS. The Department finds the proposed flow rate and volume to be both a reasonable and beneficial use of water for 70.65 AC of flood irrigation. (Methodology for calculating for the proposed diverted volume can be found in FOF Nos. 50 and 51; 53—60 above.)

ADEQUATE DIVERSION

FINDINGS OF FACT

72. The proposed irrigation system for Application to Change Water Right No. 40B 30164213 will operate using two pumps. The primary pump, located at the point of diversion on North Fork McDonald Creek, is responsible for delivering water, alternately, to either to the 53.25 AC field (Irrigation Scenario No. 1) or the proposed place of storage. A smaller and mobile secondary pump will be used to supply water from the proposed place of storage to the 17.40 AC of graded border irrigation (Irrigation Scenario No. 2).

73. The proposed secondary point of diversion is a mobile pump capable of operating within the entirety of the 1.62 acre proposed place of storage. Although the proposed place of storage is predominantly located in S2SENE Sec 19 TWP 15N RGE 21E Fergus County, a portion (0.25 AC) resides in the NWSWSWNW Sec 20 TWP 15N RGE 21E Fergus County.

74. The Applicant proposes a PCV pipeline system which will convey water, alternately, to the Irrigation Scenario No. 1 field and the proposed place of storage. Of the 15,952 feet of PVC pipeline from the point of diversion to the proposed place of storage, 9,038 FT will be 10 IN diameter pipe and the remaining 6,914 FT will be 8 IN diameter. From the proposed place of storage, the secondary pump will convey water approximately 175 FT (approximate due to mobile pump) through 3 IN diameter pipe or hose to the Irrigation Scenario No. 2 acreage.

75. On October 23, 2025, DNRC LRO received a *Ditch and Waterline Easement Agreement*, dated July 29, 2025. The easement agreement is between McDonald Creek Holdings LLC (of which Applicant is a subsidiary) and Boyce, Inc. The easement agreement, in part, attests that Applicant (McDonald Creek Holdings LLC) has, *"historically maintained a water ditch crossing BOYCE PROPERTY."* (BOYCE PROPERTY being Tract 2 of Certificate of Survey 1199, which is in N2 Sec 24 TWP 15N RGE 20E Fergus County.) Furthermore, Boyce, Inc. agrees to provide Applicant, *"an Easement to accommodate continued use of a water ditch and the construction, use and maintenance of the [proposed] waterline."* **Figure 5** below shows the ingress/egress routes (Nos. 1 & 2) in Sec 24 TWP 15N RGE 20E Fergus County, which Boyce, Inc. grants to Applicant. Note that the Boyce, Inc. parcel extends further north (into Sec 13 TWP 15N RGE 20E) than shown in Figure 2. The Proposed Use Map (FOF No. 14/Figure 2 above) provides the entirety of the Boyce, Inc. property in relation to the proposed irrigation project.

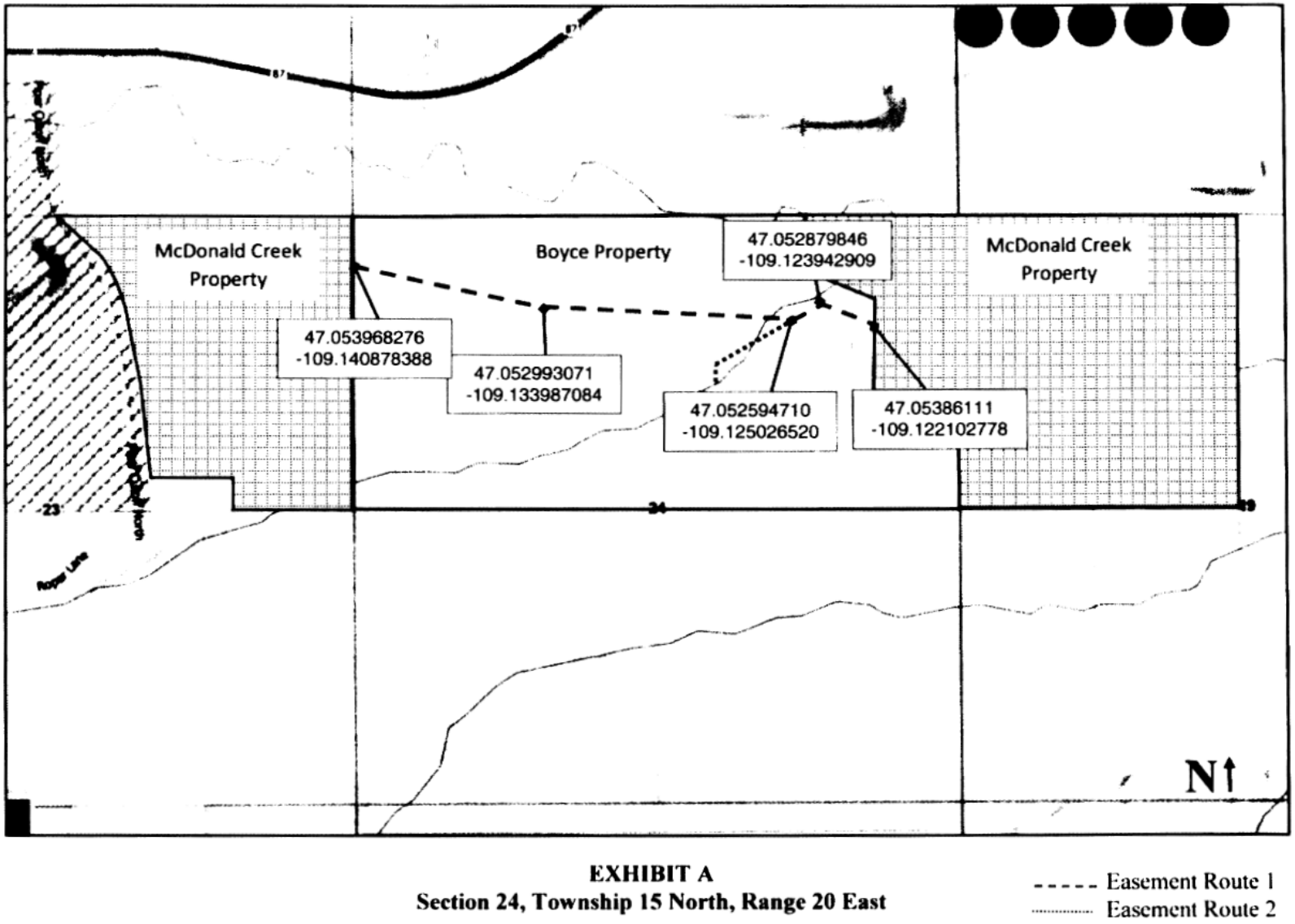

Figure 5: Ditch and Waterline Easement Agreement ingress/egress routes. (Exhibit 'A' of *Ditch and Waterline Easement Agreement* dated July 29, 2025.)

76. The Applicant proposes to divert water from North Fork McDonald Creek with a 15hp Cornell 5WBH-Close Coupled (CC) centrifugal pump (the primary pump). Pump manufacturer specifications indicate the Cornell 5WBH-CC has a maximum flow rate of 1,600 GPM (3.57 CFS) and a best efficiency point flow of 1,160 GPM (2.58 CFS).

77. The Department finds that under the hydraulic conditions associated with Irrigation Scenario No. 1, the primary pump can deliver 2.5 CFS (1,120 GPM), which is the requested maximum flow rate. Hydraulic conditions associated with Irrigation Scenario No. 1 include water being conveyed through 9,038 FT of 10 IN PVC pipeline; one or more of the irrigation risers along the 53.25 AC field being opened; the isolation valve leading to the proposed place of storage being closed; and a total dynamic head of 43.1 FT.

78. As part of Irrigation Scenario No. 2, the primary pump and the pipeline system are used to fill the proposed place of storage. In this configuration, all irrigation outlets are closed and the valve near the proposed place of storage is opened. The Applicant asserts that as water travels through the entire 15,952 FT pipeline system (including both 10 IN and 8 IN PVC segments), a higher head condition will result due to greater distance and additional friction. Furthermore, the Applicant asserts that at a total dynamic head of 51.4 feet, the primary pump can be expected to deliver water to the proposed place of storage at a flow rate of approximately 1.9 CFS (853 GPM). The Department finds the Applicant's assertions credible.

79. The Applicant proposes a secondary diversion (secondary pump) which would pump water from the proposed place of storage to the 17.40 AC associated Irrigation Scenario No. 2. The secondary pump is proposed to be a 20hp Cornell 3RB-CC centrifugal pump. The secondary pump will be mobile (within the three dams comprising the proposed place of storage) and trailer-mounted. Pump manufacturer specifications indicate the Cornell 3RB-CC has a maximum flow rate of 710 GPM (1.58 CFS) and a best efficiency point flow of 550 GPM (1.23 CFS). The Applicant asserts that under the hydraulic conditions present at the proposed place of storage, the secondary pump can deliver approximately 1.1 CFS (510 GPM). Hydraulic conditions associated with the use of the secondary pump include water being conveyed through approximately 175 FT of 3 IN diameter PVC pipeline or hose and a total dynamic head of approximately 105 FT. The Department finds the secondary pump capable of diverting the 1.1 CFS needed to service the 17.40 AC associated with Irrigation Scenario No. 2.

80. The 10 IN diameter PVC pipeline segment extends 9,038 FT from the point of diversion to shortly past the upstream extent of the 53.25 AC Irrigation Scenario No. 1 field. The pipeline diameter then transitions to a 6,914 FT segment of 8 IN diameter PVC pipeline which conveys water to the proposed place of storage. This transition will be accomplished using a PVC reducer coupling specifically designed to connect the two pipe sizes. Immediately upstream of the diameter transition point, a tee fitting with a gate valve will be installed to serve as an outlet to the 53.25 AC Irrigation Scenario No. 1 field. When flood irrigation of the 53.25 AC field is required (Irrigation Scenario No. 1), the valve can be opened to allow water to discharge from the pipeline. When the 53.25 AC field is not irrigated (meaning Irrigation Scenario No. 2 is in effect), the valve will remain closed, allowing water to continue through the pipeline toward the proposed place of storage.

81. Based on proposed diversionary system specifications and additional information provided in the application materials, the Department finds the proposed means of diversion, conveyance systems, and operation of the new diversion works are adequate for the proposed beneficial use of 2.50 CFS flow rate and 163.78 AF diverted volume.

POSSESSORY INTEREST

FINDINGS OF FACT

82. The Applicant signed the affidavit on the application form affirming the Applicant has possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use. (See Department file for Application to Change Water Right No. 40B 30164213.)

83. Water Right Ownership Update Form (Form 608), received by DNRC LRO on November 3, 2025, and later assigned Water Right Ownership Update ID No. 279637, transferred ownership of Statement of Claim No. 40B 6655-00 from East Fork Holdings LLC (Applicant) to McDonald Creek Holdings LLC. East Forks Holdings LLC is a subsidiary of McDonald Creek Holdings LLC.

CONCLUSIONS OF LAW

HISTORICAL USE AND ADVERSE EFFECT

84. Montana's change statute codifies the fundamental principles of the Prior Appropriation Doctrine. Sections 85-2-401 and -402(1)(a), MCA, authorize changes to existing water rights, permits, and water reservations subject to the fundamental tenet of Montana water law that one may change only that to which he or she has the right based upon beneficial use. A change to an existing water right may not expand the consumptive use of the underlying right or remove the

well-established limit of the appropriator's right to water actually taken and beneficially used. An increase in consumptive use constitutes a new appropriation and is subject to the new water use permit requirements of the MWUA. *McDonald v. State*, 220 Mont. 519, 530, 722 P.2d 598, 605 (1986) (beneficial use constitutes the basis, measure, and limit of a water right); *Featherman v. Hennessy*, 43 Mont. 310, 316-17, 115 P. 983, 986 (1911) (increased consumption associated with expanded use of underlying right amounted to new appropriation rather than change in use); *Quigley v. McIntosh*, 110 Mont. 495, 103 P.2d 1067, 1072-74 (1940) (appropriator may not expand a water right through the guise of a change – expanded use constitutes a new use with a new priority date junior to intervening water uses); *Allen v. Petrick*, 69 Mont. 373, 222 P. 451(1924) ("quantity of water which may be claimed lawfully under a prior appropriation is limited to that quantity within the amount claimed which the appropriator has needed, and which within a reasonable time he has actually and economically applied to a beneficial use. . . . it may be said that the principle of beneficial use is the one of paramount importance . . . The appropriator does not own the water. He has a right of ownership in its use only"); *Town of Manhattan*, ¶ 10 (an appropriator's right only attaches to the amount of water actually taken and beneficially applied).[1]

85. Sections 85-2-401(1) and -402(2)(a), MCA, codify the prior appropriation principles that Montana appropriators have a vested right to maintain surface and ground water conditions substantially as they existed at the time of their appropriation; subsequent appropriators may insist that prior appropriators confine their use to what was actually appropriated or necessary for their originally intended purpose of use; and, an appropriator may not change or alter its use in a manner that adversely affects another water user. *Spokane Ranch & Water Co. v. Beatty*, 37 Mont. 342, 96 P. 727, 731 (1908); *Quigley*, 110 Mont. at 505-11,103 P.2d at 1072-74; *Matter of Royston*, 249 Mont. at 429, 816 P.2d at 1057; *Hohenlohe*, ¶¶ 43-45.[2]

86. The cornerstone of evaluating potential adverse effect to other appropriators is the determination of the "historic use" of the water right being changed. *Town of Manhattan*, ¶10 (recognizing that the Department's obligation to ensure that change will not adversely affect other water rights requires analysis of the actual historic amount, pattern, and means of water use). A

[1] DNRC decisions are available at: https://dnrc.mt.gov/Directors-Office/HearingOrders

[2] *See also Holmstrom Land Co., Inc., v. Newlan Creek Water District*,185 Mont. 409, 605 P.2d 1060 (1979); *Lokowich v. Helena*, 46 Mont. 575, 129 P. 1063 (1913); *Thompson v. Harvey*, 164 Mont. 133, 519 P.2d 963 (1974) (plaintiff could not change his diversion to a point upstream of the defendants because of the injury resulting to the defendants); *McIntosh v. Graveley*, 159 Mont. 72, 495 P.2d 186 (1972) (appropriator was entitled to move his point of diversion downstream, so long as he installed measuring devices to ensure that he took no more than would have been available at his original point of diversion); *Head v. Hale*, 38 Mont. 302, 100 P. 222 (1909) (successors of the appropriator of water appropriated for placer mining purposes cannot so change its use as to deprive lower appropriators of their rights, already acquired, in the use of it for irrigating purposes); and, *Gassert v. Noyes*, 18 Mont. 216, 44 P. 959 (1896) (change in place of use was unlawful where reduced the amount of water in the source of supply available which was subject to plaintiff's subsequent right).

change Applicant must prove the extent and pattern of use for the underlying right proposed for change through evidence of the historic diverted amount, consumed amount, place of use, pattern of use, and return flow because a statement of claim, permit, or decree may not include the beneficial use information necessary to evaluate the amount of water available for change or potential for adverse effect.[3] A comparative analysis of the historic use of the water right to the proposed change in use is necessary to prove the change will not result in expansion of the original right, or adversely affect water users who are entitled to rely upon maintenance of conditions on the source of supply for their water rights. *Quigley*, 103 P.2d at 1072-75 (it is necessary to ascertain historic use of a decreed water right to determine whether a change in use expands the underlying right to the detriment of other water user because a decree only provides a limited description of the right); *Royston*, 249 Mont. at 431-32, 816 P.2d at 1059-60 (record could not sustain a conclusion of no adverse effect because the Applicant failed to provide the Department with evidence of the historic diverted volume, consumption, and return flow); *Hohenlohe*, ¶ 44-45; Town of Manhattan v. DNRC, Cause No. DV-09-872C, Montana Eighteenth Judicial District Court, *Order Re Petition for Judicial Review,* Pgs. 11-12 (proof of historic use is required even when the right has been decreed because the decreed flow rate or volume establishes the maximum appropriation that may be diverted, and may exceed the historical pattern of use, amount diverted or amount consumed through actual use); Matter of Application For Beneficial Water Use Permit By City of Bozeman, *Memorandum*, Pgs. 8-22 (Adopted by DNRC *Final Order* January 9,1985)(evidence of historic use must be compared to the proposed change in use to give effect to the implied limitations read into every decreed right that an appropriator has no right to expand his appropriation or change his use to the detriment of juniors).[4]

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[3]A claim only constitutes *prima facie* evidence for the purposes of the adjudication under § 85-2-221, MCA. The claim does not constitute *prima facie* evidence of historical use in a change proceeding under § 85-2-402, MCA. For example, most water rights decreed for irrigation are not decreed with a volume and provide limited evidence of actual historic beneficial use. Section 85-2-234, MCA

[4] Other western states likewise rely upon the doctrine of historic use as a critical component in evaluating changes in appropriation rights for expansion and adverse effect: Pueblo West Metropolitan District v. Southeastern Colorado Water Conservancy District, 717 P.2d 955, 959 (Colo. 1986)("[O]nce an appropriator exercises his or her privilege to change a water right … the appropriator runs a real risk of requantification of the water right based on actual historical consumptive use. In such a change proceeding a junior water right … which had been strictly administered throughout its existence would, in all probability, be reduced to a lesser quantity because of the relatively limited actual historic use of the right."); Santa Fe Trail Ranches Property Owners Ass'n v. Simpson, 990 P.2d 46, 55 -57 (Colo.,1999); Farmers Reservoir and Irr. Co. v. City of Golden, 44 P.3d 241, 245 (Colo. 2002)("We [Colorado Supreme Court] have stated time and again that the need for security and predictability in the prior appropriation system dictates that holders of vested water rights are entitled to the continuation of stream conditions as they existed at the time they first made their appropriation); Application for Water Rights in Rio Grande

87. An Applicant must also analyze the extent to which a proposed change may alter historic return flows for purposes of establishing that the proposed change will not result in adverse effect. The requisite return flow analysis reflects the fundamental tenant of Montana water law that once water leaves the control of the original appropriator, the original appropriator has no right to its use and the water is subject to appropriation by others. *E.g., Hohenlohe*, ¶ 44; *Rock Creek Ditch & Flume Co. v. Miller*, 93 Mont. 248, 17 P.2d 1074, 1077 (1933); *Newton v. Weiler*, 87 Mont. 164, 286 P. 133 (1930); *Popham v. Holloron*, 84 Mont. 442, 275 P. 1099, 1102 (1929); *Galiger v. McNulty*, 80 Mont. 339, 260 P. 401 (1927); *Head v. Hale*, 38 Mont. 302, 100 P. 222 (1909); *Spokane Ranch & Water Co.*, 37 Mont. at 351-52, 96 P. at 731; *Hidden Hollow Ranch v. Fields*, 2004 MT 153, 321 Mont. 505, 92 P.3d 1185; ARM 36.12.101(56) (Return flow - that part of a diverted flow which is not consumed by the appropriator and returns underground to its original source or another source of water - is not part of a water right and is subject to appropriation by subsequent water users).[5]

88. Although the level of analysis may vary, analysis of the extent to which a proposed change may alter the amount, location, or timing return flows is critical in order to prove that the proposed change will not adversely affect other appropriators who rely on those return flows as part of the source of supply for their water rights. *Royston*, 249 Mont. at 431, 816 P.2d at 1059-60; *Hohenlohe*, at ¶¶ 45-46 and 55-6; *Spokane Ranch & Water Co.*, 37 Mont. at 351-52, 96 P. at 731.

89. In *Royston*, the Montana Supreme Court confirmed that an Applicant is required to prove lack of adverse effect through comparison of the proposed change to the historic use, historic consumption, and historic return flows of the original right. 249 Mont. at 431, 816 P.2d at 1059-60. More recently, the Montana Supreme Court explained the relationship between the

County, 53 P.3d 1165, 1170 (Colo. 2002); Wyo. Stat. § 41-3-104 (When an owner of a water right wishes to change a water right … he shall file a petition requesting permission to make such a change …. The change … may be allowed provided that the quantity of water transferred … shall not exceed the amount of water historically diverted under the existing use, nor increase the historic rate of diversion under the existing use, nor increase the historic amount consumptively used under the existing use, nor decrease the historic amount of return flow, nor in any manner injure other existing lawful appropriators.); Basin Elec. Power Co-op. v. State Bd. of Control, 578 P.2d 557, 564 -566 (Wyo,1978) (a water right holder may not effect a change of use transferring more water than he had historically consumptively used; regardless of the lack of injury to other appropriators, the amount of water historically diverted under the existing use, the historic rate of diversion under the existing use, the historic amount consumptively used under the existing use, and the historic amount of return flow must be considered.)

[5] The Montana Supreme Court recently recognized the fundamental nature of return flows to Montana's water sources in addressing whether the Mitchell Slough was a perennial flowing stream, given the large amount of irrigation return flow which feeds the stream. The Court acknowledged that the Mitchell's flows are fed by irrigation return flows available for appropriation. *Bitterroot River Protective Ass'n, Inc. v. Bitterroot Conservation Dist.*, 2008 MT 377, ¶¶ 22, 31, 43, 346 Mont. 508, 198 P.3d 219,(*citing Hidden Hollow Ranch v. Fields*, 2004 MT 153, 321 Mont. 505, 92 P.3d 1185).

fundamental principles of historic beneficial use, return flow, and the rights of subsequent appropriators as they relate to the adverse effect analysis in a change proceeding in the following manner:

> The question of adverse effect under §§ 85-2-402(2) and -408(3), MCA, implicates return flows. A change in the amount of return flow, or to the hydrogeologic pattern of return flow, has the potential to affect adversely downstream water rights. There consequently exists an inextricable link between the "amount historically consumed" and the water that re-enters the stream as return flow. . . .
> An appropriator historically has been entitled to the greatest quantity of water he can put to use. The requirement that the use be both beneficial and reasonable, however, proscribes this tenet. This limitation springs from a fundamental tenet of western water law-that an appropriator has a right only to that amount of water historically put to beneficial use-developed in concert with the rationale that each subsequent appropriator "is entitled to have the water flow in the same manner as when he located," and the appropriator may insist that prior appropriators do not affect adversely his rights.
> This fundamental rule of Montana water law has dictated the Department's determinations in numerous prior change proceedings. The Department claims that historic consumptive use, as quantified in part by return flow analysis, represents a key element of proving historic beneficial use.
> We do not dispute this interrelationship between historic consumptive use, return flow, and the amount of water to which an appropriator is entitled as limited by his past beneficial use.

Hohenlohe, at ¶¶ 42-45 (internal citations omitted).

90. The Department's rules reflect the above fundamental principles of Montana water law and are designed to itemize the type evidence and analysis required for an Applicant to meet its burden of proof. ARM 36.12.1901 through 1903. These rules forth specific evidence and analysis required to establish the parameters of historic use of the water right being changed. ARM 36.12.1901 and 1902. The rules also outline the analysis required to establish a lack of adverse effect based upon a comparison of historic use of the water rights being changed to the proposed use under the changed conditions along with evaluation of the potential impacts of the change on other water users caused by changes in the amount, timing, or location of historic diversions and return flows. ARM 36.12.1901 and 1903.

91. Applicant seeks to change existing water rights represented by its Water Right Claims. The "existing water rights" in this case are those as they existed prior to July 1, 1973, because with limited exception, no changes could have been made to those rights after that date without the Department's approval. Analysis of adverse effect in a change to an "existing water right" requires evaluation of what the water right looked like and how it was exercised prior to July 1, 1973. In *McDonald v. State*, the Montana Supreme Court explained:

> The foregoing cases and many others serve to illustrate that what is preserved to owners of appropriated or decreed water rights by the provision of the 1972 Constitution is what the law has always contemplated in this state as the extent of a water right: such amount of water as, by pattern of use and means of use, the owners or their predecessors put to beneficial use. . . . the Water Use Act contemplates that all water rights, regardless of prior statements or claims as to amount, must nevertheless, to be recognized, pass the test of historical, unabandoned beneficial use. . . . To that extent only the 1972 constitutional recognition of water rights is effective and will be sustained.

220 Mont. at 529, 722 P.2d at 604; *see also Matter of Clark Fork River Drainage Area*, 254 Mont. 11, 17, 833 P.2d 1120 (1992).

92. Water Resources Surveys were authorized by the 1939 legislature. 1939 Mont. Laws Ch. 185, § 5. Since their completion, Water Resources Surveys have been invaluable evidence in water right disputes and have long been relied on by Montana courts. *In re Adjudication of Existing Rights to Use of All Water in North End Subbasin of Bitterroot River Drainage Area in Ravalli and Missoula Counties*, 295 Mont. 447, 453, 984 P.2d 151, 155 (1999) (Water Resources Survey used as evidence in adjudicating of water rights); *Wareing v. Schreckendgust*, 280 Mont. 196, 213, 930 P.2d 37, 47 (1996) (Water Resources Survey used as evidence in a prescriptive ditch easement case); *Olsen v. McQueary*, 212 Mont. 173, 180, 687 P.2d 712, 716 (1984) (judicial notice taken of Water Resources Survey in water right dispute concerning branches of a creek).

93. While evidence may be provided that a particular parcel was irrigated, the actual amount of water historically diverted and consumed is critical. *E.g., In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*, DNRC Proposal for Decision adopted by Final Order (2005). The Department cannot assume that a parcel received the full duty of water or that it received sufficient water to constitute full-service irrigation for optimum plant growth. Even when it seems clear that no other rights could be affected solely by a particular change in the location of diversion, it is essential that the change also not enlarge an existing right. *See MacDonald*, 220 Mont. at 529, 722 P.2d at 604; *Featherman*, 43 Mont. at 316-17, 115 P. at 986; *Trail's End Ranch, L.L.C. v. Colorado Div. of Water Resources*, 91 P.3d 1058, 1063 (Colo., 2004).

94. The Department has adopted a rule providing for the calculation of historic consumptive use where the Applicant proves by a preponderance of the evidence that the acreage was historically irrigated. ARM 36.12.1902(16). In the alternative an Applicant may present its own evidence of historic beneficial use. In this case Applicant has/has not elected to proceed under ARM 36.12.1902. (FOF No. 20)

95. If an Applicant seeks more than the historic consumptive use as calculated by ARM 36.12.1902(16), the Applicant bears the burden of proof to demonstrate the amount of historic consumptive use by a preponderance of the evidence. The actual historic use of water could be less than the optimum utilization represented by the calculated duty of water in any particular case. *E.g., Application for Water Rights in Rio Grande County*, 53 P.3d 1165 (Colo., 2002) (historical use must be quantified to ensure no enlargement); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*; *Orr v. Arapahoe Water and Sanitation Dist*., 753 P.2d 1217, 1223-1224 (Colo., 1988) (historical use of a water right could very well be less than the duty of water); *Weibert v. Rothe Bros., Inc.,* 200 Colo. 310, 317, 618 P.2d 1367, 1371 - 1372 (Colo. 1980) (historical use could be less than the optimum utilization "duty of water").

96. Based upon the Applicant's evidence of historic use, the Applicant has proven by a preponderance of the evidence the historic use of Statement of Claim No. 40B 6655-00 to be a diverted volume of 205.39 AF, a historically consumed volume of 106.86 AF, and flow rate of 2.50 CFS. (FOF Nos. 17—33)

97. Based upon the Applicant's comparative analysis of historic water use and return flows to water use and return flows under the proposed change, the Applicant has proven that the proposed change in appropriation right will not adversely affect the use of the existing water rights of other persons or other perfected or planned uses or developments for which a permit or certificate has been issued or for which a state water reservation has been issued. Section 85-2-402(2)(a), MCA. (FOF Nos. 34—70)

BENEFICIAL USE

98. A change Applicant must prove by a preponderance of the evidence the proposed use is a beneficial use. Sections 85-2-102(4) and -402(2)(c), MCA. Beneficial use is and has always been the hallmark of a valid Montana water right: "[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 . . ." McDonald, 220 Mont. at 532, 722 P.2d at 606. The analysis of the beneficial use criterion is the same for change authorizations under §85-2-402, MCA, and new beneficial permits under §85-2-311, MCA. ARM 36.12.1801. The amount of water that may be authorized for change 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 (Mont. 1st Jud. Dist. Ct.) (2003) (*affirmed on other grounds*, 2005 MT 60, 326 Mont. 241, 108 P.3d 518); *Worden v. Alexander*, 108 Mont. 208, 90 P.2d 160 (1939); *Allen v. Petrick*, 69 Mont.

373, 222 P. 451(1924); *Sitz Ranch v. DNRC*, DV-10-13390,, *Order Affirming DNRC Decision*, Pg. 3 (Mont. 5th Jud. Dist. Ct.) (2011) (citing *BRPA v. Siebel*, 2005 MT 60, and rejecting Applicant's argument that it be allowed to appropriate 800 acre-feet when a typical year would require 200-300 acre-feet); *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."); § 85-2-312(1)(a), MCA (DNRC is statutorily prohibited from issuing a permit for more water than can be beneficially used).

99. Applicant proposes to use water for irrigation which is a recognized beneficial use. Section 85-2-102(5), MCA. Applicant has proven by a preponderance of the evidence irrigation is a beneficial use and that 163.78 AF of diverted volume and 2.50 CFS flow rate of water requested is the amount needed to sustain the beneficial use and is within the standards set by DNRC Rule. Section 85-2-402(2)(c), MCA. (FOF No. 71)

ADEQUATE MEANS OF DIVERSION

100. Pursuant to § 85-2-402 (2)(b), MCA, the Applicant must prove by a preponderance of the evidence that the proposed means of diversion, construction, and operation of the appropriation works are adequate. This codifies the prior appropriation principle that the means of diversion must be reasonably effective for the contemplated use and may not result in a waste of the resource. *Crowley v. 6th Judicial District Court*, 108 Mont. 89, 88 P.2d 23 (1939*); In the Matter of Application for Beneficial Water Use Permit No. 41C-11339900 by Three Creeks Ranch of Wyoming LLC* (DNRC Final Order 2002) (information needed to prove that proposed means of diversion, construction, and operation of the appropriation works are adequate varies based upon project complexity; design by licensed engineer adequate).

Pursuant to § 85-2-402 (2)(b), MCA, Applicant has proven by a preponderance of the evidence that the proposed means of diversion, construction, and operation of the appropriation works are adequate for the proposed beneficial use. (FOF Nos. 72—81)

POSSESSORY INTEREST

101. Pursuant to § 85-2-402(2)(d), MCA, the Applicant must prove by a preponderance of the evidence that it has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use. See also ARM 36.12.1802.

102. The Applicant has proven by a preponderance of the evidence that it has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use. (FOF Nos. 82 and 83)

PRELIMINARY DETERMINATION

Subject to the terms and analysis in this Preliminary Determination Order, the Department preliminarily determines that this Application to Change Water Right No. 40B 30164213 should be granted subject to the following.

Applicant is authorized to flood irrigate 70.65 AC at a flow rate of 2.50 CFS and a diverted volume of 163.78 AF. The authorized 70.65 AC of flood irrigation is comprised of the following:

Table 18: Authorized place of use

ID	Acres	Qtr Sec	Sec	TWP	RGE	County
1	14.88	E2NE	24	15N	20E	Fergus
2	38.36	NW	19	15N	21E	Fergus
3	10.27	SENE	19	15N	21E	Fergus
4	7.14	SWNW	20	15N	21E	Fergus
Total	**70.65**					

Additionally, Applicant is authorized to add a place of storage on an ephemeral unnamed tributary of North Folk McDonald Creek in S2SENE Sec 19 TWP 15N RGE 21E Fergus County and NWSWSWNW Sec 20 TWP 15N 21E Fergus County. The place of storage is authorized for a capacity of 6.48 AF and a total volume of 7.71 AF per period of storage. Applicant is authorized a period of storage from May 15 to September 15.

NOTICE

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

Dated this 21st day of November 2025.

/Original signed by Steven B Hamilton/

Steven B. Hamilton, Manager
Lewistown Regional Office
Montana Department of Natural Resources and Conservation

CERTIFICATE OF SERVICE

This certifies that a true and correct copy of the DRAFT PRELIMINARY DETERMINATION TO GRANT was served upon all parties listed below on this 21st day of November 2025, by first class United States mail.

EAST FORK HOLDINGS LLC
109 ROYAL PAM WAY
PALM BEACH, FL 33480-4249

and:

BRAD BENNETT
WATER & ENVRONMENTAL TECHNOLOGIES
102 COOPERATIVE WAY, SUITE 100
KALISPELL, MT 59901-2382

_____

LEWISTOWN Regional Office, (406) 538-7459