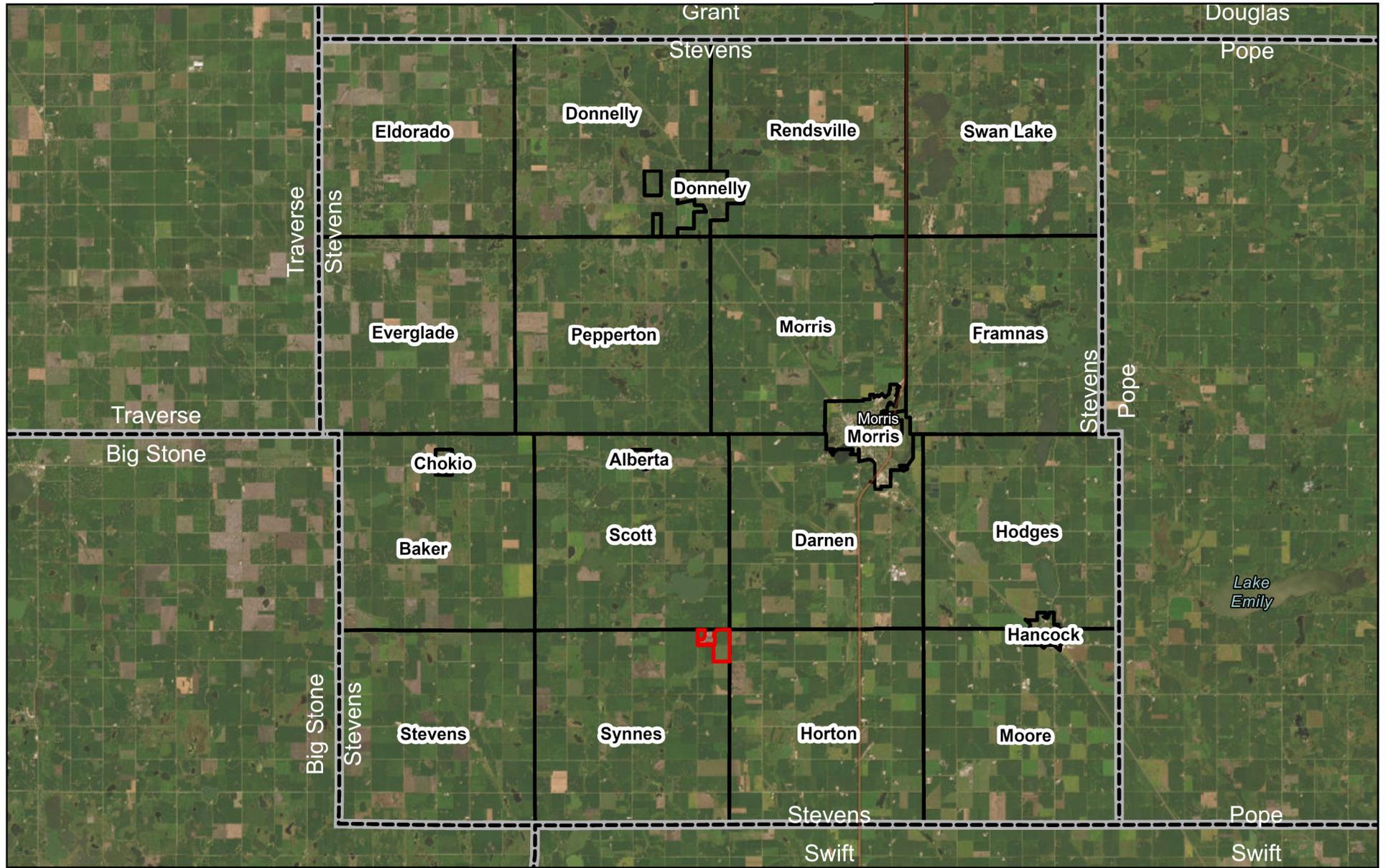


# Attachment 1

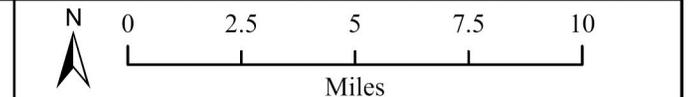
County Map with Project Location



**Stevens County Map**

**West River Dairy Expansion**  
Synnes Township

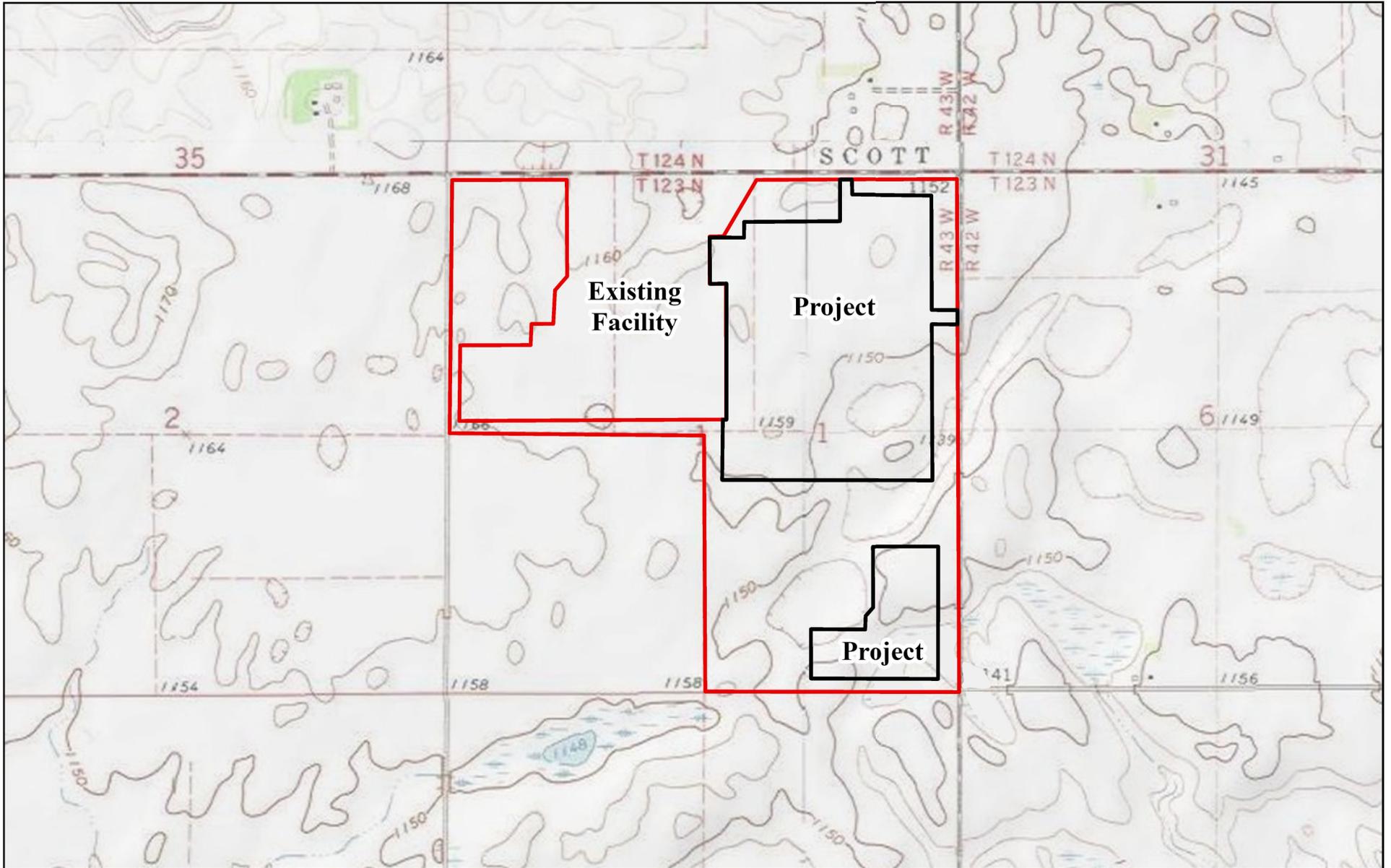
-  Project Boundary
-  County Boundary
-  City / Township Boundary



**ENVIRONMENTAL  
SCIENTIFIC**

# Attachment 2

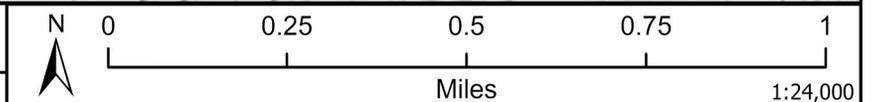
USGS 7.5 Minute Topographic Map



**USGS Topographic Map**

**West River Dairy Expansion  
Synnes Township**

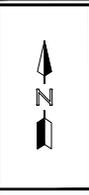
 Project Boundary (oversized)       West River Dairy Expansion (Project)



**Total Acreage**  
Project Boundary: 348.6 acres  
Disturbed Area: 191.8 acres



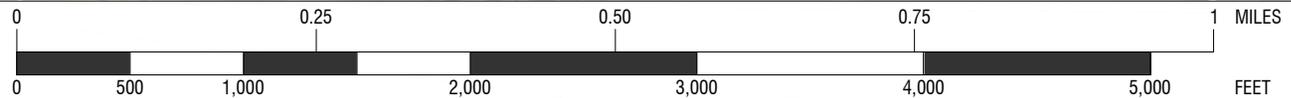
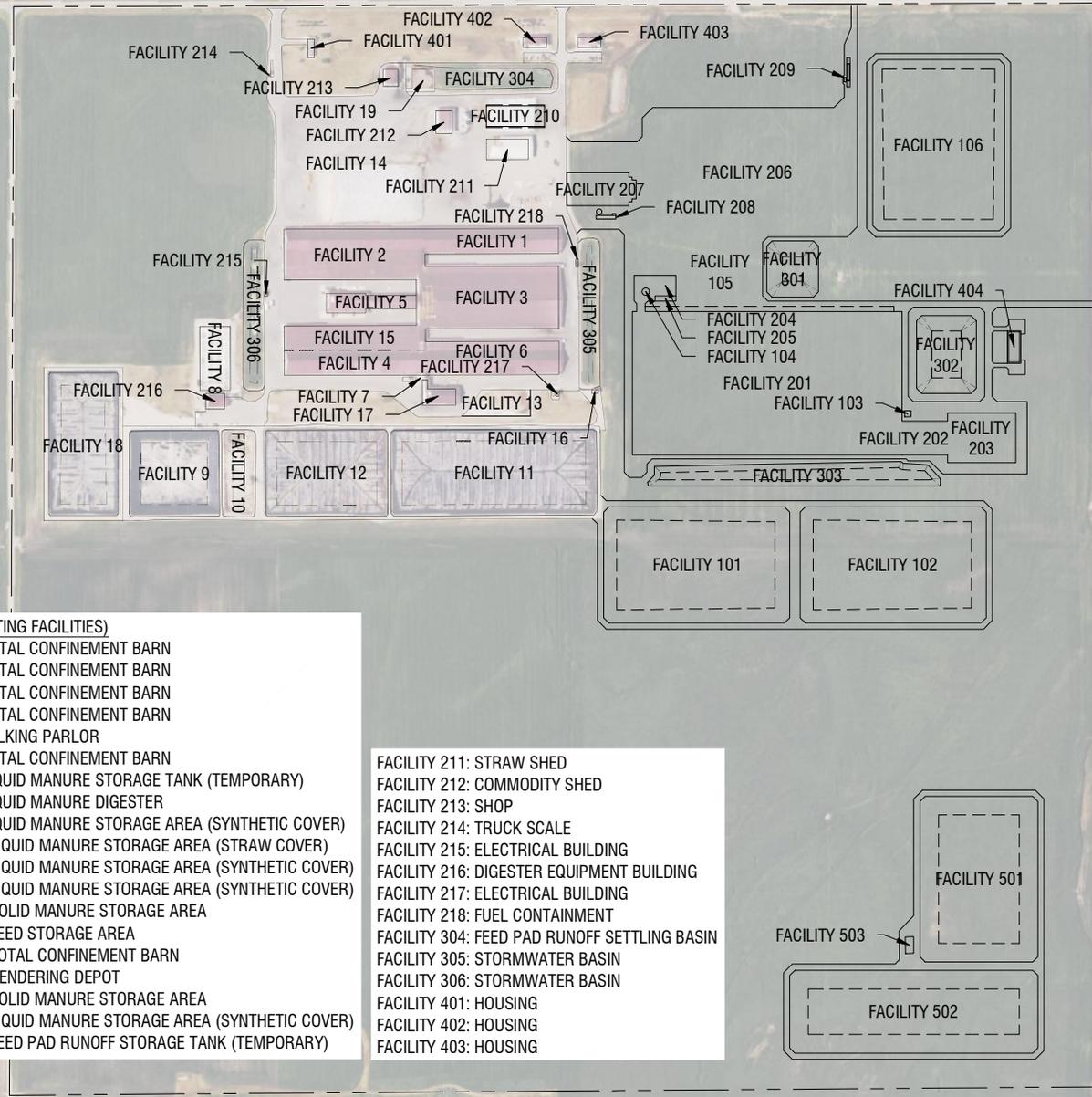
Attachment 3  
Project Site Map



- LEGEND (PROPOSED FACILITIES)**
- FACILITY 101: LIQUID MANURE STORAGE AREA (SYNTHETIC COVER)
  - FACILITY 102: LIQUID MANURE STORAGE AREA (SYNTHETIC COVER)
  - FACILITY 103: LIQUID MANURE STORAGE TANK (TEMPORARY)
  - FACILITY 104: LIQUID MANURE STORAGE TANK (TEMPORARY)
  - FACILITY 105: SOLID MANURE STORAGE AREA
  - FACILITY 106: LIQUID MANURE STORAGE AREA (SYNTHETIC COVER)
  - FACILITY 201: TOTAL CONFINEMENT BARN
  - FACILITY 202: MILKING PARLOR HOLDING PENS
  - FACILITY 203: MILKING PARLOR
  - FACILITY 204: SOLID MANURE STORAGE AREA
  - FACILITY 205: WASH BAY
  - FACILITY 206: FEED STORAGE AREA
  - FACILITY 207: COMMODITY SHED
  - FACILITY 208: GRAIN BUILDING
  - FACILITY 209: TRUCK SCALE
  - FACILITY 210: STRAW SHED
  - FACILITY 301: STORMWATER BASIN
  - FACILITY 302: STORMWATER BASIN
  - FACILITY 303: STORMWATER BASIN
  - FACILITY 404: HOUSING
  - FACILITY 501: WATER STORAGE BASIN
  - FACILITY 502: WATER STORAGE BASIN
  - FACILITY 503: WATER PUMP BUILDING

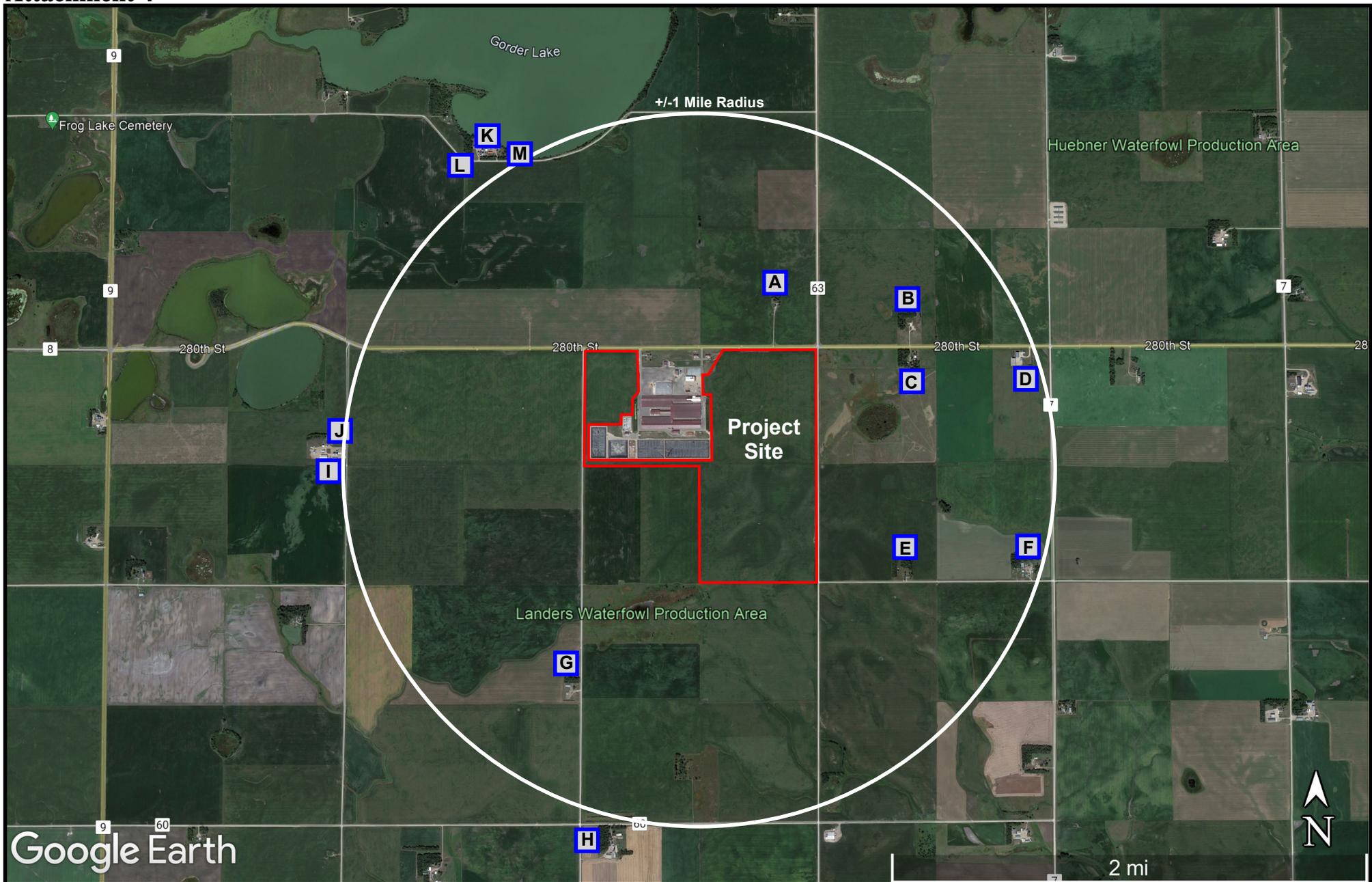
- LEGEND (EXISTING FACILITIES)**
- FACILITY 1: TOTAL CONFINEMENT BARN
  - FACILITY 2: TOTAL CONFINEMENT BARN
  - FACILITY 3: TOTAL CONFINEMENT BARN
  - FACILITY 4: TOTAL CONFINEMENT BARN
  - FACILITY 5: MILKING PARLOR
  - FACILITY 6: TOTAL CONFINEMENT BARN
  - FACILITY 7: LIQUID MANURE STORAGE TANK (TEMPORARY)
  - FACILITY 8: LIQUID MANURE DIGESTER
  - FACILITY 9: LIQUID MANURE STORAGE AREA (SYNTHETIC COVER)
  - FACILITY 10: LIQUID MANURE STORAGE AREA (STRAW COVER)
  - FACILITY 11: LIQUID MANURE STORAGE AREA (SYNTHETIC COVER)
  - FACILITY 12: LIQUID MANURE STORAGE AREA (SYNTHETIC COVER)
  - FACILITY 13: SOLID MANURE STORAGE AREA
  - FACILITY 14: FEED STORAGE AREA
  - FACILITY 15: TOTAL CONFINEMENT BARN
  - FACILITY 16: RENDERING DEPOT
  - FACILITY 17: SOLID MANURE STORAGE AREA
  - FACILITY 18: LIQUID MANURE STORAGE AREA (SYNTHETIC COVER)
  - FACILITY 19: FEED PAD RUNOFF STORAGE TANK (TEMPORARY)

- FACILITY 211: STRAW SHED
- FACILITY 212: COMMODITY SHED
- FACILITY 213: SHOP
- FACILITY 214: TRUCK SCALE
- FACILITY 215: ELECTRICAL BUILDING
- FACILITY 216: DIGESTER EQUIPMENT BUILDING
- FACILITY 217: ELECTRICAL BUILDING
- FACILITY 218: FUEL CONTAINMENT
- FACILITY 304: FEED PAD RUNOFF SETTLING BASIN
- FACILITY 305: STORMWATER BASIN
- FACILITY 306: STORMWATER BASIN
- FACILITY 401: HOUSING
- FACILITY 402: HOUSING
- FACILITY 403: HOUSING



# Attachment 4

## Resident Map

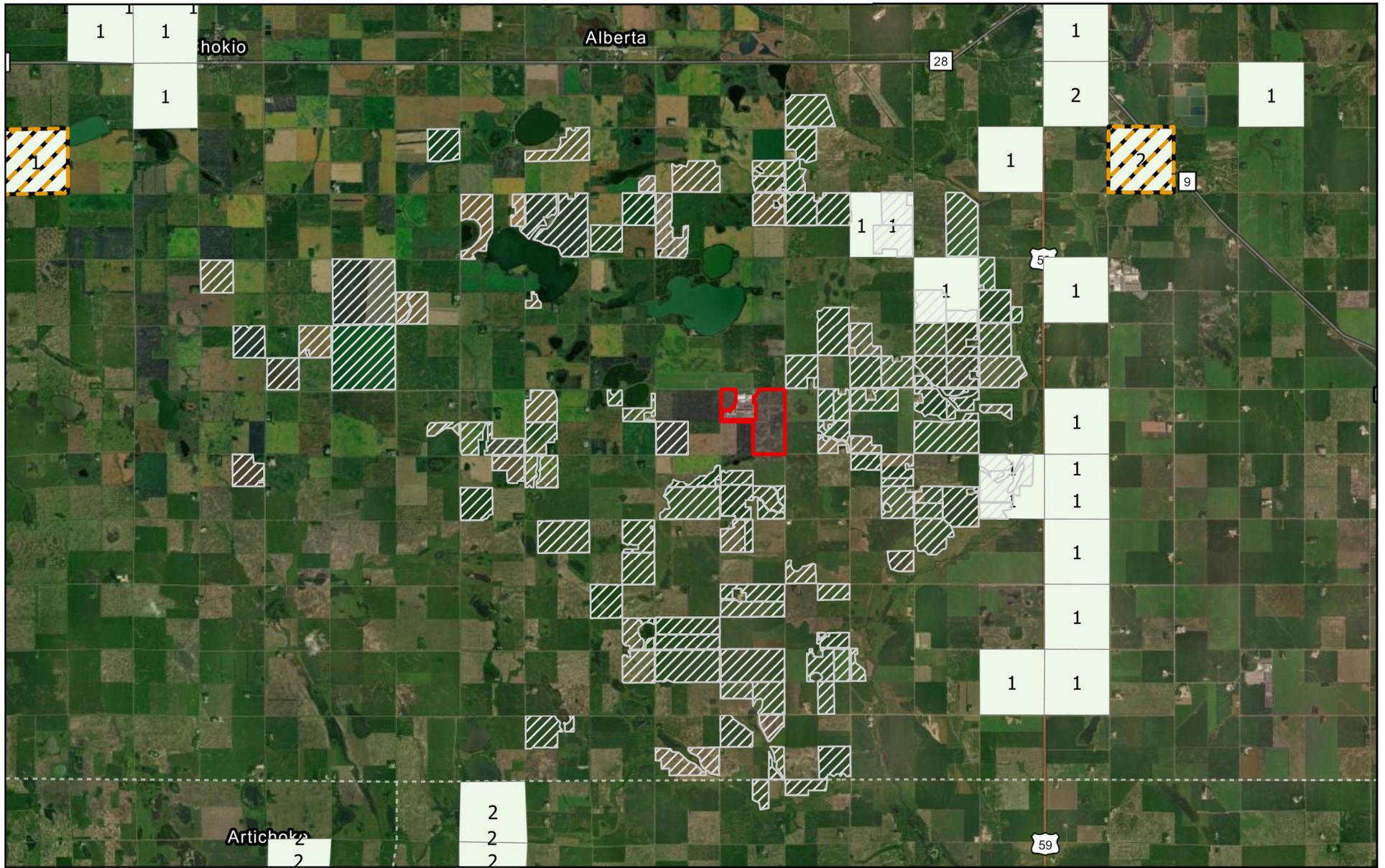


<h3>Resident Map</h3>	<b>A</b> 52109 280th Street Morris, MN 56267	<b>D</b> 51125 280th Street Morris, MN 56267	<b>G</b> 29433 530th Avenue Morris, MN 56267	<b>J</b> 28435 540th Avenue Morris, MN 56267	<b>M</b> 53370 270th Street Alberta, MN 56207
	<b>B</b> 51606 280th Street Morris, MN 56267	<b>E</b> 52869 300th Street Morris, MN 56267	<b>H</b> 51626 290th Street Morris, MN 56267	<b>K</b> 53414 270th Street Alberta, MN 56207	
	<b>C</b> 51605 280th Street Morris, MN 56267	<b>F</b> 51096 290th Street Morris, MN 56267	<b>I</b> 28437 540th Avenue Morris, MN 56267	<b>L</b> 53470 270th Street Alberta, MN 56207	



# Attachment 5

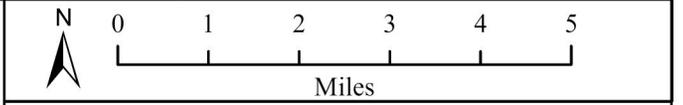
Manure Application Acres with Cultural Resource Sites Map



**Manure Application Acres  
with Cultural Resource Sites Map**

**West River Dairy Expansion**  
Synnes Township, MN

- Project Boundary
- Available Manure Application Acres
- Minnesota Indian Affairs Council Spatial Layer
- OSA Site Summary**
- Fewer than 3



**ENVIRONMENTAL  
SCIENTIFIC**

# Attachment 6a

SHPO Results for Project Site & Waterline Route



February 7, 2023

Brady Janzen  
Riverview, LLP  
26406 470<sup>th</sup> Ave  
Morris, MN 5626

RE: West River Dairy Expansion – 52751 280<sup>th</sup> Street, Morris  
T123 R43 S1, Stevens County  
SHPO Number: 2023-0777

Dear Brady Janzen:

Thank you for consulting with our office during the preparation of an Environmental Assessment Worksheet for the above-referenced project.

Due to the nature and location of the proposed project, we recommend that a Phase IA literature review and archaeological assessment be completed by a qualified archaeologist to assess the potential for intact archaeological sites in the project area. If, as a result of this assessment, a Phase I archaeological survey is recommended, this survey should be completed. The survey must meet the requirements of the Secretary of the Interior's Standards for Identification and Evaluation and should include an evaluation of National Register eligibility for any properties that are identified. For a list of consultants who have expressed an interest in undertaking such surveys, please visit the website [preservationdirectory.mnhs.org](http://preservationdirectory.mnhs.org), and select "Archaeologists" in the "Search by Specialties" box.

We will reconsider the need for survey if the project area can be documented as previously surveyed or disturbed. Any previous survey work must meet contemporary standards. **Note:** plowed areas and right-of-way are not automatically considered disturbed. Archaeological sites can remain intact beneath the plow zone and in undisturbed portions of the right-of-way.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36 CFR § 800. If this project is considered for federal financial assistance, or requires a federal permit or license, then review and consultation with our office will need to be initiated by the lead federal agency. Be advised that comments and recommendations provided by our office for this state-level review may differ from findings and determinations made by the federal agency as part of review and consultation under Section 106.

If you have any questions regarding our review of this project, please contact Kelly Gragg-Johnson, Environmental Review Program Specialist, at (651) 201-3285 or [kelly.graggjohnson@state.mn.us](mailto:kelly.graggjohnson@state.mn.us).

Sincerely,

A handwritten signature in blue ink that reads 'Sarah J. Beimers'.

Sarah J. Beimers  
Environmental Review Program Manager

---

MINNESOTA STATE HISTORIC PRESERVATION OFFICE

50 Sherburne Avenue ■ Administration Building 203 ■ Saint Paul, Minnesota 55155 ■ 651-201-3287

[mn.gov/admin/shpo](http://mn.gov/admin/shpo) ■ [mshpo@state.mn.us](mailto:mshpo@state.mn.us)

AN EQUAL OPPORTUNITY AND SERVICE PROVIDER



Jason Kirwin &lt;jasonkirwin@gmail.com&gt;

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**RE: SHPO Review Request - West River Dairy Water Line Route**

1 message

---

**GraggJohnson, Kelly (ADM)** <kelly.graggjohnson@state.mn.us>  
To: Jason Kirwin <jasonkirwin@gmail.com>

Mon, Feb 13, 2023 at 5:17 PM

Hi Jason,

We would recommend that a Phase IA literature review and archaeological assessment be completed for the entire project – dairy expansion and waterline - by a qualified archaeologist to assess the potential for intact archaeological sites in the project area(s). If, as a result of this assessment, a Phase I archaeological survey is recommended, this survey should be completed. The survey must meet the requirements of the Secretary of the Interior's Standards for Identification and Evaluation and should include an evaluation of National Register eligibility for any properties that are identified. For a list of consultants who have expressed an interest in undertaking such surveys, please visit the website [preservationdirectory.mnhs.org](https://preservationdirectory.mnhs.org), and select "Archaeologists" in the "Search by Specialties" box.

Please let me know if you have any questions.

Thanks,

Kelly

**Kelly Gragg-Johnson** (she/her) | **Environmental Review Program Specialist**[50 Sherburne Avenue, Suite 203](#)[Saint Paul, MN 55155](#)[\(651\) 201-3285](tel:6512013285) | [kelly.graggjohnson@state.mn.us](mailto:kelly.graggjohnson@state.mn.us)

Please [subscribe to receive SHPO notices](#) for the most current updates regarding office hours, accessing research files, or changes in submitting materials to the SHPO.

To access historic resource information please visit our webpage on [Using SHPO's Files](#).

[Facebook](#) | [Instagram](#) | [Twitter](#)

-

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**From:** Jason Kirwin <[jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com)>  
**Sent:** Monday, February 13, 2023 4:44 PM  
**To:** GraggJohnson, Kelly (ADM) <[kelly.graggjohnson@state.mn.us](mailto:kelly.graggjohnson@state.mn.us)>  
**Cc:** Tyler Evink <[tyler.evink@riverviewllp.com](mailto:tyler.evink@riverviewllp.com)>; Lisa Nieland <[lisa.nieland@riverviewllp.com](mailto:lisa.nieland@riverviewllp.com)>; Morgan <[morgankirwin@gmail.com](mailto:morgankirwin@gmail.com)>  
**Subject:** SHPO Review Request - West River Dairy Water Line Route

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Kelly;

As recently discussed, Riverview has identified a proposed water line route for the West River Dairy expansion project. Attached is the Request for SHPO Review Form with a couple maps outlining the proposed water line route.

If you have any questions or need additional information, please don't hesitate to contact me and I'll do my best.

Thanks

Jason

**Jason Kirwin - President**

**ENVIRONMENTAL SCIENTIFIC LLC.**

**Office (320) 589-9893 | Cell (320) 349-0794**  
[jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com) [www.environmental-scientific.com](http://www.environmental-scientific.com)

September 26, 2023

Brady Janzen  
Riverview, LLP  
26406 470<sup>th</sup> Ave  
Morris, MN 5626

RE: West River Dairy Expansion – 52751 280<sup>th</sup> Street, Morris  
T123 R43 S1, Stevens County  
SHPO Number: 2023-0777

Dear Brady Janzen:

Thank you for continuing consultation with our office during the preparation of an Environmental Assessment Worksheet for the above-referenced project.

We have reviewed the cultural resources survey report: *A 2023 Phase I Archeological Survey of the Proposed West River Dairy Expansion Project, Stevens County, Minnesota* (August 2023, Agassiz Archeology) that was prepared for this project. Based on the results of the survey, we conclude that there are **no properties** listed in the National or State Registers of Historic Places, and no known or suspected archaeological properties located in the area that will be affected by this project.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36 CFR § 800. If this project is considered for federal financial assistance, or requires a federal permit or license, then review and consultation with our office will need to be initiated by the lead federal agency. Be advised that comments and recommendations provided by our office for this state-level review may differ from findings and determinations made by the federal agency as part of review and consultation under Section 106.

If you have any questions regarding our review of this project, please contact Kelly Gragg-Johnson, Environmental Review Program Specialist, at (651) 201-3285 or [kelly.graggjohnson@state.mn.us](mailto:kelly.graggjohnson@state.mn.us).

Sincerely,



Sarah J. Beimers  
Environmental Review Program Manager

June 24, 2025

Brady Janzen  
Riverview, LLP  
26406 470<sup>th</sup> Ave  
Morris, MN 5626

RE: West River Dairy Expansion – 52751 280<sup>th</sup> Street, Morris  
T123 R43 S1, Stevens County  
SHPO Number: 2023-0777

Dear Brady Janzen:

Thank you for continuing consultation with our office during the preparation of an Environmental Assessment Worksheet for the above-referenced project.

We have reviewed the cultural resources survey report: *A 2023 Phase I Archeological Survey of the Proposed West River Dairy Expansion Project, Stevens County, Minnesota* (August 2023, Agassiz Archeology) that was prepared for this project. Based on the results of the survey, we conclude that there are **no properties** listed in the National or State Registers of Historic Places, and no known or suspected archaeological properties located in the area that will be affected by this project.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36 CFR § 800. If this project is considered for federal financial assistance, or requires a federal permit or license, then review and consultation with our office will need to be initiated by the lead federal agency. Be advised that comments and recommendations provided by our office for this state-level review may differ from findings and determinations made by the federal agency as part of review and consultation under Section 106.

If you have any questions regarding our review of this project, please contact Kelly Gragg-Johnson, Environmental Review Specialist, at (651) 201-3285 or [kelly.graggjohnson@state.mn.us](mailto:kelly.graggjohnson@state.mn.us).

Sincerely,



Amy Spong  
Deputy State Historic Preservation Officer

# Attachment 6b

SHPO Search Results for Manure Application Acres



Jason Kirwin <jasonkirwin@gmail.com>

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**RE: Template - SHPO Review: West River Dairy Manure Acres**

1 message

---

**MN\_MNIT\_Data Request SHPO** <DataRequestSHPO@state.mn.us>

Wed, Nov 22, 2023 at 1:24 PM

To: Jason Kirwin <jasonkirwin@gmail.com>

Cc: Lisa Nieland <lisa.nieland@riverviewllp.com>, Morgan <morgankirwin@gmail.com>, Tyler Evink <tyler.evink@riverviewllp.com>

See attached for the results of your search request.

Later this year, SHPO will launch the Minnesota Statewide Historic Property Inventory Portal (MnSHIP) where you will be able to obtain information about aboveground historic properties. Please visit our [MnSHIP website](#) to learn more.

The [OSA Portal](#) is a web viewer for archaeological site information. Please note that information on whether a site is listed in the National Register of Historic Places, Determined Eligible for Listing, or SHPO has concurred a site is eligible must be obtained from SHPO and is not currently available via the OSA Portal.

Lucy Harrington

Environmental Review Archaeologist | (651) 201-3283



SHPO Data Requests

Minnesota State Historic Preservation Office

50 Sherburne Avenue, Suite 203

Saint Paul, MN 55155

[datarequestshpo@state.mn.us](mailto:datarequestshpo@state.mn.us)

**Notice:** This email message simply reports the results of the cultural resources database search you requested. The database search is only for previously known archaeological sites and historic properties. **IN NO CASE DOES THIS DATABASE SEARCH OR EMAIL MESSAGE CONSTITUTE A PROJECT REVIEW UNDER STATE OR FEDERAL PRESERVATION LAWS** – please see our [Environmental Review Program Website](#) for further information regarding our Environmental Review Process.

Because the majority of archaeological sites in the state and many historic/architectural properties have not been recorded, important sites or properties may exist within the search area and may be affected by development projects within that area. Additional research, including field surveys, may be necessary to adequately assess the area's potential to contain historic properties or archaeological sites.

Properties that are listed in the National Register of Historic Places (NRHP) or have been determined eligible for listing in the NRHP are indicated on the reports you have received, if any. The following codes may be on those reports:

**NR** – National Register listed. The properties may be individually listed or may be within the boundaries of a National Register District.

**CEF** – Considered Eligible Findings are made when a federal agency has recommended that a property is eligible for listing in the National Register and MN SHPO has accepted the recommendation for the purposes of the Environmental Review Process. These properties need to be further assessed before they are officially listed in the National Register.

**SEF** – Staff eligible Findings are those properties the MN SHPO staff considers eligible for listing in the National Register, in circumstances other than the Environmental Review Process.

**DOE** – Determination of Eligibility is made by the National Park Service and are those properties that are eligible for listing in the National Register, but have not been officially listed.

**CNEF** – Considered Not Eligible Findings are made during the course of the Environmental Review Process. For the purposes of the review a property is considered not eligible for listing in the National Register. These properties may need to be reassessed for eligibility under additional or alternate contexts.

Properties without NR, CEF, SEF, DOE, or CNEF designations in the reports may not have been evaluated and therefore no assumption to their eligibility can be made. Integrity and contexts change over time, therefore any eligibility determination made ten (10) or more years from the date of the current survey are considered out of date and the property will need to be reassessed.

If you require a comprehensive assessment of a project's potential to impact archaeological sites or historic/architectural properties, you may need to hire a qualified archaeologist and/or historian. If you need assistance with a project review, please contact Kelly Gragg-Johnson, Environmental Review Specialist @ 651-201-3285 or by email at [kelly.graggjohnson@state.mn.us](mailto:kelly.graggjohnson@state.mn.us).

The Minnesota SHPO Archaeology and Historic/Architectural Survey Manuals can be found at <https://mn.gov/admin/shpo/identification-evaluation/>.

Please [subscribe to receive SHPO notices](#) for the most current updates regarding office hours, accessing research files, or changes in submitting materials to the SHPO.

To access historic resource information please visit our webpage on [Using SHPO's Files](#).

---

**From:** Jason Kirwin <[jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com)>

**Sent:** Tuesday, October 31, 2023 9:51 AM

**To:** MN\_MNIT\_Data Request SHPO <[DataRequestSHPO@state.mn.us](mailto:DataRequestSHPO@state.mn.us)>

**Cc:** Lisa Nieland <[lisa.nieland@riverviewllp.com](mailto:lisa.nieland@riverviewllp.com)>; Morgan <[morgankirwin@gmail.com](mailto:morgankirwin@gmail.com)>; Tyler Evink <[tyler.evink@riverviewllp.com](mailto:tyler.evink@riverviewllp.com)>

**Subject:** Re: Template - SHPO Review: West River Dairy Manure Acres

Thanks Lucy.

This review is for manure application only with no ground disturbance, so SHPO staff previously asked us to submit those requests in the email form like this one. If something has changed or you want anything else, just let me know.

Thanks Again!!  
Jason

**Jason Kirwin - President**

**ENVIRONMENTAL SCIENTIFIC LLC.**

**Office (320) 589-9893 | Cell (320) 349-0794**

[jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com) [www.environmental-scientific.com](http://www.environmental-scientific.com)

On Tue, Oct 31, 2023 at 9:40 AM MN\_MNIT\_Data Request SHPO <[DataRequestSHPO@state.mn.us](mailto:DataRequestSHPO@state.mn.us)> wrote:

Good morning,

I am reaching out from SHPO to let you know that our Cultural Resources Information Manager had to take an unexpected leave of absence and while he is gone, other SHPO staff are working to cover the data requests. There is quite a backlog of requests so we will be working to fill them as quickly as possible in the order in which they were received.

Also – please note that the data request does not constitute review through our environmental review program. Please visit our [Environmental Review Program website](#) for information on that process.

Thank you for your patience,

Lucy

**Lucy Harrington (she/her) | Environmental Review Archaeologist**

State Historic Preservation Office

*Minnesota Department of Administration*

[50 Sherburne Avenue, Suite 203](#)

[Saint Paul, Minnesota 55155](#)

(651) 201-3283 | [lucy.harrington@state.mn.us](mailto:lucy.harrington@state.mn.us)

---

**From:** Jason Kirwin <[jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com)>

**Sent:** Thursday, October 26, 2023 1:03 PM

**To:** MN\_MNIT\_Data Request SHPO <[DataRequestSHPO@state.mn.us](mailto:DataRequestSHPO@state.mn.us)>

**Cc:** Lisa Nieland <[lisa.nieland@riverviewllp.com](mailto:lisa.nieland@riverviewllp.com)>; Morgan <[morgankirwin@gmail.com](mailto:morgankirwin@gmail.com)>; Jason Kirwin

<jasonkirwin@gmail.com>; Tyler Evink <tyler.evink@riverviewllp.com>

**Subject:** Fwd: Template - SHPO Review: West River Dairy Manure Acres

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Dear SHPO,

We are helping Riverview and the MPCA with an Environmental Review for the proposed West River Dairy Expansion in Stevens County. Producers near the proposed dairy have provided 17,000 acres for manure application which will decrease current demand for inorganic fertilizer in the area. Below is a table summarizing the PLSS sections where all the fields are located. A map showing the Producers' fields is also attached.

Locational Information (West River Dairy Expansion - Manure Application Acres)

Agency Use	County	Township #	Range #	Section(s) (please list all sections)
	Swift	122	42	6 (Fairfield)
	Swift	122	43	1 (Hebert)
	Stevens	123	42	3-6, 8-10, 16-19, 29-31 (Horton)
	Stevens	123	43	2-6, 8-9, 11-13, 15-16, 22-27, 33, 35-36 (Synnes)
	Stevens	123	44	10 (Stevens)
	Stevens	124	42	7, 18-21, 23, 26-28, 30-34 (Darnen)
	Stevens	124	43	13-16, 18, 20-24, 28, 30 (Scott)
	Stevens	124	44	25, 27, 34-36 (Baker)

As with similar projects, there will be no new disturbances associated with this manure application as it will be applied to tillable land that is currently in crop production. Nonetheless, please let us know if your database has any archaeological or historical records for the sections outlined above. In the event that any potential impacts are identified, the above areas can be modified in an effort to avoid them.

Thanks  
Jason

**Jason Kirwin - President**

**ENVIRONMENTAL SCIENTIFIC LLC.**

**Office (320) 589-9893 | Cell (320) 349-0794**

[jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com) [www.environmental-scientific.com](http://www.environmental-scientific.com)

**Archeological Sites Identified within WRD Manure Acres Sections**

<b>COUNTY</b>	<b>SITENUM</b>	<b>TOWNSHIP</b>	<b>RANGE</b>	<b>SECTION</b>	<b>ACRES</b>	<b>WORKTYPE</b>	<b>DESCRIPT</b>	<b>ReportNum</b>
Stevens								
	21SE0011	124	42	26	4	2	LS	THY-1994-01
		124	42	26	4	2	LS	THY-1993-01
		124	42	26	4	2	LS	SE-1995-01
	21SE0019	124	42	28	0	1	LS	MULT-1974-03
	21SE0022	123	42	10	6	2	LS	SE-1996-01
	21SE0044	124	42	20	0.1	1	SA	

**Historical Sites Identified with WRD Manure Acres Sections**

COUNTY	CITYTWP	PROPNAME	ADDRESS	TOWNSHIP	RANGE	SECTION	QUARTERS	USGS	REPORTNUM	INVENTNUM
Multiple										
		Trunk Highway 28	TH 28	124	42	7			XX-2021-10H	XX-ROD-171
Stevens										
	Darnen									
		Bridge No. 5582	TH 59 crossing Pomme de Terre River	124	42	26				SE-DAR-003
	Darnen Twp.									
		Christ Luthi, Jr. Farmstead	off U.S. Hwy. 59	124	42	27	SE-SE-NE	Morris	SE-95-1H	SE-DAR-001
	Horton Twp.									
		farmhouse (moved)	off U.S. Hwy. 59	123	42	10	SE-SE-SE	Hancock NW		SE-HOR-003
		Bridge 75502		123	42	3	NE-NE	Hancock NW		SE-HOR-004



Jason Kirwin &lt;jasonkirwin@gmail.com&gt;

---

**RE: Re:**

1 message

---

**Koenen, Bruce (ADM)** <bruce.koenen@state.mn.us>  
To: Jason Kirwin <jasonkirwin@gmail.com>

Thu, Dec 14, 2023 at 11:58 AM

Jason,

Thanks for the maps. The only application area of the four locals submitted that contains a site is in the NE ¼ of Section 28 Township 124 Range 42. The rest are all clear.

bruce

---

**From:** Jason Kirwin <jasonkirwin@gmail.com>  
**Sent:** Thursday, December 14, 2023 11:02 AM  
**To:** Koenen, Bruce (ADM) <bruce.koenen@state.mn.us>  
**Cc:** Morgan <morgankirwin@gmail.com>  
**Subject:** Re:

You don't often get email from [jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com). [Learn why this is important](#)

Bruce:

Attached are four USGS 7.5 Minute Topo maps with proposed manure application areas in the sections where you have archaeological sites identified. My client has twice as many manure acres then they actually need. Therefore, if any of your areas are within the identified with proposed application areas, I suspect we'll just avoid those areas.

Please let me know if any of your areas are within the identified application areas. I plan to document this process in the EAW text. I'll probably just say I talked to the State Archeologist on whatever date you respond and document if any changes were or were not made to the application areas. Seems like the best approach to avoid longer discussions later.

Thanks!!

Jason

**Jason Kirwin - President****ENVIRONMENTAL SCIENTIFIC LLC.****Office (320) 589-9893 | Cell (320) 349-0794**[jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com) [www.environmental-scientific.com](http://www.environmental-scientific.com)

On Thu, Dec 14, 2023 at 9:11 AM Koenen, Bruce (ADM) <[bruce.koenen@state.mn.us](mailto:bruce.koenen@state.mn.us)> wrote:

Jason,

I meant to call you yesterday when I was in the Office, but got busy with other things. If you can send me a sketch map of the portions of these sections where you are proposing to apply manure I can let you know if you are within a site or not.

bruce

---

**From:** Jason Kirwin <[jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com)>  
**Sent:** Monday, December 11, 2023 3:19 PM  
**To:** Koenen, Bruce (ADM) <[bruce.koenen@state.mn.us](mailto:bruce.koenen@state.mn.us)>  
**Subject:**

You don't often get email from [jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com). [Learn why this is important](#)

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Do not select links or open attachments unless verified. Report all suspicious emails to Minnesota IT Services Security Operations Center.

---

Bruce:

Among other things, I think you are the guy I need to talk to about the actual locations of the archeological sites identified in the attached table from Lucy.

I just need to find out if they are within our fields proposed for manure application. If so, we can adjust those areas pretty easily.

Jason

**Jason Kirwin - President**

**ENVIRONMENTAL SCIENTIFIC LLC.**

**Office (320) 589-9893 | Cell (320) 349-0794**

[jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com) [www.environmental-scientific.com](http://www.environmental-scientific.com)



Jason Kirwin &lt;jasonkirwin@gmail.com&gt;

---

**RE: Re:**

1 message

---

**Koenen, Bruce (ADM)** <bruce.koenen@state.mn.us>  
To: Jason Kirwin <jasonkirwin@gmail.com>

Mon, Jun 30, 2025 at 11:33 AM

Jason,

I checked our records and none of the proposed manure application areas shown on your map contain recorded archeological sites.

bruce

Bruce Koenen

Research Archaeologist

Office of the State Archaeologist

Kellogg Center

[328 W. Kellogg Blvd](#)[St. Paul, MN 55102](#)

651.201.2264

---

**From:** Jason Kirwin <jasonkirwin@gmail.com>  
**Sent:** Thursday, June 26, 2025 2:56 PM  
**To:** Koenen, Bruce (ADM) <bruce.koenen@state.mn.us>  
**Cc:** Morgan Vogt <morgan@environmental-scientific.com>  
**Subject:** Re: Re:

Bruce:

Our EAW for West River Dairy is getting a bit dated and MPCA asked me to reach out to you again so we have an updated response from the State Archeologist. The fields are the same as before, except we took out the field in the NE corner of Section 28 Darnen Township that talked about below. I attached the updated map showing that. I guess I just need you to confirm if any new sites have showed up since we talked in December 2023.

Thanks!!

Jason

**Jason Kirwin - President**

**ENVIRONMENTAL SCIENTIFIC LLC.**

**Office (320) 589-9893 | Cell (320) 349-0794**

[jason@environmental-scientific.com](mailto:jason@environmental-scientific.com) [www.environmental-scientific.com](http://www.environmental-scientific.com)

On Thu, Dec 14, 2023 at 11:58 AM Koenen, Bruce (ADM) <[bruce.koenen@state.mn.us](mailto:bruce.koenen@state.mn.us)> wrote:

Jason,

Thanks for the maps. The only application area of the four locals submitted that contains a site is in the NE ¼ of Section 28 Township 124 Range 42. The rest are all clear.

bruce

---

**From:** Jason Kirwin <[jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com)>  
**Sent:** Thursday, December 14, 2023 11:02 AM  
**To:** Koenen, Bruce (ADM) <[bruce.koenen@state.mn.us](mailto:bruce.koenen@state.mn.us)>  
**Cc:** Morgan <[morgankirwin@gmail.com](mailto:morgankirwin@gmail.com)>  
**Subject:** Re:

You don't often get email from [jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com). [Learn why this is important](#)

Bruce:

Attached are four USGS 7.5 Minute Topo maps with proposed manure application areas in the sections where you

have archaeological sites identified. My client has twice as many manure acres then they actually need. Therefore, if any of your areas are within the identified with proposed application areas, I suspect we'll just avoid those areas.

Please let me know if any of your areas are within the identified application areas. I plan to document this process in the EAW text. I'll probably just say I talked to the State Archeologist on whatever date you respond and document if any changes were or were not made to the application areas. Seems like the best approach to avoid longer discussions later.

Thanks!!

Jason

**Jason Kirwin - President**

**ENVIRONMENTAL SCIENTIFIC LLC.**

**Office (320) 589-9893 | Cell (320) 349-0794**

[jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com) [www.environmental-scientific.com](http://www.environmental-scientific.com)

On Thu, Dec 14, 2023 at 9:11 AM Koenen, Bruce (ADM) <[bruce.koenen@state.mn.us](mailto:bruce.koenen@state.mn.us)> wrote:

Jason,

I meant to call you yesterday when I was in the Office, but got busy with other things. If you can send me a sketch map of the portions of these sections where you are proposing to apply manure I can let you know if you are within a site or not.

bruce

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**From:** Jason Kirwin <[jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com)>  
**Sent:** Monday, December 11, 2023 3:19 PM  
**To:** Koenen, Bruce (ADM) <[bruce.koenen@state.mn.us](mailto:bruce.koenen@state.mn.us)>  
**Subject:**

You don't often get email from [jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com). [Learn why this is important](#)

**This message may be from an external email source.**

Do not select links or open attachments unless verified. Report all suspicious emails to Minnesota IT Services Security Operations Center.

---

Bruce:

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I just need to find out if they are within our fields proposed for manure application. If so, we can adjust those areas pretty easily.

Jason

**Jason Kirwin - President**

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[jasonkirwin@gmail.com](mailto:jasonkirwin@gmail.com) [www.environmental-scientific.com](http://www.environmental-scientific.com)

# Attachment 7a

NHIS Search Results for Project Site



## Formal Natural Heritage Review - Cover Page

See next page for results of review. A draft watermark means the project details have not been finalized and the results are not official.

**Project Name:** West River Dairy (Project Site): Clone Of 2023-00013

**Project Proposer:** Riverview, LLP

**Project Type:** Agriculture, Feedlots (submitted project boundary must include manure application sites)

**Project Type Activities:** Groundwater Impacts (e.g., contamination, dewatering, change in hydrology, potential for aquifer breach)

**TRS:** T123 R43 S1, T123 R43 S2, T124 R43 S35, T124 R43 S36

**County(s):** Stevens

**DNR Admin Region(s):** Northwest

**Reason Requested:** State EAW

**Project Description:** The project is an expansion to the existing West River Dairy in Section 1 of Synnes Township (Project Site). The project will include the construction ...

**Existing Land Uses:** All land use for the proposed West River Dairy expansion is currently in crop production.

**Landcover / Habitat Impacted:** All land impacted by the Project Site is currently in crop production and the majority of it is pattern tilled. A separate NHIS request for the manure acres will be forthcoming.

**Waterbodies Affected:** There will be no waterbodies impacted by this project

**Groundwater Resources Affected:** The Proposer plans to apply for a DNR Water Appropriation Permit

**Previous Natural Heritage Review:** No

**Previous Habitat Assessments / Surveys:** No

### SUMMARY OF AUTOMATED RESULTS

Category	Results	Response By Category
Project Details	No Comments	No Further Review Required
Ecologically Significant Area	No Comments	No Further Review Required
State-Listed Endangered or Threatened Species	No Comments	No Further Review Required
State-Listed Species of Special Concern	Comments	Recommendations
Federally Listed Species	No Records	Visit IPaC For Federal Review



Minnesota Department of Natural Resources  
 Division of Ecological & Water Resources  
 500 Lafayette Road, Box 25  
 St. Paul, MN 55155-4025

June 18, 2025

Project ID: MCE #2023-00013-02

Jason Kirwin  
 Environmental Scientific  
 46170 120TH ST  
 Donnelly, MN 56235

RE: Automated Natural Heritage Review of the proposed West River Dairy (Project Site): Clone Of 2023-00013  
 See Cover Page for location and project details.

Dear Jason Kirwin,

As requested, the above project has been reviewed for potential effects to rare features. Based on this review, the following rare features may be adversely affected by the proposed project:

*Ecologically Significant Area*

No ecologically significant areas have been documented in the vicinity of the project.

*State-Listed Endangered or Threatened Species*

No state-listed endangered or threatened species have been documented in the vicinity of the project.

*State-Listed Species of Special Concern*

Taxonomic Group	Common Name	Scientific Name	Water Regime	Habitat	Federal Status
Vascular Plant	Prairie Mimosa	Desmanthus illinoensis	terrestrial	Upland Prairie, Lake Shore	

- The above table identifies state-listed species of special concern that have been documented in the vicinity of your project. If suitable habitat for any of these species occurs within your project footprint or activity impact area, the project may negatively impact those species. To avoid impacting state-listed species of special concern, the DNR recommends modifying the location of project activities to avoid suitable habitat or modifying the timing of project activities to avoid the presence of the species. Please visit the [DNR Rare Species Guide](#) for more information on the habitat use of these species and recommended measures to avoid or minimize impacts. Species-specific comments, if any, appear below.

### *Federally Listed Species*

The Natural Heritage Information System does not contain any records for federally listed species within one mile of the proposed project. Please note, however, that not all federally listed species are tracked within the NHIS. To ensure compliance with federal law, please conduct a federal regulatory review using the U.S. Fish and Wildlife Service's online [Information for Planning and Consultation \(IPaC\) tool](#).

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and the project description provided on the cover page. If project details change or construction has not occurred within one year, please resubmit the project for review before initiating project activities.

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential impacts to these rare features. For information on the environmental review process or other natural resource concerns, you may contact your [DNR Regional Environmental Assessment Ecologist](#).

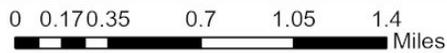
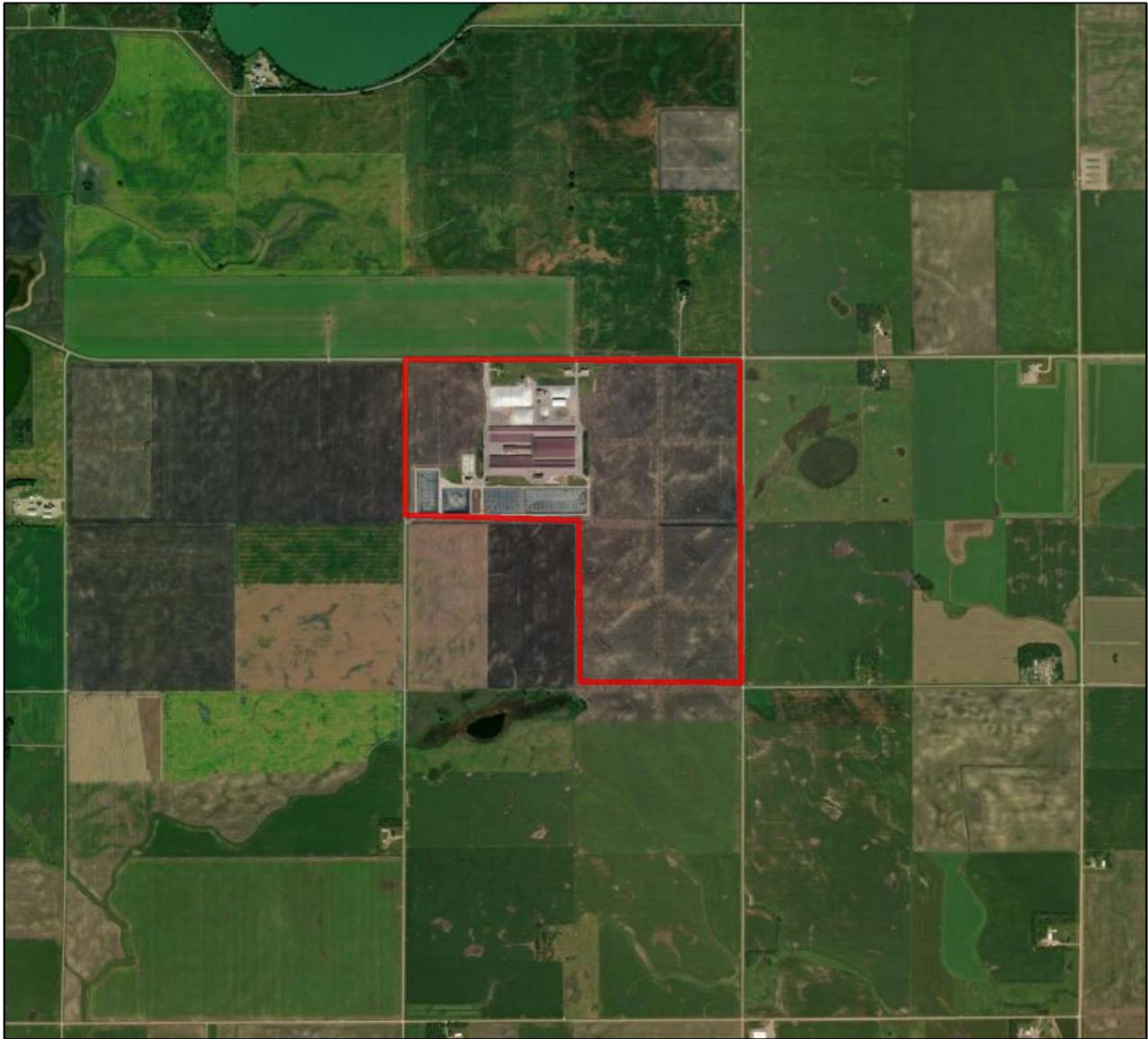
Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources.

Sincerely, *The Natural Heritage Review Team* [Natural Heritage Review Program](#)  
[Review.NHIS@state.mn.us](mailto:Review.NHIS@state.mn.us)

Links: USFWS Information for Planning and Consultation (IPaC) tool  
[Information for Planning and Consultation \(IPaC\) tool](#)  
DNR Regional Environmental Assessment Ecologist Contact Info  
[https://www.dnr.state.mn.us/eco/ereview/erp\\_regioncontacts.html](https://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html)

# West River Dairy (Project Site): Clone Of 2023-00013

Aerial Imagery With Locator Map



 Project Boundary

Project Type: Agriculture, Feedlots (submitted project boundary must include

Project Size (acres): 450.20

County(s): Stevens

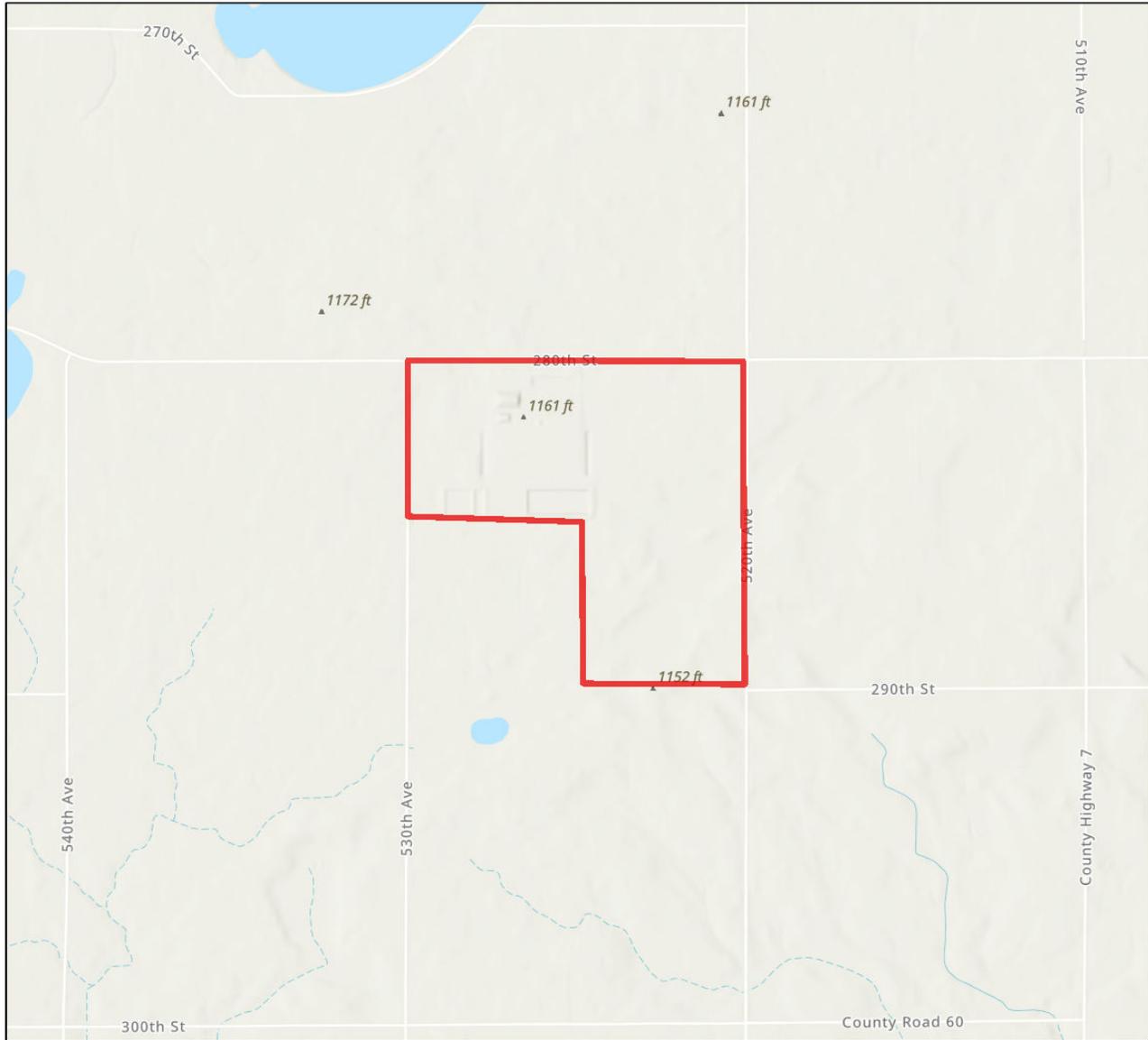
TRS: T123 R43 S1, T123 R43 S2, T124 R43 S35, T124 R43 S36

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS  
Earthstar Geographics  
Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,



# West River Dairy (Project Site): Clone Of 2023-00013

USA Topo Basemap With Locator Map



 Project Boundary

Project Type: Agriculture, Feedlots (submitted project boundary must include

Project Size (acres): 450.20

County(s): Stevens

TRS: T123 R43 S1, T123 R43 S2, T124 R43 S35, T124 R43 S36

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS  
Esri, NASA, NGA, USGS, FEMA  
Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,





## Formal Natural Heritage Review - Cover Page

See next page for results of review. A draft watermark means the project details have not been finalized and the results are not official.

**Project Name:** West River Dairy (Project Site)

**Project Proposer:** Riverview, LLP

**Project Type:** Agriculture, Feedlots (submitted project boundary must include manure application sites)

**Project Type Activities:** Groundwater Impacts (e.g., groundwater appropriation, change in recharge, contamination)

**TRS:** T123 R43 S1, T123 R43 S2, T124 R43 S35, T124 R43 S36

**County(s):** Stevens

**DNR Admin Region(s):** Northwest

**Reason Requested:** State EAW

**Project Description:** The project is an expansion to the existing West River Dairy in Section 1 of Synnes Township (Project Site). The project will include the construction ...

**Existing Land Uses:** All land use for the proposed West River Dairy expansion is currently in crop production.

**Landcover / Habitat Impacted:** All land impacted by the Project Site is currently in crop production and the majority of it is pattern tilled. A separate NHIS request for the manure acres will be forthcoming.

**Waterbodies Affected:** There will be no waterbodies impacted by this project

**Groundwater Resources Affected:** The Proposer plans to apply for a DNR Water Appropriation Permit

**Previous Natural Heritage Review:** No

**Previous Habitat Assessments / Surveys:** No

### SUMMARY OF AUTOMATED RESULTS

Category	Results	Response By Category
Project Details	No Comments	No Further Review Required
Ecologically Significant Area	No Comments	No Further Review Required
State-Listed Endangered or Threatened Species	No Comments	No Further Review Required
State-Listed Species of Special Concern	Comments	Recommendations
Federally Listed Species	No Records	Visit IPaC For Federal Review



Minnesota Department of Natural Resources  
Division of Ecological & Water Resources  
500 Lafayette Road, Box 25  
St. Paul, MN 55155-4025

January 6, 2023

Project ID: MCE #2023-00013

Jason Kirwin  
Environmental Scientific  
46170 120TH ST  
Donnelly , MN 56235

RE: Automated Natural Heritage Review of the proposed West River Dairy (Project Site)  
See Cover Page for location and project details.

Dear Jason Kirwin,

As requested, the above project has been reviewed for potential effects to rare features. Based on this review, the following rare features may be adversely affected by the proposed project:

*Ecologically Significant Area*

No ecologically significant areas have been documented in the vicinity of the project.

*State-Listed Endangered or Threatened Species*

No state-listed endangered or threatened species have been documented in the vicinity of the project.

*State-Listed Species of Special Concern*

Taxonomic Group	Common Name	Scientific Name	Water Regime	Habitat	Federal Status
Vascular Plant	Prairie Mimosa	Desmanthus illinoensis	terrestrial	Lake Shore, Upland Prairie	

- The above table identifies state-listed species of special concern that have been documented in the vicinity of your project. If suitable habitat for any of these species occurs within your project footprint or activity impact area, the project may negatively impact those species. To avoid impacting state-listed species of special concern, the DNR recommends modifying the location of project activities to avoid suitable habitat or modifying the timing of project activities to avoid the presence of the species. Please visit the [DNR Rare Species Guide](#) for more information on the habitat use of these species and recommended measures to avoid or minimize impacts. For further assistance, please contact the appropriate [DNR Regional Nongame Specialist](#) or [Regional Ecologist](#). Species-specific comments, if any, appear below.

### *Federally Listed Species*

The Natural Heritage Information System does not contain any records for federally listed species within one mile of the proposed project. However, to ensure compliance with federal law, please conduct a federal regulatory review using the U.S. Fish and Wildlife Service's online [Information for Planning and Consultation \(IPaC\) tool](#).

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and the project description provided on the cover page. If project details change or construction has not occurred within one year, please resubmit the project for review.

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential effects to these rare features. For information on the environmental review process or other natural resource concerns, you may contact your [DNR Regional Environmental Assessment Ecologist](#).

Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources.

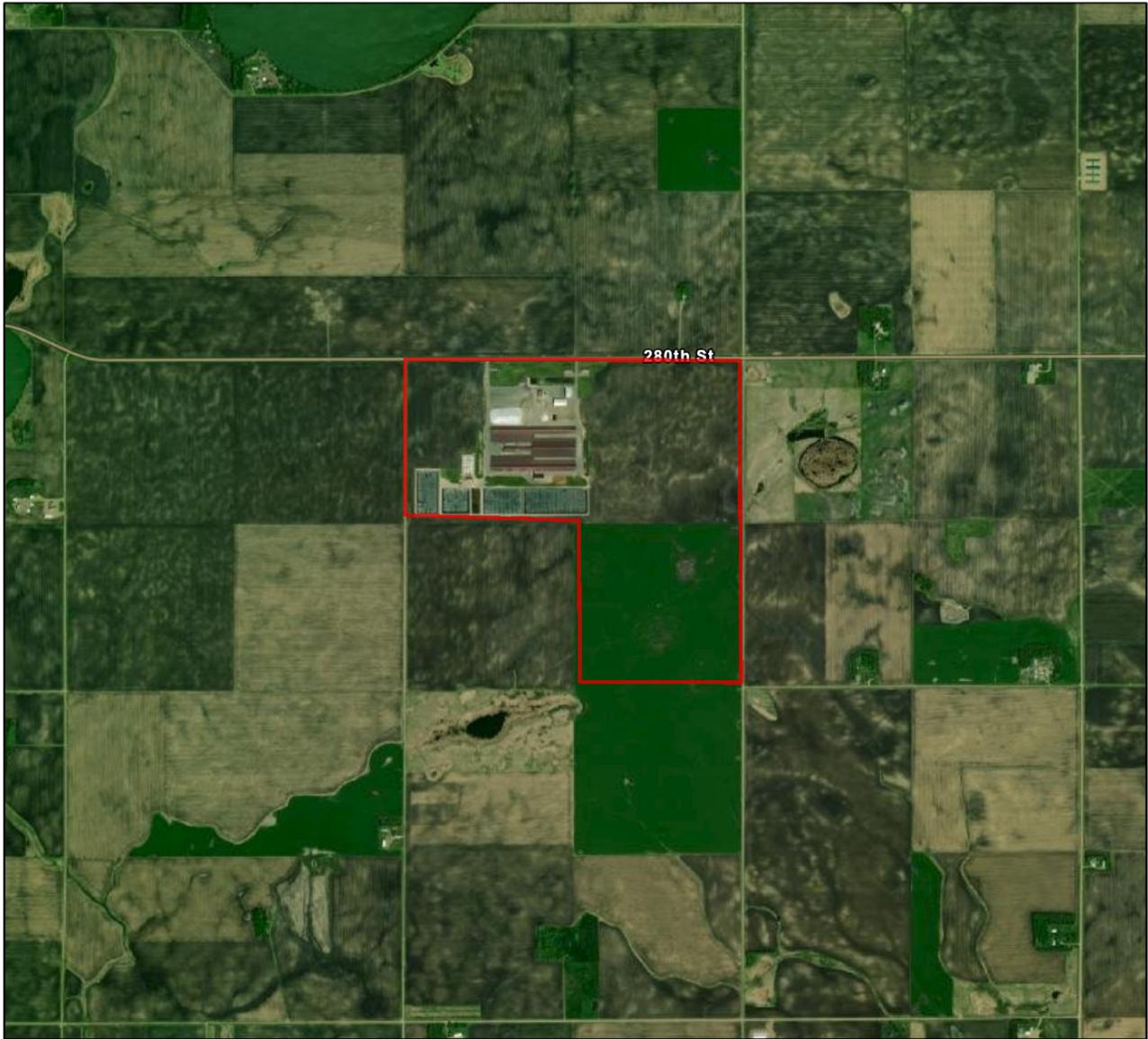
Sincerely,

*Jim Drake* Jim Drake  
Natural Heritage Review Specialist  
[James.F.Drake@state.mn.us](mailto:James.F.Drake@state.mn.us)

Links: USFWS Information for Planning and Consultation (IPaC) tool  
[Information for Planning and Consultation \(IPaC\) tool](#)  
DNR Regional Environmental Assessment Ecologist Contact Info  
[https://www.dnr.state.mn.us/eco/ereview/erp\\_regioncontacts.html](https://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html)

# West River Dairy (Project Site)

Aerial Imagery With Locator Map



 Project Boundary

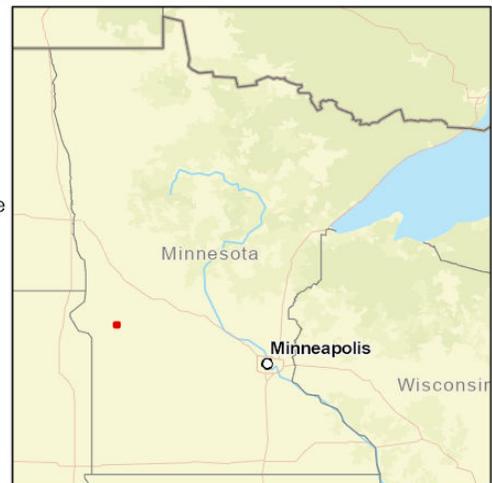
Project Type: Agriculture, Feedlots (submitted project boundary must include

Project Size (acres): 450.20

County(s): Stevens

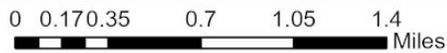
TRS: T123 R43 S1, T123 R43 S2, T124 R43 S35, T124 R43 S36

Earthstar Geographics  
Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,  
EPA, NPS, USDA



# West River Dairy (Project Site)

USA Topo Basemap With Locator Map



 Project Boundary

Project Type: Agriculture, Feedlots (submitted project boundary must include

Project Size (acres): 450.20

County(s): Stevens

TRS: T123 R43 S1, T123 R43 S2, T124 R43 S35, T124 R43 S36

Esri, NASA, NGA, USGS, FEMA  
Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,  
EPA, NPS, USDA



# Attachment 7b

NHIS Search Results for Waterline Route



## Formal Natural Heritage Review - Cover Page

See next page for results of review. A draft watermark means the project details have not been finalized and the results are not official.

**Project Name:** West River Diary - Water Line Route (5-7-25)

**Project Proposer:** Riverview LLP

**Project Type:** Agriculture, Feedlots (submitted project boundary must include manure application sites)

**Project Type Activities:** Groundwater Impacts (e.g., contamination, dewatering, change in hydrology, potential for aquifer breach)

**TRS:** T123 R42 S16, T123 R42 S17, T123 R42 S5, T123 R42 S6, T123 R42 S8, T123 R42 S9, T123 R43 S1

**County(s):** Stevens

**DNR Admin Region(s):** Northwest

**Reason Requested:** State EAW

**Project Description:** This project includes the installation of a water line to provide groundwater to the dairy from a well field

**Existing Land Uses:** Land use within the project area is predominantly agricultural crop production with the exception of several road crossings.

**Landcover / Habitat Impacted:** The land impacted by this project is currently in row crop production with the exception of several road crossings.

**Waterbodies Affected:** The project was designed to avoid all waterbodies. If any wetlands are identified along the route, they will be avoided to prevent impacts.

**Groundwater Resources Affected:** Riverview will seek a groundwater appropriation permit for the well field that this water line will connected to the dairy.

**Previous Natural Heritage Review:** No

**Previous Habitat Assessments / Surveys:** No

### SUMMARY OF AUTOMATED RESULTS

Category	Results	Response By Category
<b>Project Details</b>	No Comments	No Further Review Required
<b>Ecologically Significant Area</b>	No Comments	No Further Review Required
<b>State-Listed Endangered or Threatened Species</b>	No Comments	No Further Review Required
<b>State-Listed Species of Special Concern</b>	No Comments	No Further Review Required
<b>Federally Listed Species</b>	No Records	Visit IPaC For Federal Review





Minnesota Department of Natural Resources  
Division of Ecological & Water Resources  
500 Lafayette Road, Box 25  
St. Paul, MN 55155-4025

May 7, 2025

Project ID: MCE #2023-00150-02

Jason Kirwin  
Environmental Scientific  
46170 120TH ST  
Donnelly , MN 56235

RE: Automated Natural Heritage Review of the proposed West River Diary - Water Line Route (5-7-25)  
See Cover Page for location and project details.

Dear Jason Kirwin,

As requested, the above project has been reviewed for potential effects to rare features. Given the project details provided on the cover page, I do not believe the proposed project will negatively affect any known occurrences of rare features. To ensure compliance with federal law, conduct a federal regulatory review using the U.S. Fish and Wildlife Service's (USFWS) online [Information for Planning and Consultation \(IPaC\) tool](#).

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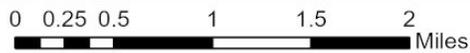
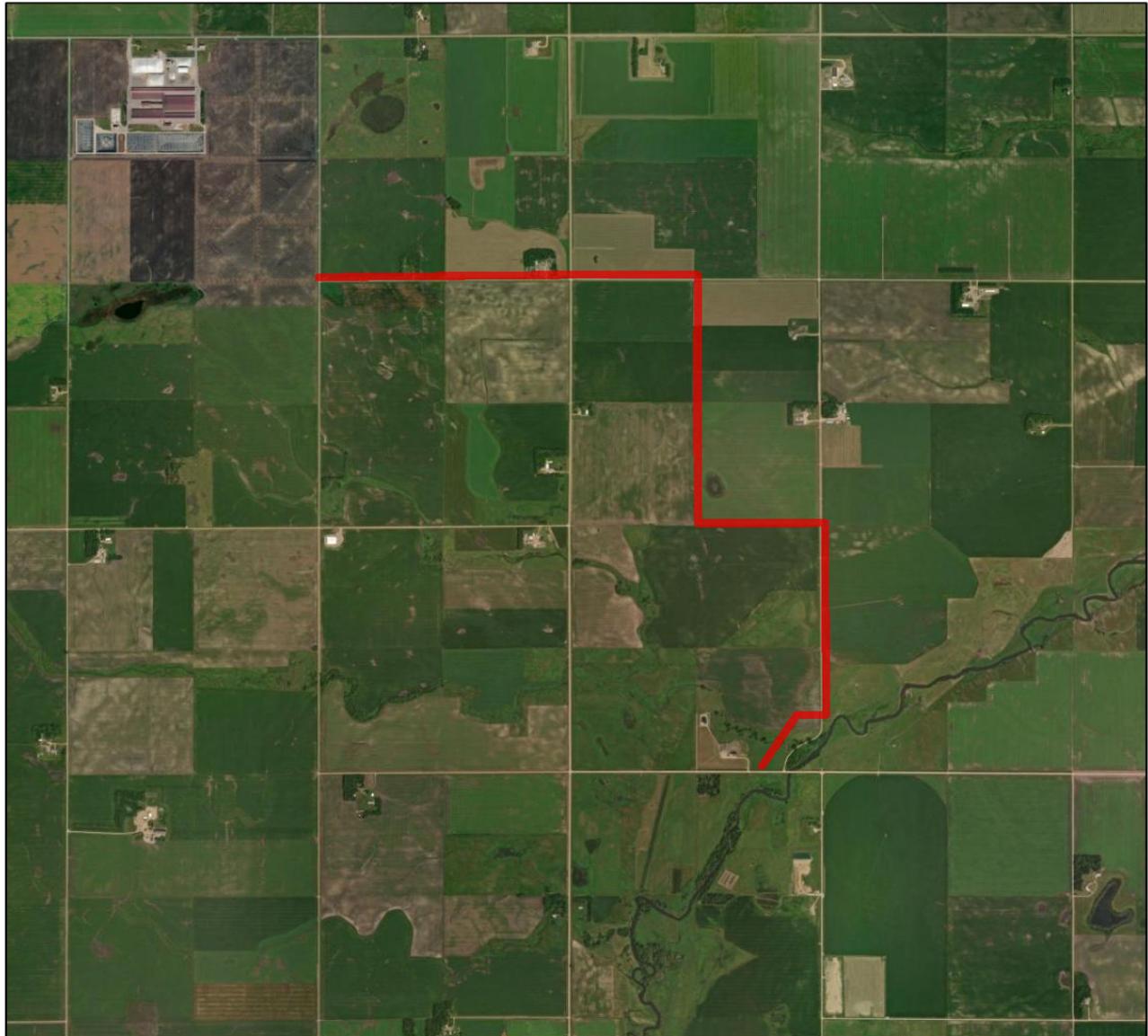
Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources.

Sincerely, *The Natural Heritage Review Team* [Natural Heritage Review Program](#)  
[Review.NHIS@state.mn.us](mailto:Review.NHIS@state.mn.us)

Links: USFWS Information for Planning and Consultation (IPaC) tool  
[Information for Planning and Consultation \(IPaC\) tool](#)  
DNR Regional Environmental Assessment Ecologist Contact Info  
[https://www.dnr.state.mn.us/eco/ereview/erp\\_regioncontacts.html](https://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html)

# West River Diary - Water Line Route (5-7-25)

Aerial Imagery With Locator Map



 Project Boundary

Project Type: Agriculture, Feedlots (submitted project boundary must include

Project Size (acres): 21.24

County(s): Stevens

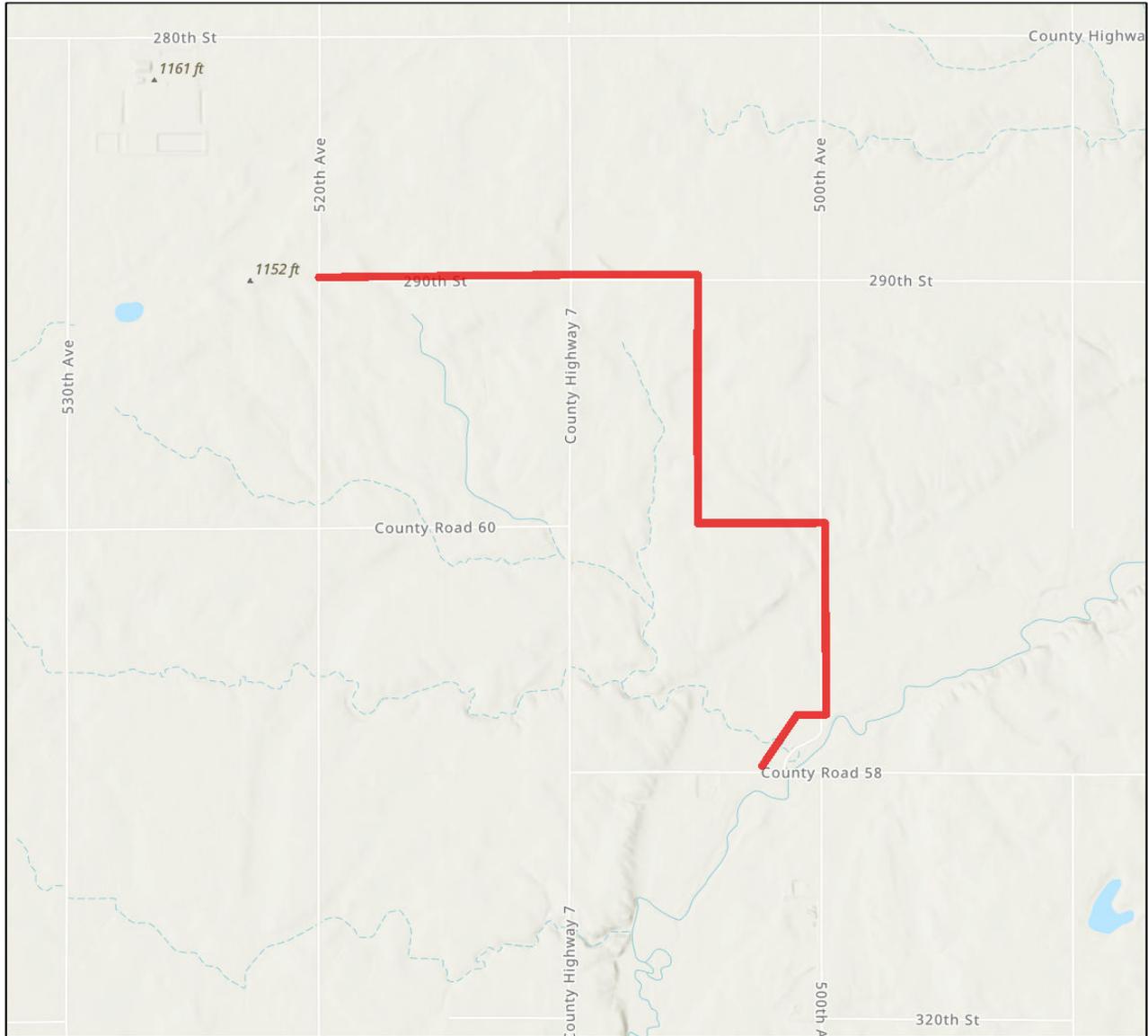
TRS: T123 R42 S16, T123 R42 S17, T123 R42 S5, T123 R42 S6, T123 R42 S8 +

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS  
Earthstar Geographics  
Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,



# West River Diary - Water Line Route (5-7-25)

USA Topo Basemap With Locator Map



 Project Boundary

Project Type: Agriculture, Feedlots (submitted project boundary must include

Project Size (acres): 21.24

County(s): Stevens

TRS: T123 R42 S16, T123 R42 S17, T123 R42 S5, T123 R42 S6, T123 R42 S8 +

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS  
Esri, NASA, NGA, USGS, FEMA  
Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,





## Formal Natural Heritage Review - Cover Page

See next page for results of review. A draft watermark means the project details have not been finalized and the results are not official.

**Project Name:** West River Diary - Water Line Route (2-28-23)

**Project Proposer:** Riverview LLP

**Project Type:** Agriculture, Feedlots (submitted project boundary must include manure application sites)

**Project Type Activities:** Groundwater Impacts (e.g., groundwater appropriation, change in recharge, contamination)

**TRS:** T123 R42 S16, T123 R42 S17, T123 R42 S7, T123 R42 S8, T123 R42 S9, T123 R43 S1, T123 R43 S12

**County(s):** Stevens

**DNR Admin Region(s):** Northwest

**Reason Requested:** State EAW

**Project Description:** This project includes the installation of a water line to provide groundwater to the dairy from a well field

**Existing Land Uses:** Land use within the project area is predominantly agricultural crop production with the exception of several road crossings.

**Landcover / Habitat Impacted:** The land impacted by this project is currently in row crop production with the exception of several road crossings.

**Waterbodies Affected:** The project was designed to avoid all waterbodies. If any wetlands are identified along the route, they will be avoided to prevent impacts.

**Groundwater Resources Affected:** Riverview will seek a groundwater appropriation permit for the well field that this water line will connected to the dairy.

**Previous Natural Heritage Review:** No

**Previous Habitat Assessments / Surveys:** No

### SUMMARY OF AUTOMATED RESULTS

Category	Results	Response By Category
<b>Project Details</b>	No Comments	No Further Review Required
<b>Ecologically Significant Area</b>	No Comments	No Further Review Required
<b>State-Listed Endangered or Threatened Species</b>	No Comments	No Further Review Required
<b>State-Listed Species of Special Concern</b>	No Comments	No Further Review Required
<b>Federally Listed Species</b>	No Records	Visit IPaC For Federal Review





Minnesota Department of Natural Resources  
Division of Ecological & Water Resources  
500 Lafayette Road, Box 25  
St. Paul, MN 55155-4025

February 28, 2023

Project ID: MCE #2023-00150

Jason Kirwin  
Environmental Scientific  
46170 120TH ST  
Donnelly , MN 56235

RE: Automated Natural Heritage Review of the proposed West River Diary - Water Line Route (2-28-23)  
See Cover Page for location and project details.

Dear Jason Kirwin,

As requested, the above project has been reviewed for potential effects to rare features. Given the project details provided on the cover page, I do not believe the proposed project will negatively affect any known occurrences of rare features. To ensure compliance with federal law, conduct a federal regulatory review using the U.S. Fish and Wildlife Service's (USFWS) online [Information for Planning and Consultation \(IPaC\) tool](#).

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and the project description provided on the cover page. If project details change or construction has not occurred within one year, please resubmit the project for review.

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential effects to these rare features. For information on the environmental review process or other natural resource concerns, you may contact your [DNR Regional Environmental Assessment Ecologist](#).

Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources.

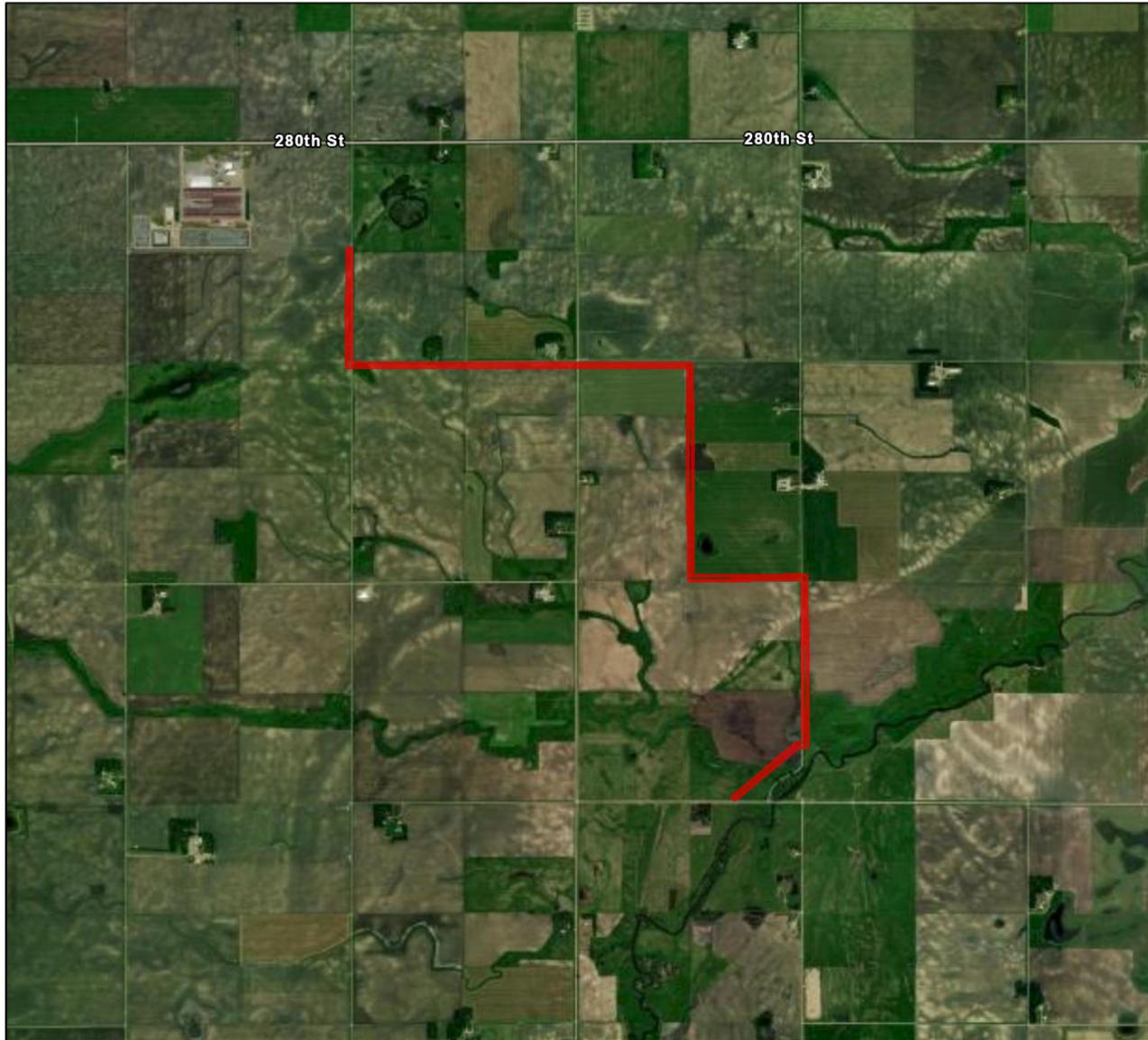
Sincerely,

*Jim Drake* Jim Drake  
Natural Heritage Review Specialist  
[James.F.Drake@state.mn.us](mailto:James.F.Drake@state.mn.us)

Links: USFWS Information for Planning and Consultation (IPaC) tool  
[Information for Planning and Consultation \(IPaC\) tool](#)  
DNR Regional Environmental Assessment Ecologist Contact Info  
[https://www.dnr.state.mn.us/eco/ereview/erp\\_regioncontacts.html](https://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html)

# West River Diary - Water Line Route (2-28-23)

Aerial Imagery With Locator Map



 Project Boundary

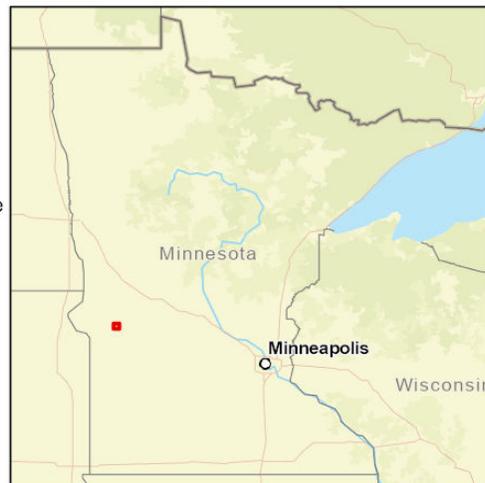
Project Type: Agriculture, Feedlots (submitted project boundary must include

Project Size (acres): 59.47

County(s): Stevens

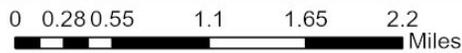
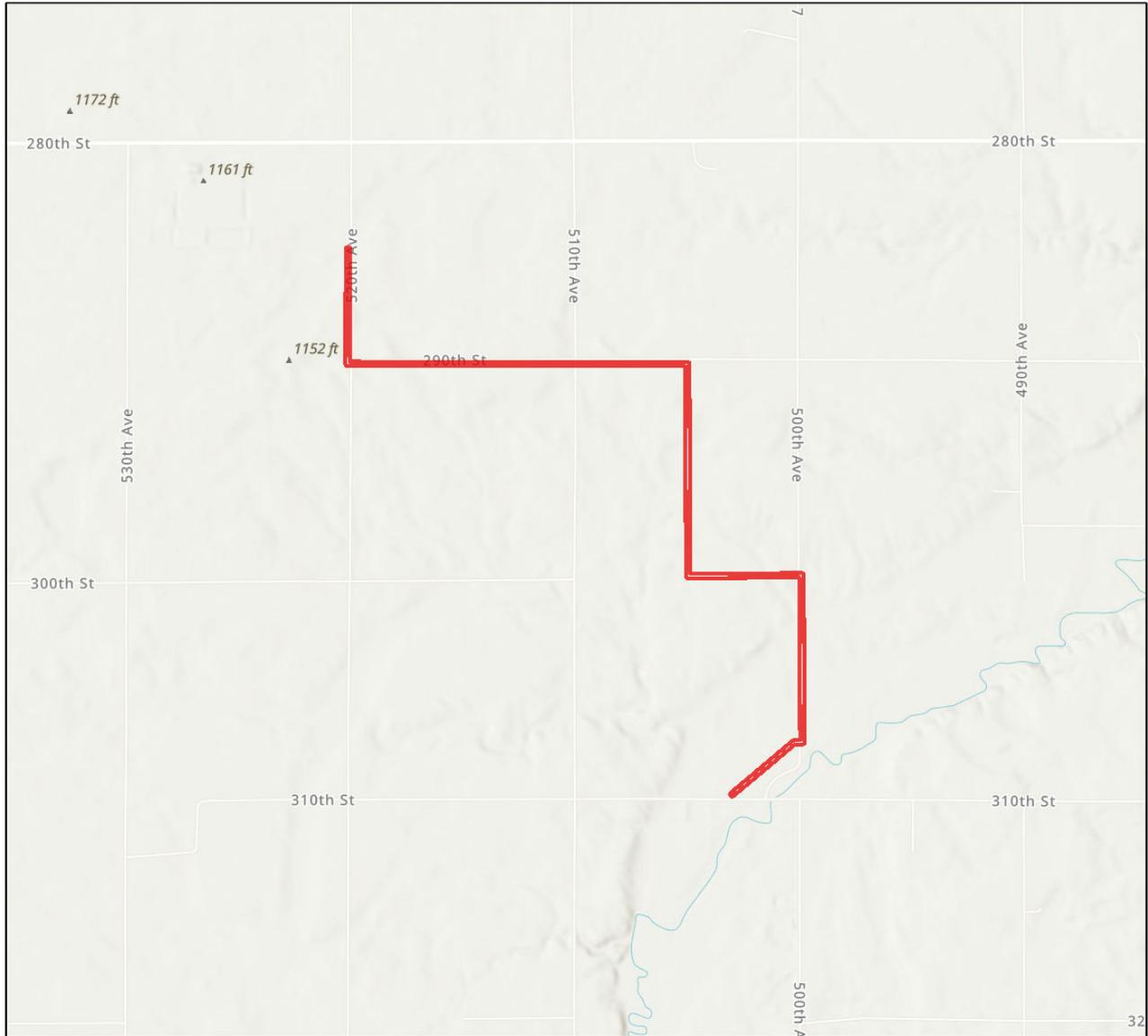
TRS: T123 R42 S16, T123 R42 S17, T123 R42 S7, T123 R42 S8, T123 R42 S9 +

Earthstar Geographics  
Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,  
EPA, NPS, USDA



# West River Diary - Water Line Route (2-28-23)

USA Topo Basemap With Locator Map



 Project Boundary

Project Type: Agriculture, Feedlots (submitted project boundary must include

Project Size (acres): 59.47

County(s): Stevens

TRS: T123 R42 S16, T123 R42 S17, T123 R42 S7, T123 R42 S8, T123 R42 S9 +

Esri, NASA, NGA, USGS, FEMA  
Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,  
EPA, NPS, USDA



# Attachment 7c

Conservation Planning Report for Manure Application Acres



## Conservation Planning Report: West River Dairy Manure Acres

**This document is intended for planning purposes only** for the area of interest defined by the user. The report identifies ecologically significant areas documented within the defined area of interest plus any additional search distance indicated below. These ecologically significant areas can be viewed in the Explore Tab of the Minnesota Conservation Explorer. Please visit [MN Geospatial Commons](#) for downloadable GIS data.

**This document does not meet the criteria for a Natural Heritage Review.** If a Natural Heritage Review is needed, please define an Area of Interest in the Explore Tab and click on the Natural Heritage Review option.

**This document does not include known occurrences of state-listed or federally listed species.**

### MBS Sites of Biodiversity Significance

*Search distance = 330 feet*

Minnesota Biological Survey (MBS) Sites of Biodiversity Significance are areas with varying levels of native biodiversity that may contain high quality native plant communities, rare plants, rare animals, and/or animal aggregations. A [Biodiversity Significance Rank](#) is assigned on the basis of the number of rare species, the quality of the native plant communities, size of the site, and context within the landscape. MBS Sites are ranked Outstanding, High, or Moderate. Areas ranked as Below were found to be disturbed and are retained in the layer as negative data. These areas do not meet the minimum biodiversity threshold for statewide significance but may have conservation value at the local level as habitat for native plants and animals, corridors for animal movements, buffers surrounding higher quality natural areas, or as areas with high potential for restoration of native habitat. The DNR recommends avoidance of MBS Sites of Biodiversity Significance ranked High or Outstanding.

Wetlands within MBS Sites of Outstanding or High Biodiversity Significance may be considered Rare Natural Communities under the Wetland Conservation Act. For technical guidance on Rare Natural Communities, please visit [WCA Program Guidance and Information](#).

For more information please visit [MBS Sites of Biodiversity Significance](#).

The following MBS Sites of Biodiversity Significance are within the search area:

MBS Site Name	Biodiversity Significance	Status
DRY WOOD HILL PRAIRIE	Below	final
FREEMAN WMA	Moderate	final
HEBERT 1	Below	final
HORTON 1	Below	final
Horton 3	Moderate	final
LAMPRECHT WPA	Below	final
LANDERS WPA	Below	final
MERO WPA	Below	final

## DNR Native Plant Communities

Search distance = 330 feet

A native plant community is a group of native plants that interact with each other and with their environment in ways not greatly altered by modern human activity or by introduced organisms. These groups of native plant species form recognizable units, such as oak savannas, pine forests, or marshes, that tend to repeat over space and time. Native plant communities are classified and described by considering vegetation, hydrology, landforms, soils, and natural disturbance regimes.

DNR Native Plant Community types and subtypes are given a [Conservation Status Rank](#) that reflects the relative rarity and endangerment of the community type in Minnesota. Conservation Status Ranks range from S1 (critically imperiled) to S5 (secure, common, widespread, and abundant). Native plant communities with a Conservation Status Rank of S1 through S3 are considered rare in the state. The DNR recommends avoidance of rare native plant communities.

Wetland native plant communities with a conservation status rank of S1 through S3 may also be considered Rare Natural Communities under the Wetland Conservation Act. For technical guidance on Rare Natural Communities, please visit [WCA Program Guidance and Information](#).

DNR Native Plant Communities may be given a Condition Rank that reflects the degree of ecological integrity of a specific occurrence of a native plant community. The Condition Rank is based on species composition, vegetation structure, ecological processes and functions, level of human disturbance, presence of exotic species, and other factors. Condition Ranks range from A-rank (excellent ecological integrity) to D-rank (poor ecological integrity). A Condition Rank of NR means Not Ranked and a Condition Rank of MULTI mean multiple ranks are present because the record is a native plant community complex.

For more information please visit [Minnesota's Native Plant Communities](#).

The following DNR Native Plant Communities are within the search area:

MBS Site Name	NPC Code	Native Plant Community Classification	Conservation Status Rank	Number of Communities
Horton 3	UPs13d	<a href="#">Dry Hill Prairie (Southern)</a>	S2	5

## Calcareous Fens

Search distance = 5 miles

A calcareous fen is a rare and distinctive peat-accumulating wetland that is legally protected in Minnesota under the Wetland Conservation Act (*Minnesota Statutes, section 103G.223*). Many of the unique characteristics of calcareous fens result from the upwelling of groundwater through calcareous substrates. Because of this dependence on groundwater hydrology, calcareous fens can be affected by nearby activities or even those several miles away. For more information regarding calcareous fens, please see the [Calcareous Fen Fact Sheet](#) or review the [List of Known Calcareous Fens](#).

**SEARCH RESULTS:** No features were found within the search area.

## DNR Old Growth Stands

Search distance = 330 feet

[Old-growth forests](#) are natural forests that have developed over a long period of time, generally at least 120 years, without experiencing severe, stand-replacing disturbances such as fires, windstorms, or logging. Old-growth forests are a unique, nearly vanished piece of Minnesota's history and ecology; less than 4% of Minnesota's old-growth forests remain. The DNR recommends avoidance of all DNR Old Growth Stands. The following DNR Old Growth Stands have been documented within the search area.

**SEARCH RESULTS:** No features were found within the search area.

## MN Prairie Conservation Plan

Search distance = 330 feet

The [Minnesota Prairie Conservation Plan](#), a twenty-five year strategy for accelerating prairie conservation in the state, identifies Core Areas, Corridors, and Corridor Complexes as areas to focus conservation efforts. The Plan's strategies include protection, enhancement, and restoration of grassland and wetland habitat. To meet the Plan's goals, approaches within Core Areas will need to include restoration and approaches within Corridors will need to include conservation of grassland habitat which can provide stepping stones between larger Core Areas.

The following MN Prairie Conservation Plan Designations are within the search area:

- Corridor: Agassiz Beach Ridges
- Corridor Complex: Scharf WMA

## Important Bird Areas

Search distance = 1 mile

[Important Bird Areas](#), identified by Audubon Minnesota in partnership with the DNR, are part of an international conservation effort aimed at conserving globally important bird habitats. They are voluntary and non-regulatory, but the designation demonstrates the significant ecological value of the area.

The following Important Birds Areas are within the search area:

- [Lac Qui Parle - Big Stone IBA](#)

## Lakes of Biological Significance

Search distance = 330 feet

[Lakes of Biological Significance](#) are high quality lakes as determined by the aquatic plant, fish, bird, or amphibian communities present within the lake. To be included in this layer, a lake only needs to meet the criteria for one of these four community types. The lake is assigned a biological significance of Outstanding, High, or Moderate based on the community with the highest quality.

**SEARCH RESULTS:** No features were found within the search area.

## USFWS Habitat Conservation Plans

A [Habitat Conservation Plan \(HCP\)](#) is a mechanism for compliance with the federal Endangered Species Act for a given set of activities and protected species. An HCP is required by the U.S. Fish and Wildlife Service (USFWS) as part of an application for an [incidental take permit \(ITP\)](#). The ITP allows the permit holder to proceed with activities covered in the HCP that could result in the unintentional take of federally listed species.

[Lakes States Forest Management Bat Habitat Conservation Plan \(Bat HCP\)](#): (search distance = 0; within area of interest only) This HCP was created to provide flexibility to the Minnesota Department of Natural Resources (DNR) to manage forests while addressing federal Endangered Species Act (ESA) regulations related to federally threatened and endangered bat species. The Bat HCP covers three bat species within Minnesota: northern long-eared bat, little brown bat, and tricolored bat. This report is intended to help non-federal, non-DNR landowners evaluate their potential eligibility for the Landowner Enrollment Program of the Bat HCP (For DNR-administered land, DNR staff should refer to the Bat HCP Implementation Policy).

[Landowner Enrollment Program](#) – DNR's incidental take permit may be extended through the Landowner Enrollment Program (LEP) to eligible non-federal landowners who conduct forest management activities. Landowners may be eligible to enroll in the LEP if they are a county land administrator, own more than 10,000 acres, or own land that overlaps a Bat HCP feature. The results below indicate if the defined area of interest overlaps a Bat HCP feature. For more information on how to enroll in the LEP, please visit the [Landowner Enrollment Program \(LEP\)](#).

**SEARCH RESULTS:** No Bat HCP features were found within the area of interest. Landowners are only eligible to apply for the Landowner Enrollment Program if they are a county land administrator or they own more than 10,000 acres.

## USFWS Regulatory Layers

To ensure compliance with federal law, conduct a federal regulatory review using the U.S. Fish and Wildlife Service's (USFWS) online [Information for Planning and Consultation \(IPaC\) tool](#). This report is not a substitution for a Section 7 review.

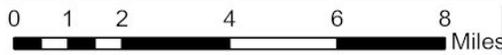
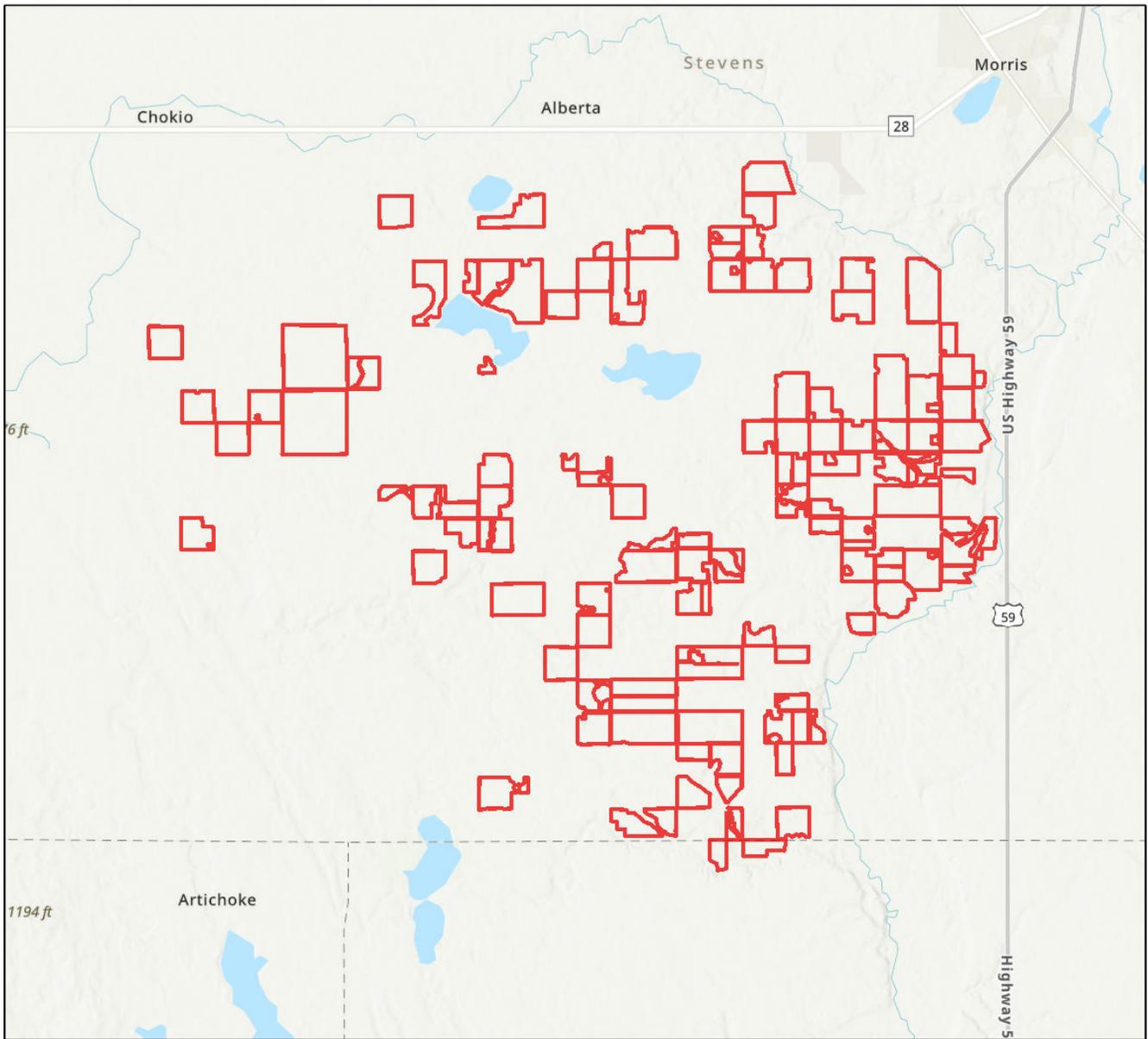
For informational purposes only, this tool currently checks the following USFWS Regulatory Layers:

**Rusty Patched Bumblebee High Potential Zones:** (*search distance = 0; within area of interest only*) The rusty patched bumble bee (*Bombus affinis*), federally listed as endangered, is likely to be present in suitable habitat within the high potential zones. From April through October this species uses underground nests in upland grasslands, shrublands, and forest edges, and forages where nectar and pollen are available. From October through April the species overwinters under tree litter in upland forests and woodlands. The rusty patched bumble bee may be impacted by a variety of land management activities including, but not limited to, prescribed fire, tree-removal, haying, grazing, herbicide use, pesticide use, land-clearing, soil disturbance or compaction, or use of non-native bees. The [USFWS RPBB guidance](#) provides guidance on avoiding impacts to rusty patched bumble bee and a key for determining if actions are likely to affect the species; the determination key can be found in the appendix. Please visit the [USFWS Rusty Patched Bumble Bee Map](#) for the most current locations of High Potential Zones.

**SEARCH RESULTS:** No features were found within the search area.

# West River Dairy Manure Acres

## Conservation Planning Map



 Area of Interest

Size (acres): 15,798.46

County(s): Stevens, Swift

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS  
Esri, NASA, NGA, USGS  
Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA,



# Attachment 7d

NHIS Search Results for Manure Application Acres



## Formal Natural Heritage Review - Cover Page

See next page for results of review. A draft watermark means the project details have not been finalized and the results are not official.

**Project Name:** West River Dairy Expansion: Clone Of 2023-00795

**Project Proposer:** Riverview LLP

**Project Type:** Agriculture, Feedlots (submitted project boundary must include manure application sites)

**Project Type Activities:** Other

**TRS:** T122 R42 S6, T122 R43 S1, T123 R42 S10, T123 R42 S15, T123 R42 S16, T123 R42 S17, T123 R42 S18, T123 R42 S19, T123 R42 S29, T123 R42 S3, T123 R42 S30, T123 R42 S31 +

**County(s):** Stevens, Swift

**DNR Admin Region(s):** Northwest, South

**Reason Requested:** State EAW

**Project Description:** The project includes just over 17,000 acres of land that area producers have offered for land application of manure (organic fertilizer) from the proposed West River Dairy expansion.

**Existing Land Uses:** All land within this project is currently in crop production. The proposed project will simply replace the inorganic fertilizer currently applied to the land, with organic fertilizer

**Landcover / Habitat Impacted:** All land within the proposed project is in crop production which already features annual fertilization.

**Waterbodies Affected:** There will be no rivers, intermittent streams, lakes, or wetlands that will be impacted by this project.

**Groundwater Resources Affected:** The manure application will follow state guidelines to prevent groundwater impacts.

**Previous Natural Heritage Review:** No

**Previous Habitat Assessments / Surveys:** No

### SUMMARY OF AUTOMATED RESULTS

Category	Results	Response By Category
<b>Project Details</b>	No Comments	No Further Review Required
<b>Ecologically Significant Area</b>	Comments	MBS Sites - Recommendations Potential Local Conservation Value Potential RNC under WCA
<b>State-Listed Endangered or Threatened Species</b>	Needs Further Review	State-protected Species - Needs Further Review
<b>State-Listed Species of Special Concern</b>	Comments	Recommendations
<b>Federally Listed Species</b>	No Records	Visit IPaC For Federal Review





June 19, 2025

**Project Name:** West River Dairy Expansion: Clone Of 2023-00795

**Project Proposer:** Riverview LLP

**Project Type:** Agriculture, Feedlots (submitted project boundary must include manure application sites)

**Project ID:** MCE #2023-00795-02

**AUTOMATED RESULTS: FURTHER REVIEW IS NEEDED**

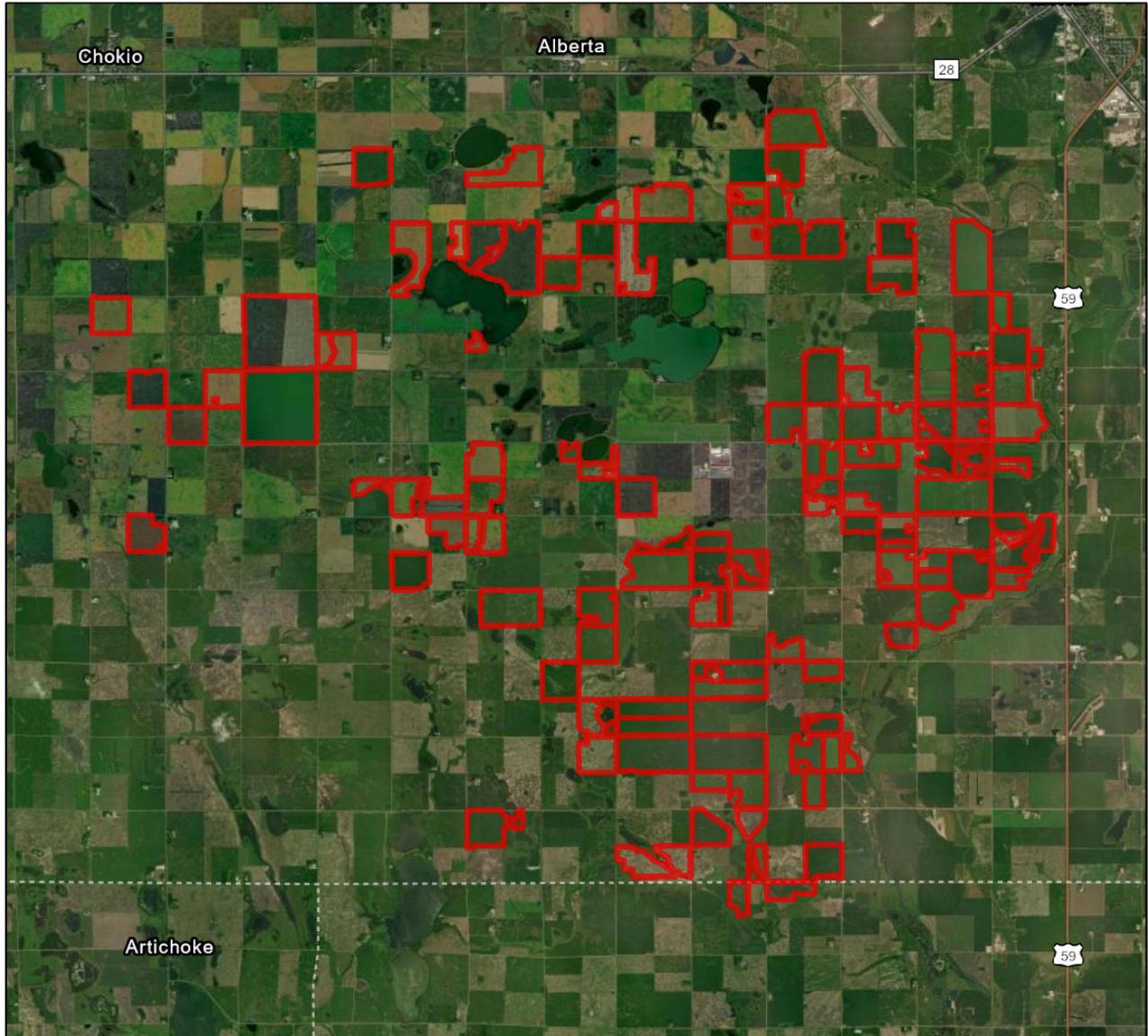
As requested, the above project has undergone an automated review for potential impacts to rare features. Based on this review, one or more rare features may be impacted by the proposed project and further review by the Natural Heritage Review Team is needed. You will receive a separate notification email when the review process is complete and the Natural Heritage Review letter has been posted.

Please refer to the table on the cover page of this report for a summary of potential impacts to rare features. For additional information or planning purposes, use the Explore Page in Minnesota Conservation Explorer to view the potentially impacted rare features or to create a Conservation Planning Report for the proposed project.

If you have additional information to help resolve the potential impacts listed in the summary results, please attach related project documentation in the Edit Details tab of the Project page. Relevant information includes, but is not limited to, additional project details, completed habitat assessments, or survey results. This additional information will be considered during the project review.

# West River Dairy Expansion: Clone Of 2023-00795

Aerial Imagery With Locator Map



 Project Boundary

Project Type: Agriculture, Feedlots (submitted project boundary must include

Project Size (acres): 15,798.48

County(s): Stevens, Swift

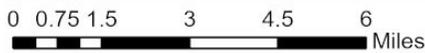
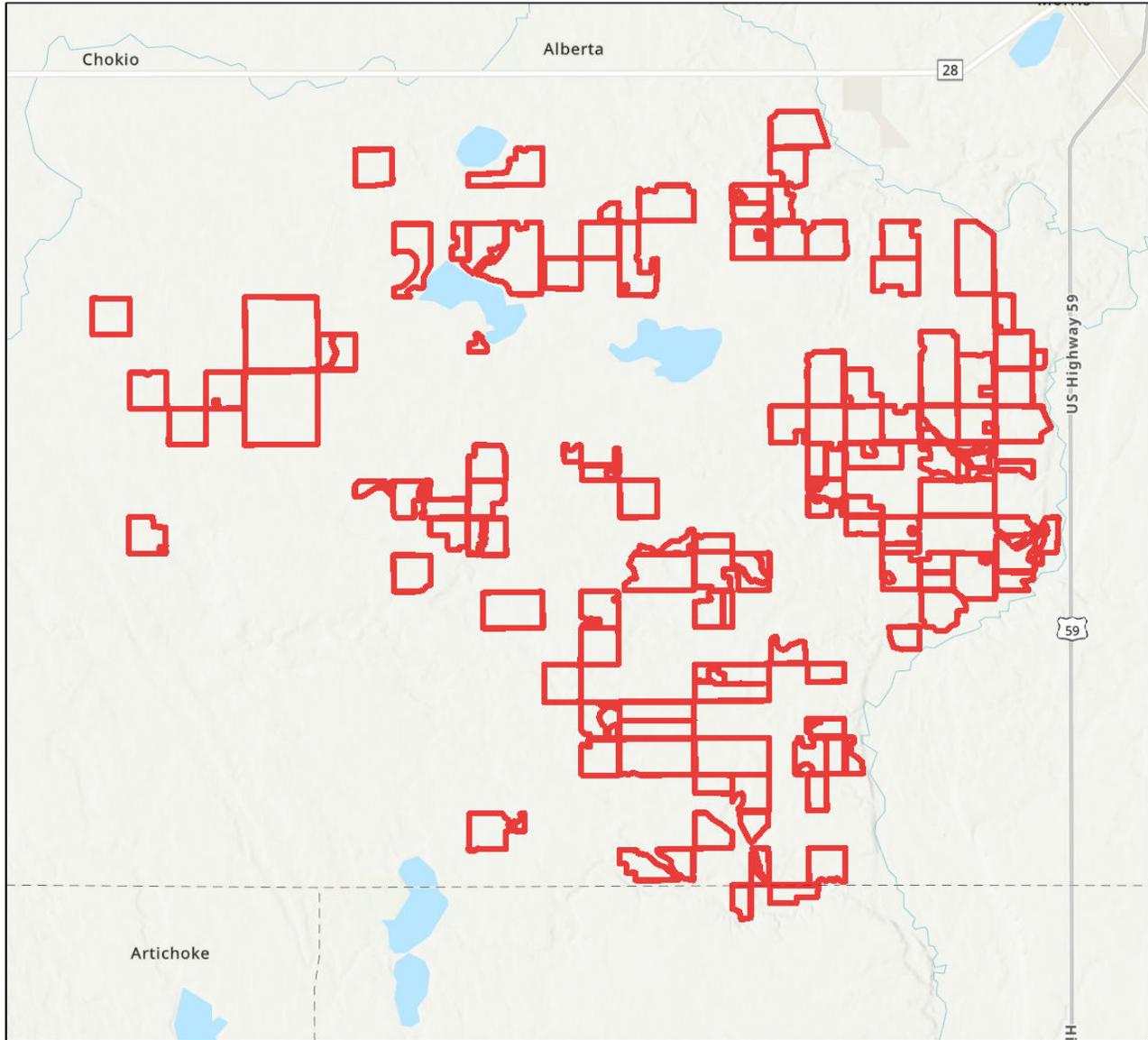
TRS: T122 R42 S6, T122 R43 S1, T123 R42 S10, T123 R42 S15, T123 R42 S16 +

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS  
Earthstar Geographics  
Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA,



# West River Dairy Expansion: Clone Of 2023-00795

USA Topo Basemap With Locator Map



 Project Boundary

Project Type: Agriculture, Feedlots (submitted project boundary must include

Project Size (acres): 15,798.48

County(s): Stevens, Swift

TRS: T122 R42 S6, T122 R43 S1, T123 R42 S10, T123 R42 S15, T123 R42 S16 +

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS  
Esri, NASA, NGA, USGS  
Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA,





Minnesota Department of Natural Resources  
 Division of Ecological & Water Resources  
 500 Lafayette Road, Box 25  
 St. Paul, MN 55155-4025

July 29, 2025

Jason Kirwin  
 Environmental Scientific

RE: Natural Heritage Review of the proposed West River Dairy Expansion: Clone Of 2023-00795,

County	Township (N)	Range (W)	Sections
Stevens	124	42	7, 18-21, 27-28, 30-34
Stevens	124	43	13-16, 18, 20-24, 28, 30
Stevens	124	44	25, 27, 34-36
Stevens	123	42	3-6, 8-10, 16-19, 29-31
Stevens	123	43	2-6, 8-9, 11-13, 15-16, 22-27, 33, 35-36
Stevens	123	44	10
Swift	122	42	6
Swift	122	43	1

Dear Jason Kirwin,

For all correspondence regarding the Natural Heritage Review of this project please include the project ID **MCE-2023-00795-02** in the email subject line.

As requested, the [Minnesota Natural Heritage Information System](#) has been reviewed to determine if the proposed project has the potential to impact any rare species or other significant natural features. Based on the project details provided with the request, the following rare features may be impacted by the proposed project:

#### *Ecologically Significant Areas*

- Three lakes near the proposed project area have been identified as Lakes of *High* Biological Significance. These are Gorder Lake, Clear Lake, and an unnamed lake in T124N R43W Section 13. Lakes of Biological Significance were ranked as *Outstanding, High, or Moderate* based on unique plant and animal presence. These lakes received their rank largely due to their bird populations.
- The Minnesota Biological Survey (MBS) has identified a Site of *Moderate* Biodiversity Significance adjacent to the proposed project in T123N R42W Section 3. Sites of Biodiversity Significance have varying levels of native biodiversity and are ranked based on the relative significance of this biodiversity at a statewide level. Sites ranked as *Moderate* contain occurrences of rare species and/or moderately disturbed native

plant communities, and/or landscapes that have a strong potential for recovery. This site has mapped examples of Dry Hill Prairie (Southern) (UPs13d) native plant community, which has a state conservation rank of Imperiled (S2).

The Minnesota Biological Survey (MBS) considered several areas very near the proposed project for Sites of Biodiversity Significance that did not meet the minimum biodiversity threshold for statewide significance. Despite being *Below* the statewide threshold, these areas may have conservation value at the local level as habitat for native plants and animals, corridors for animal movements, buffers surrounding higher quality natural areas, or as areas with high potential for restoration of native habitat.

MBS Sites of Biodiversity Significance, and areas ranked as *Below*, and DNR Native Plant Communities can be viewed using the Explore page in [Minnesota Conservation Explorer](#) or their GIS shapefiles can be downloaded from the [MN Geospatial Commons](#). Please contact the [NH Review Team](#) if you need assistance accessing the data. Reference the [MBS Site Biodiversity Significance](#) and [Native Plant Community](#) websites for information on interpreting the data. To receive a list of MBS Sites of Biodiversity Significance and DNR Native Plant Communities in the vicinity of your project, create a conservation planning report using the Explore page in Minnesota Conservation Explorer.

#### *State-listed Species*

- Elktoe (*Alasmidonta marginata*), a state-listed threatened mussel, was documented in the Pomme de Terre River in 2007 near the project area. The current status of this species near the project area is unknown. Mussels are particularly vulnerable to deterioration in water quality, such as increased siltation or nutrient loading.
- Small white lady's-slipper (*Cypripedium candidum*) and prairie mimosa (*Desmanthus illinoensis*), both state-listed plant species of special concern, have been documented near the proposed project area. These species can be found in mesic native prairie. Small white lady's-slipper can also occur in wet prairies and meadows while prairie mimosa has been found on sandy lakeshores.
- Please visit the [DNR Rare Species Guide](#) for more information on the habitat use of these species and recommended measures to avoid or minimize impacts.
- **To benefit all of the above rare species and features, we recommend that manure application rates and timing be carefully determined to ensure that nutrient input does not exceed the ability for crop nutrient uptake on the fields where it is applied.**

#### *Federally Protected Species*

- To ensure compliance with federal law, conduct a federal regulatory review using the U.S. Fish and Wildlife Service's (USFWS) online [Information for Planning and Consultation \(IPaC\) tool](#).

### *Environmental Review and Permitting*

- Please include a copy of this letter and the MCE-generated Final Project Report in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available and is the most complete source of data on Minnesota's native plant communities, rare species, and other rare features. However, the NHIS is not an exhaustive inventory and does not contain the locations of all rare features in the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and project description provided with the request. **If project details change or the project has not occurred within one year, please resubmit the project for review within one year of initiating project activities.** Resubmit by selecting *Clone Project as Draft* on the project page in MCE.

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential impacts to these rare features. Visit [Natural Heritage Review](#) for additional information regarding this process, survey guidance, and other related information. For information on the environmental review process or other natural resource concerns, please contact your [DNR Regional Environmental Assessment Ecologist](#).

Thank you for consulting us on this matter and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

*James Drake*

Natural Heritage Review Specialist

[james.f.drake@state.mn.us](mailto:james.f.drake@state.mn.us)

Cc: Owen Baird, Haley Byron



## Formal Natural Heritage Review - Cover Page

See next page for results of review. A draft watermark means the project details have not been finalized and the results are not official.

**Project Name:** West River Dairy Expansion

**Project Proposer:** Riverview LLP

**Project Type:** Agriculture, Feedlots (submitted project boundary must include manure application sites)

**Project Type Activities:** Other

**TRS:** T122 R42 S6, T122 R43 S1, T123 R42 S10, T123 R42 S15, T123 R42 S16, T123 R42 S17, T123 R42 S18, T123 R42 S19, T123 R42 S29, T123 R42 S3, T123 R42 S30, T123 R42 S31 +

**County(s):** Stevens, Swift

**DNR Admin Region(s):** Northwest, South

**Reason Requested:** State EAW

**Project Description:** The project includes just over 17,000 acres of land that area producers have offered for land application of manure (organic fertilizer) from the proposed West River Dairy expansion.

**Existing Land Uses:** All land within this project is currently in crop production. The proposed project will simply replace the inorganic fertilizer currently applied to the land, with organic fertilizer

**Landcover / Habitat Impacted:** All land within the proposed project is in crop production which already features annual fertilization.

**Waterbodies Affected:** There will be no rivers, intermittent streams, lakes, or wetlands that will be impacted by this project.

**Groundwater Resources Affected:** The manure application will follow state guidelines to prevent groundwater impacts.

**Previous Natural Heritage Review:** No

**Previous Habitat Assessments / Surveys:** No

### SUMMARY OF AUTOMATED RESULTS

Category	Results	Response By Category
Project Details	No Comments	No Further Review Required
Ecologically Significant Area	No Comments	No Further Review Required
State-Listed Endangered or Threatened Species	Needs Further Review	State-protected Species in Vicinity
State-Listed Species of Special Concern	Comments	Recommendations
Federally Listed Species	No Records	Visit IPaC For Federal Review



October 17, 2023

**Project Name:** West River Dairy Expansion

**Project Proposer:** Riverview LLP

**Project Type:** Agriculture, Feedlots (submitted project boundary must include manure application sites)

**Project ID:** MCE #2023-00795

**AUTOMATED RESULTS: FURTHER REVIEW IS NEEDED**

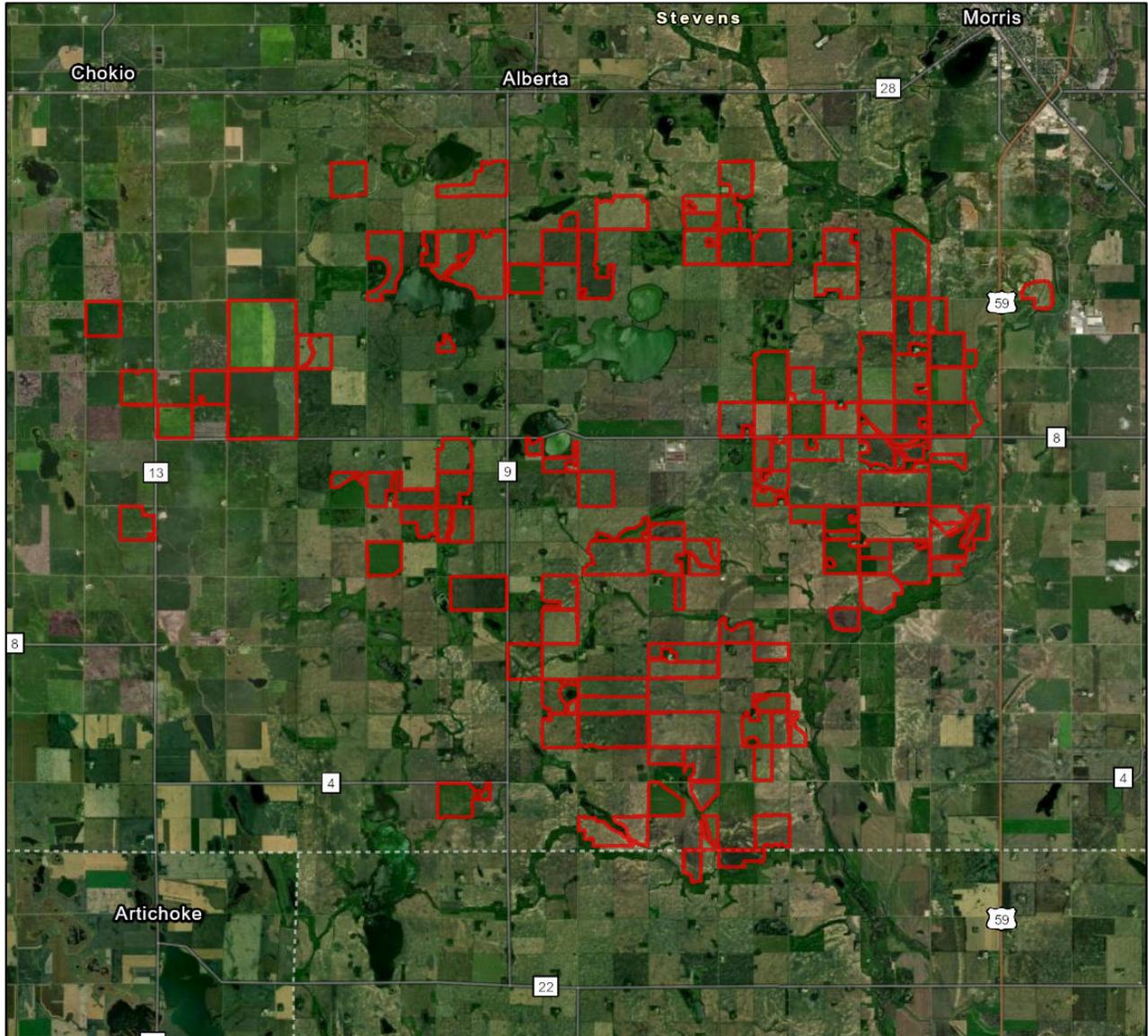
As requested, the above project has undergone an automated review for potential impacts to rare features. Based on this review, one or more rare features may be impacted by the proposed project and further review by the Natural Heritage Review Team is needed. You will receive a separate notification email when the review process is complete and the Natural Heritage Review letter has been posted.

Please refer to the table on the cover page of this report for a summary of potential impacts to rare features. For additional information or planning purposes, use the Explore Page in Minnesota Conservation Explorer to view the potentially impacted rare features or to create a Conservation Planning Report for the proposed project.

If you have additional information to help resolve the potential impacts listed in the summary results, please attach related project documentation in the Edit Details tab of the Project page. Relevant information includes, but is not limited to, additional project details, completed habitat assessments, or survey results. This additional information will be considered during the project review.

# West River Dairy Expansion

Aerial Imagery With Locator Map



 Project Boundary

Project Type: Agriculture, Feedlots (submitted project boundary must include

Project Size (acres): 15,730.78

County(s): Stevens, Swift

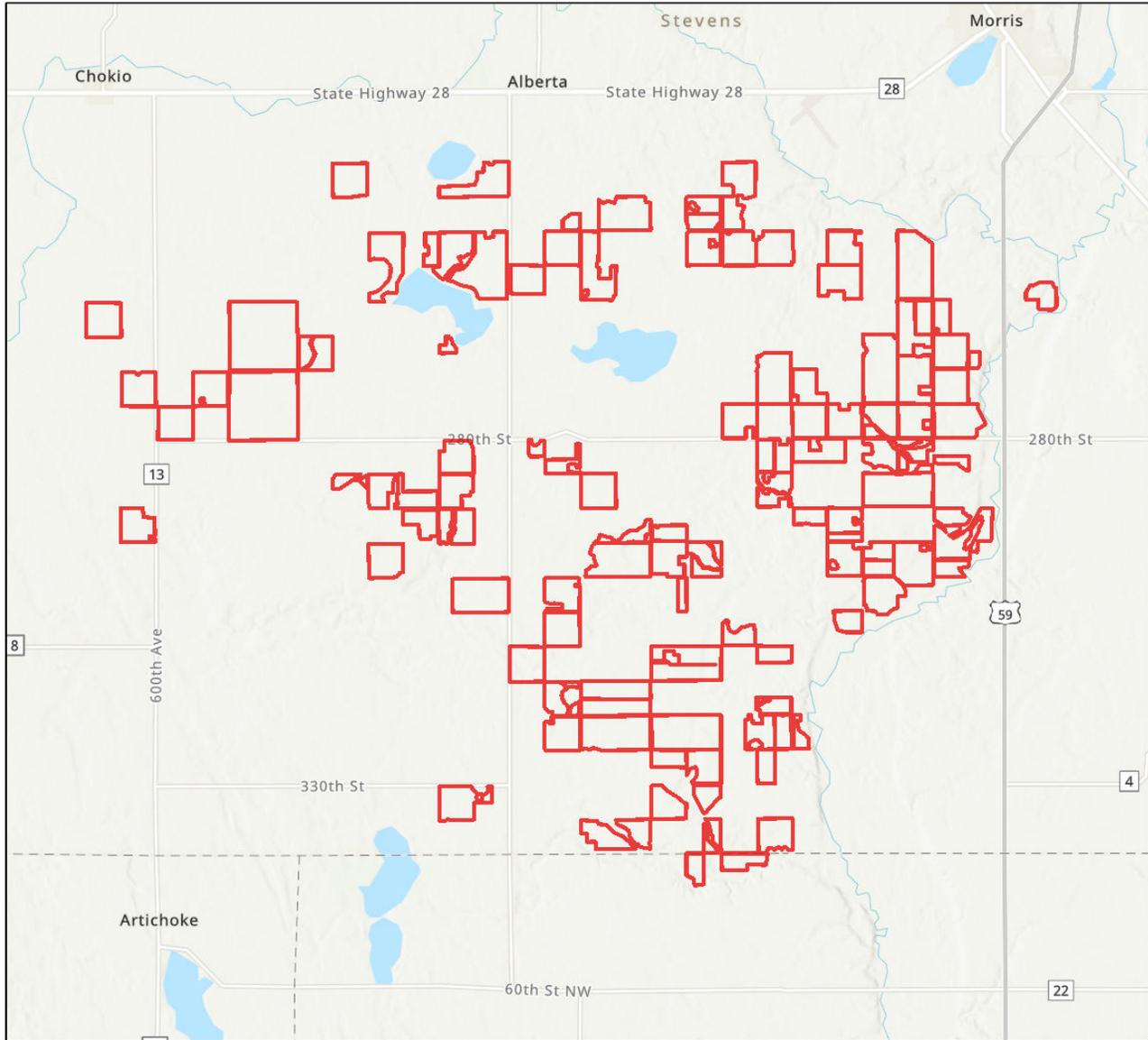
TRS: T122 R42 S6, T122 R43 S1, T123 R42 S10, T123 R42 S15, T123 R42 S16 +

Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA  
Earthstar Geographics  
Esri, HERE, Garmin, FAO, NOAA, USGS, EPA



# West River Dairy Expansion

USA Topo Basemap With Locator Map



 Project Boundary

Project Type: Agriculture, Feedlots (submitted project boundary must include

Project Size (acres): 15,730.78

County(s): Stevens, Swift

TRS: T122 R42 S6, T122 R43 S1, T123 R42 S10, T123 R42 S15, T123 R42 S16 +

Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA  
Esri, NASA, NGA, USGS  
Esri, HERE, Garmin, FAO, NOAA, USGS, EPA





**Minnesota Department of Natural Resources**  
**Division of Ecological & Water Resources**  
**500 Lafayette Road, Box 25**  
**St. Paul, MN 55155-4025**

December 22, 2023

**Correspondence # MCE 2023-00795**

Jason Kirwin  
Riverview LLP

RE: Natural Heritage Review of the proposed West River Dairy Expansion,

County	Township (N)	Range (W)	Sections
Stevens	124	42	18-21, 23, 26-28, 30-34
Stevens	124	43	13-16, 18, 20-24, 30
Stevens	124	44	25, 27, 34-36
Stevens	123	42	3-6, 8-10, 16-19, 30-31
Stevens	123	43	2-6, 8-9, 11-13, 15-16, 22-27, 33, 35-36
Stevens	123	44	10
Swift	122	42	6
Swift	122	43	1

Dear Jason Kirwin,

As requested, the [Minnesota Natural Heritage Information System](#) has been reviewed to determine if the proposed project has the potential to impact any rare species or other significant natural features. Based on the project details provided with the request, the following rare features may be impacted by the proposed project:

*Ecologically Significant Areas*

- Three lakes near the proposed project area have been identified as Lakes of *High* Biological Significance. These are Gorder Lake, Clear Lake, and an unnamed lake in T124N R43W Section 13. Lakes of Biological Significance were ranked as *Outstanding, High, or Moderate* based on unique plant and animal presence. These lakes received their rank largely due to their bird populations.

- The Minnesota Biological Survey (MBS) considered several areas very near the proposed project for Sites of Biodiversity Significance that did not meet the minimum biodiversity threshold for statewide significance. Despite being *Below* the statewide threshold, these areas may have conservation value at the local level as habitat for native plants and animals, corridors for animal movements, buffers surrounding higher quality natural areas, or as areas with high potential for restoration of native habitat. As such, indirect impacts from surface runoff or the spread of invasive species should be considered during project design and implementation.

MBS Sites of Biodiversity Significance, and areas ranked as *Below*, and DNR Native Plant Communities can be viewed using the Explore page in [Minnesota Conservation Explorer](#) or their GIS shapefiles can be downloaded from the [MN Geospatial Commons](#). Please contact the [NH Review Team](#) if you need assistance accessing the data. Reference the [MBS Site Biodiversity Significance](#) and [Native Plant Community](#) websites for information on interpreting the data. To receive a list of MBS Sites of Biodiversity Significance and DNR Native Plant Communities in the vicinity of your project, create a conservation planning report using the Explore page in Minnesota Conservation Explorer.

#### *State-listed Species*

- Elktoe (*Alasmidonta marginata*), a state-listed threatened mussel, was documented in the Pomme de Terre River in 2007 near the project area. The current status of this species in the river near the project area is unknown. Mussels are particularly vulnerable to deterioration in water quality, such as increased siltation or nutrient loading.
- Small white lady's-slipper (*Cypripedium candidum*) and prairie mimosa (*Desmanthus illinoensis*), both state-listed plant species of special concern, have been documented near the proposed project area. These species can be found in mesic native prairie. Small white lady's-slipper can also occur in wet prairies and meadows while prairie mimosa has been found on sandy lakeshores.
- Please visit the [DNR Rare Species Guide](#) for more information on the habitat use of these species and recommended measures to avoid or minimize impacts.
- **To benefit all of the above rare species and features, we recommend that manure application rates and timing be carefully determined to ensure that nutrient input does not exceed the ability for crop nutrient uptake on the fields where it is applied.**

#### *Federally Protected Species*

- To ensure compliance with federal law, conduct a federal regulatory review using the U.S. Fish and Wildlife Service's (USFWS) online [Information for Planning and Consultation \(IPaC\) tool](#).

## *Environmental Review and Permitting*

- The Environmental Assessment Worksheet should address whether the proposed project has the potential to adversely affect the above rare features and, if so, it should identify specific measures that will be taken to avoid or minimize disturbance. Sufficient information should be provided so the DNR can determine whether a takings permit will be needed for any of the above protected species.
- Please include a copy of this letter and the MCE-generated Final Project Report in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and project description provided with the request. If project details change or the project has not occurred within one year, please resubmit the project for review within one year of initiating project activities.

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential impacts to these rare features. Visit the [Natural Heritage Review website](#) for additional information regarding this process, survey guidance, and other related information. For information on the environmental review process or other natural resource concerns, you may contact your [DNR Regional Environmental Assessment Ecologist](#).

Thank you for consulting us on this matter and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

A handwritten signature in black ink that reads "James Drake". The signature is written in a cursive style with a large, prominent "D" in "Drake".

James Drake  
Natural Heritage Review Specialist  
[James.F.Drake@state.mn.us](mailto:James.F.Drake@state.mn.us)

Cc: Owen Baird, Haley Byron,

Field Number	Township Name	County	Section	Township	Range	Field Legal Description	Signed Approx. Tillable Acres	Grower Name	Field Common Name	Notes
2955	Fairfield	Swift	6	122N	42W	N1/2 of NW1/4	89	Kevin Koehl (4K Farms)		
2115	Horton	Stevens	3	123N	42W	N1/2 S1/2 of NW1/4	40	Doubletree Farm		
2116	Horton	Stevens	4	123N	42W	SE1/4 of S1/2 of NE1/4	15	Doubletree Farm		
2018E	Horton	Stevens	4	123N	42W	NE1/4	110	Doubletree Farm	Eystad	
2025	Horton	Stevens	4	123N	42W	S1/2	310	Gary Nohl (GNH/SAYON)	Rinkies	
2018W	Horton	Stevens	4	123N	42W	NW1/4	121	Keith & Brent Koehl		
2087	Horton	Stevens	5	123N	42W	S1/2 of S1/2 SW1/4	66	Robert Rinkenberger		
2021	Horton	Stevens	5	123N	42W	N1/2 of NW1/4 & W1/2 of NE1/4	139	Spring Valley Farms	Hanrahans	
2038	Horton	Stevens	6	123N	42W	N1/2 of SE1/4	73	Joey Rinkenberger		
2041	Horton	Stevens	6	123N	42W	W1/2 of NE1/4	73	Joey Rinkenberger		
2133	Horton	Stevens	6	123N	42W	S1/2 of SE1/4	60	Joey Rinkenberger		
2042	Horton	Stevens	6	123N	42W	E1/2 of NE1/4	70	Shane Joos		
2033	Horton	Stevens	8	123N	42W	N1/2 of NW1/4	74	Doubletree Farm		
2134	Horton	Stevens	8	123N	42W	N1/2 of NE1/4 & N1/2 of S1/2 of NE1/4	115	Joey Rinkenberger		
2029	Horton	Stevens	8	123N	42W	SE1/4	145	Riverview LLP	Knobloch's	
2031	Horton	Stevens	8	123N	42W	S1/2 of S1/2 NE1/4	40	Robert Rinkenberger		
2076	Horton	Stevens	9	123N	42W	SE1/4	210	Byron Wulf (Wulf Farms)		
2028	Horton	Stevens	9	123N	42W	S1/2 of SW1/4 NW1/4	66	Robert Rinkenberger		
2135	Horton	Stevens	9	123N	42W	N1/2 of SW1/4	66	Robert Rinkenberger		
2080	Horton	Stevens	10	123N	42W	N1/2 of NW1/4	72	Keith & Brent Koehl		
2090	Horton	Stevens	10	123N	42W	S1/2 of SW1/4	67	Keith & Brent Koehl		
2091	Horton	Stevens	10	123N	42W	N1/2 of SW1/4 & S1/2 of NW1/4	149	Keith & Brent Koehl		
2124	Horton	Stevens	10	123N	42W	W1/2 of NE1/4 & NW40 of SE1/4	113	Keith & Brent Koehl		
2125	Horton	Stevens	16	123N	42W	NW1/4	174	Spring Valley Farms	N Irrigator	
2126	Horton	Stevens	17	123N	42W	N1/2 of SE1/4	90	Spring Valley Farms		
2118	Horton	Stevens	18	123N	42W	NW1/4 of SE1/4	46	Doubletree Farm		
2961	Horton	Stevens	18	123N	42W	S1/2 of S1/2	156	Spring Valley Farms	Murphy North	
2970	Horton	Stevens	19	123N	42W	S1/2 of SE1/4	72	Doubletree Farm		
2962	Horton	Stevens	19	123N	42W	N1/2 of NE1/4	75	Spring Valley Farms	Murphy South	
2956	Horton	Stevens	29	123N	42W	W80 of NW1/4	62	Kevin Koehl (4K Farms)	2956E	
2968	Horton	Stevens	30	123N	42W	W1/2 of SE1/4	78	Doubletree Farm		
2969	Horton	Stevens	30	123N	42W	W1/2 of NE1/4 & E30 of NW1/4	110	Doubletree Farm		
2956	Horton	Stevens	30	123N	42W	E80 of NE1/4	72	Kevin Koehl (4K Farms)	2956W	
2974	Horton	Stevens	31	123N	42W	SE1/4	145	Spring Valley Farms	Horton 31	
2128	Darnen	Stevens	7	124N	42W	SW1/4 & W1/2 of SE1/4	232	Spring Valley Farms	Kroenings	
2129	Darnen	Stevens	18	124N	42W	NW1/4 & W1/2 of SW1/4	207	Spring Valley Farms		
2957E	Darnen	Stevens	19	124N	42W	NE1/4	158	Jim Domnick		
2957W	Darnen	Stevens	19	124N	42W	NW1/4	146	Jim Domnick		
2971	Darnen	Stevens	20	124N	42W	NE1/4	144	Jim Domnick		
2094	Darnen	Stevens	20	124N	42W	SE1/4	160	Joey Rinkenberger		
2901	Darnen	Stevens	21	124N	42W	E1/2	309	Spring Valley Farms		
1007N	Darnen	Stevens	23	124N	42W	SE40 of SW1/4 and SW40 of SE1/4	60	Riverview LLP	West Irrigator N	Field removed per comment form MPCA
1007S	Darnen	Stevens	26	124N	42W	NW1/4 or NE1/4	22	Riverview LLP	West Irrigator S	Field removed per comment form MPCA
1021	Darnen	Stevens	27	124N	42W	SW1/4	155	Doubletree Farm		
2117	Darnen	Stevens	27	124N	42W	SW1/4 of SE1/4	34	Doubletree Farm		
1106	Darnen	Stevens	27	124N	42W	W1/2 of NW1/4	74	Spring Valley Farms		
2015N	Darnen	Stevens	28	124N	42W	SW1/4	155	Doubletree Farm		
2016CN	Darnen	Stevens	28	124N	42W	S1/2 of SE1/4	53	Doubletree Farm	Reuben's 200 N	
2016N	Darnen	Stevens	28	124N	42W	W1/2 of NE1.4 & N1/2 of SE1/4	155	Doubletree Farm		Field removed per comment from State Archeologist
2089	Darnen	Stevens	28	124N	42W	E1/2 of NE1/4	76	Keith & Brent Koehl		Field removed per comment from State Archeologist
2009N	Darnen	Stevens	30	124N	42W	S1/2 of SE1/4	78	Riverview LLP	Sommer N	

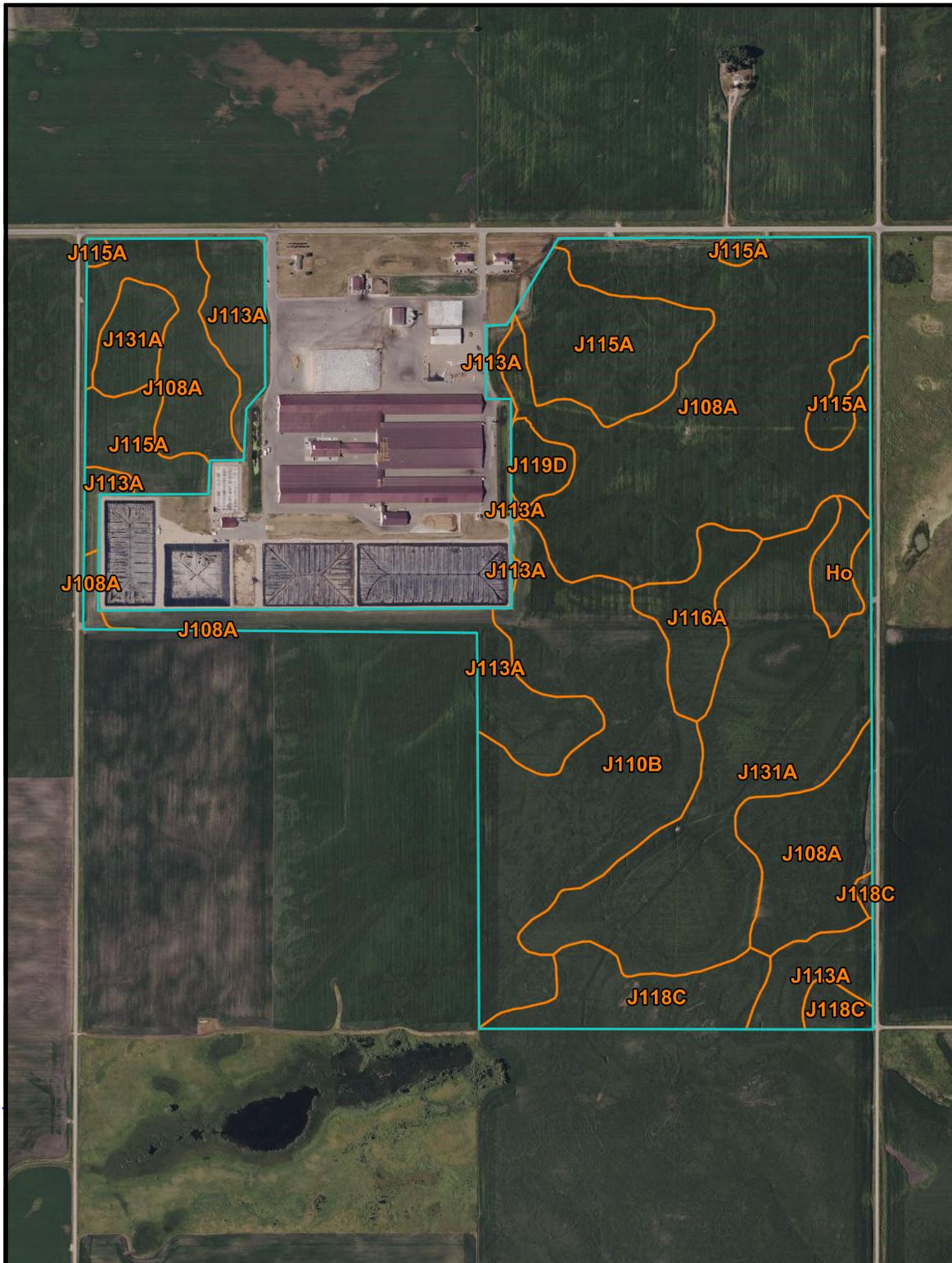
Field Number	Township Name	County	Section	Township	Range	Field Legal Description	Signed Approx. Tillable Acres	Grower Name	Field Common Name	Notes
2045	Darnen	Stevens	31	124N	42W	SW1/4	144	Kevin Koehl (4K Farms)		
2009S	Darnen	Stevens	31	124N	42W	NE1/4	157	Riverview LLP	Sommer S	
2019	Darnen	Stevens	32	124N	42W	SE1/4	145	John & Dick Mahoney		
2020	Darnen	Stevens	32	124N	42W	SW1/4	155	Riverview LLP	Stahman's	
2012W	Darnen	Stevens	32	124N	42W	NW1/4	122	Riverview LLP	Leo's West	
2015S	Darnen	Stevens	33	124N	42W	NW1/4	155	Doubletree Farm		
2016CS	Darnen	Stevens	33	124N	42W	NE1/4	150	Doubletree Farm	Reuben's 200 S	
2016S	Darnen	Stevens	33	124N	42W	SE1/4	147	Doubletree Farm	Reubens House	
2017	Darnen	Stevens	33	124N	42W	SW1/4	143	John & Dick Mahoney		
1025	Darnen	Stevens	34	124N	42W	SW1/4 & W1/2 of SE1/4	223	Doubletree Farm		
1023	Darnen	Stevens	34	124N	42W	NW1/4	158	Spring Valley Farms	Rileys	
2967	Hegbert	Swift	1	122N	43W	W1/2 of NE1/4	67	MTM Farms		
2061	Synnes	Stevens	2	123N	43W	SW1/4	158	Riverview LLP		
2059	Synnes	Stevens	3	123N	43W	NE1/4	80	Staples Farms Inc. (Ron)		
2099	Synnes	Stevens	3	123N	43W	NE40 of NW1/4	35	Staples Farms Inc. (Ron)		
2975	Synnes	Stevens	4	123N	43W	SW1/4	140	Staples Farms Inc. (Ron)		
2910	Synnes	Stevens	4	123N	43W	NW1/4	160	Taylor & Corey Nohl		
4020	Synnes	Stevens	5	123N	43W	S1/2 of SE1/4	99	Dwayne Nelson		
4028E	Synnes	Stevens	5	123N	43W	SW1/4	99	Dwayne Nelson		
4028W	Synnes	Stevens	6	123N	43W	N1/2 of SE1/4	37	Dwayne Nelson		
4008	Synnes	Stevens	8	123N	43W	SW1/4	152	Riverview LLP	Nuests	
4012	Synnes	Stevens	8	123N	43W	NE1/4	101	Riverview LLP	Hauglands	
2976	Synnes	Stevens	9	123N	43W	NW1/4	140	Staples Farms Inc. (Ron)		
2068	Synnes	Stevens	11	123N	43W	S80 of NE1/4	73	Riverview LLP	Kermits	
2105	Synnes	Stevens	11	123N	43W	S1/2	269	Spring Valley Farms	Dewalls	
2066	Synnes	Stevens	12	123N	43W	SE1/4	136	Keith Maus		
2067N	Synnes	Stevens	12	123N	43W	S1/2 of NW1/4	70	Keith Maus		
2067S	Synnes	Stevens	12	123N	43W	SW1/4	148	Keith Maus		
2098E	Synnes	Stevens	13	123N	43W	E1/2 of E1/2 of NW1/4	55	Keith Maus		
2098W	Synnes	Stevens	13	123N	43W	NW1/4	87	Keith Maus		
2106	Synnes	Stevens	15	123N	43W	NE1/4	150	Staples Farms Inc. (Ron)		
2958	Synnes	Stevens	15	123N	43W	SE1/4 S15 T123N R43W	162	Staples Farms Inc. (Ron)		
2966	Synnes	Stevens	16	123N	43W	N1/2 S16 T123N R43W	245	MTM Farms		
2122	Synnes	Stevens	22	123N	43W	SE1/4 S22 T123N R43W	124	Keith Maus		
2127	Synnes	Stevens	22	123N	43W	NW1/4 S22 T123N R43W	143	Spring Valley Farms	Toullos	
2086N	Synnes	Stevens	23	123N	43W	N1/2 of S1/2 S23 T123N R43W	158	MTM Farms		
2086S	Synnes	Stevens	23	123N	43W	S1/2 of S1/2	156	MTM Farms		
2082N	Synnes	Stevens	24	123N	43W	N1/2 of N1/2	140	MTM Farms		
2082S	Synnes	Stevens	24	123N	43W	S1/2 of N1/2	151	MTM Farms		
2092	Synnes	Stevens	25	123N	43W	SE1/4 S25	145	MTM Farms		
2963	Synnes	Stevens	25	123N	43W	N1/2 of SW1/4	78	MTM Farms		
2072	Synnes	Stevens	25	123N	43W	N1/2	316	Riverview LLP	Bourdages	
2078	Synnes	Stevens	26	123N	43W	N1/2	312	Spring Valley Farms	Greens	
2123	Synnes	Stevens	27	123N	43W	NE1/4	150	Keith Maus		
4023	Synnes	Stevens	33	123N	43W	NW1/4	176	Riverview LLP	Telford	
2973	Synnes	Stevens	35	123N	43W	S1/2	243	Keith & Brent Koehl		
2978	Synnes	Stevens	36	123N	43W	E1/2 of SE1/4	72	Joey Rinckenberger		
2954	Synnes	Stevens	36	123N	43W	NW1/4	136	Kevin Koehl (4K Farms)		
2965	Synnes	Stevens	36	123N	43W	NE1/4	79	MTM Farms		
2120	Scott	Stevens	13	124N	43W	N1/2 of SE1/4	72	John & Dick Mahoney		
2121	Scott	Stevens	13	124N	43W	S1/2 of SE1/4	75	John & Dick Mahoney		
2108	Scott	Stevens	14	124N	43W	SE1/4 and E1/2 of SW1/4	225	Byron Wulf (Wulf Farms)		
2952	Scott	Stevens	15	124N	43W	SE1/4 of SE1/4	39	Kevin Koehl (4K Farms)		
2130	Scott	Stevens	16	124N	43W	N1/2	232	Spring Valley Farms	Orlynes	
4000	Scott	Stevens	18	124N	43W	NE1/4	152	Riverview LLP		
2131	Scott	Stevens	20	124N	43W	W1/2	215	Spring Valley Farms	Enquist	
2132	Scott	Stevens	20	124N	43W	E1/2 of NE1/4	67	Spring Valley Farms	Hattie	
2077	Scott	Stevens	21	124N	43W	All	544	Kevin Koehl (4K Farms)	Pieskes	
2964	Scott	Stevens	22	124N	43W	SW1/4	149	Doubletree Farm		

Field Number	Township Name	County	Section	Township	Range	Field Legal Description	Signed Approx. Tillable Acres	Grower Name	Field Common Name	Notes
2950	Scott	Stevens	22	124N	43W	NE1/4	155	Kevin Koehl (4K Farms)		
2951	Scott	Stevens	23	124N	43W	SW1/4 & W1/2 of NW1/4	216	Kevin Koehl (4K Farms)	Andersons	
2001	Scott	Stevens	24	124N	43W	NE1/4	148	Jim Domnick		
2972	Scott	Stevens	28	124N	43W	NW40 of SW1/4	26	Keith & Brent Koehl		
4003	Scott	Stevens	30	124N	43W	SW1/4	145	Riverview LLP		
4007	Stevens	Stevens	10	123N	44W	NE1/4	144	Riverview LLP		
4001	Baker	Stevens	25	124N	44W	All	620	Riverview LLP		
4019	Baker	Stevens	27	124N	44W	NW1/4	157	Riverview LLP		
4016	Baker	Stevens	34	124N	44W	NE 1/4	155	Riverview LLP		
4005	Baker	Stevens	35	124N	44W	NE1/4	155	Riverview LLP		
4018	Baker	Stevens	35	124N	44W	SW1/4	152	Riverview LLP		
4004	Baker	Stevens	36	124N	44W	All	617	Riverview LLP		
						<b>Final Total</b>	16982			
						<b>Adjusted Total</b>	<b>16,669</b>			
										Fields voluntarily removed by Riverview to avoid potential impacts.

# Attachment 9

Soils Map for Project Site

Section 01 - T123N - R43W  
Synnes Township - Stevens County



USDA Soils Map - Project Site  
West River Dairy Expansion



Map Scale: 1:12,200 if printed on A portrait (8.5" x 11") sheet.

-  Approximate Project Site
-  Soil Map Unit

**ENVIRONMENTAL  
SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ho	Hegne clay	4.7	1.4%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	117.1	33.6%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	56.0	16.1%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	38.3	11.0%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	33.3	9.5%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	10.7	3.1%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	18.4	5.3%
J119D	Barnes-Svea-Buse complex, 3 to 15 percent slopes	3.8	1.1%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	66.4	19.0%
<b>Totals for Area of Interest</b>		<b>348.6</b>	<b>100.0%</b>

# Attachment 10

Soils and Buffers Maps for Manure Application Acres

## Attachment 10

### Soils Maps (Manure Application Acres)

West River Dairy Expansion - Manure Application Sections (17,047 Acres)

County	Township	Township #	Range #	Section(s)
Stevens	Horton	123	42	3, 4, 5, 6, 8, 9, 10, 16, 17, 18, 19, 29, 30, 31
Stevens	Synnes	123	43	2, 3, 4, 5, 6, 8, 9, 11, 12, 13, 15, 16, 22, 23, 24, 25, 26, 27, 33, 35, 36
Stevens	Stevens	123	44	10
Stevens	Darnen	124	42	7, 18, 19, 20, 21, 27, 28, 30, 31, 32, 33, 34
Stevens	Scott	124	43	13, 14, 15, 16, 18, 20, 21, 22, 23, 24, 28, 30
Stevens	Baker	124	44	25, 27, 34, 35, 36
Swift	Fairfield	122	42	6
Swift	Hegbert	122	43	1

The following maps are organized based on section-range-township and show all residences, lakes, rivers, streams, wetlands, and ditches adjacent to the manure application fields with special callouts for tile intakes, wells, and setback buffer zones.

Section 03 - T123N - R42W  
Horton Township - Stevens County



USDA Soils Map - Manure Application  
West River Dairy Expansion



0 200 400 800 1200 Feet

Map Scale: 1:4,300 if printed on A landscape (11" x 8.5") sheet.

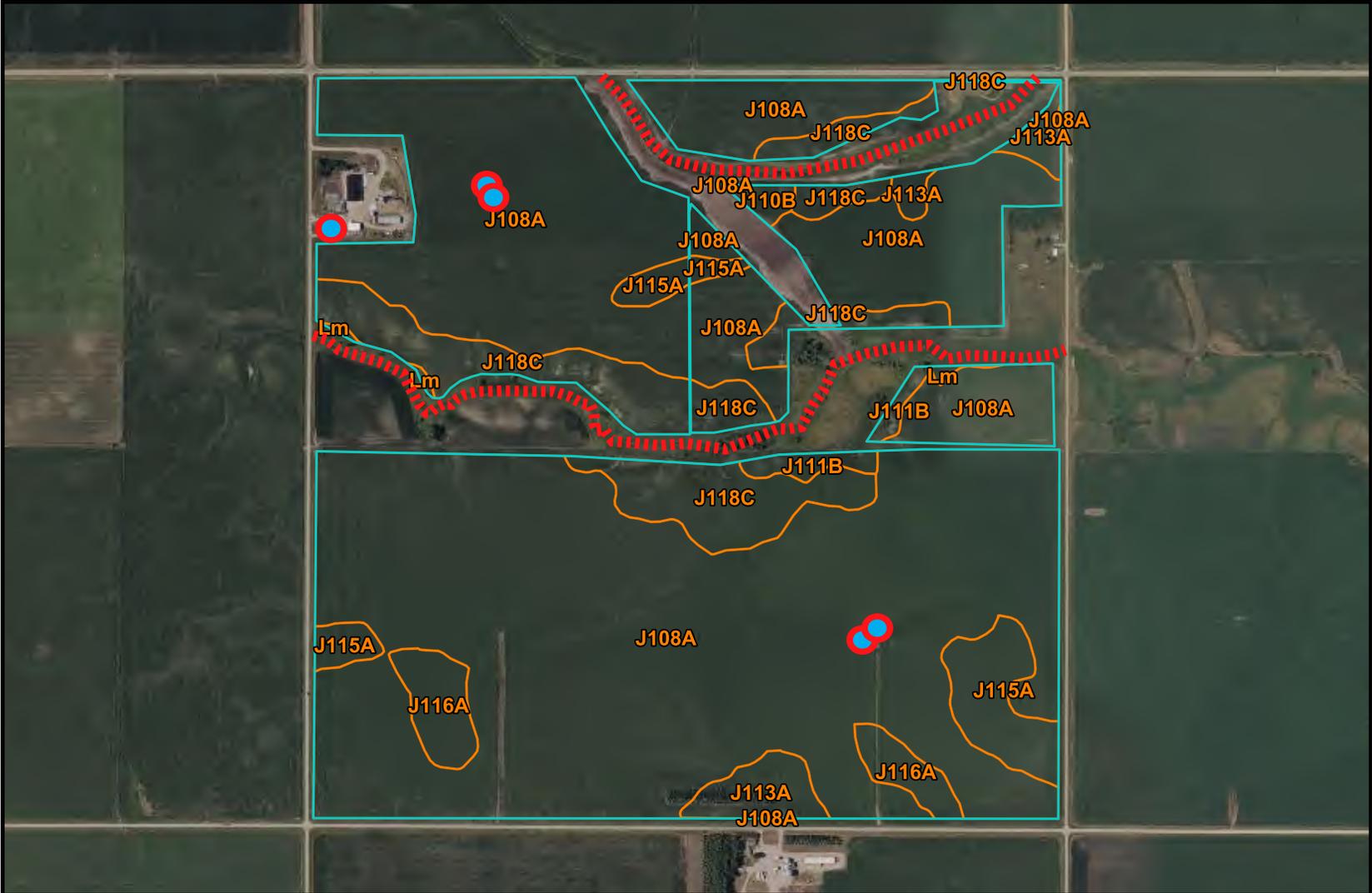
-  Approximate Field Boundary
-  Soil Map Unit
-  MDH Identified Well & Buffer
-  Lake/Stream/Ditch Buffer
-  Tile Intake

**ENVIRONMENTAL  
SCIENTIFIC**

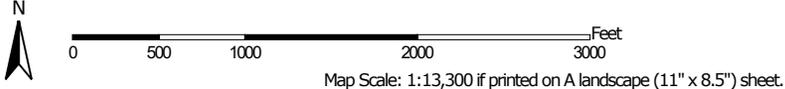
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	23.2	55.2%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	0.0	0.1%
J119D	Barnes-Svea-Buse complex, 3 to 15 percent slopes	18.8	44.7%
Lm	Lamoure silty clay loam, 0 to 2 percent slopes, occasionally flooded	0.0	0.1%
<b>Totals for Area of Interest</b>		<b>42.1</b>	<b>100.0%</b>

Section 04 - T123N - R42W  
 Horton Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

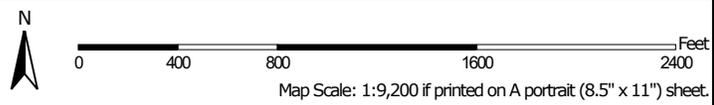
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	403.7	79.7%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	2.0	0.4%
J111B	Aazdahl-Lakepark complex, 0 to 4 percent slopes	4.5	0.9%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	11.8	2.3%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	19.0	3.8%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	12.7	2.5%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	52.1	10.3%
Lm	Lamoure silty clay loam, 0 to 2 percent slopes, occasionally flooded	1.0	0.2%
<b>Totals for Area of Interest</b>		<b>506.9</b>	<b>100.0%</b>

Section 05 - T123N - R42W  
Horton Township - Stevens County



USDA Soils Map - Manure App.  
West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

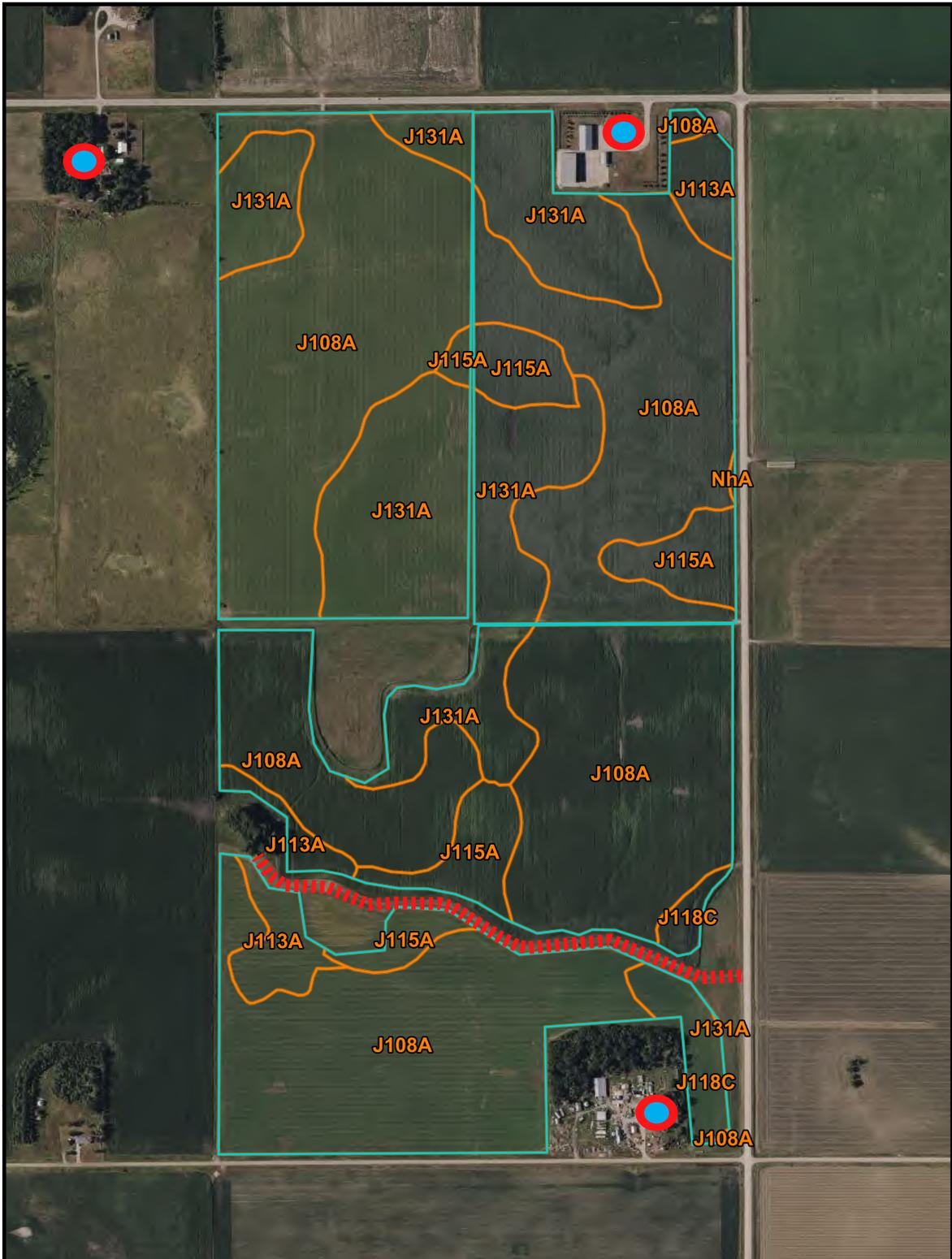


**ENVIRONMENTAL  
SCIENTIFIC**

## Map Unit Legend

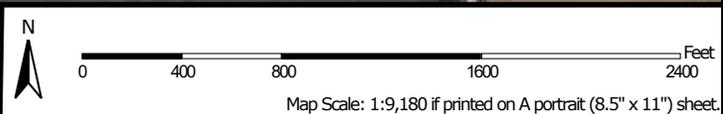
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	117.4	57.0%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	14.2	6.9%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	27.4	13.3%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	46.7	22.7%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	0.3	0.2%
<b>Totals for Area of Interest</b>		<b>206.0</b>	<b>100.0%</b>

Section 06 - T123N - R42W  
 Horton Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

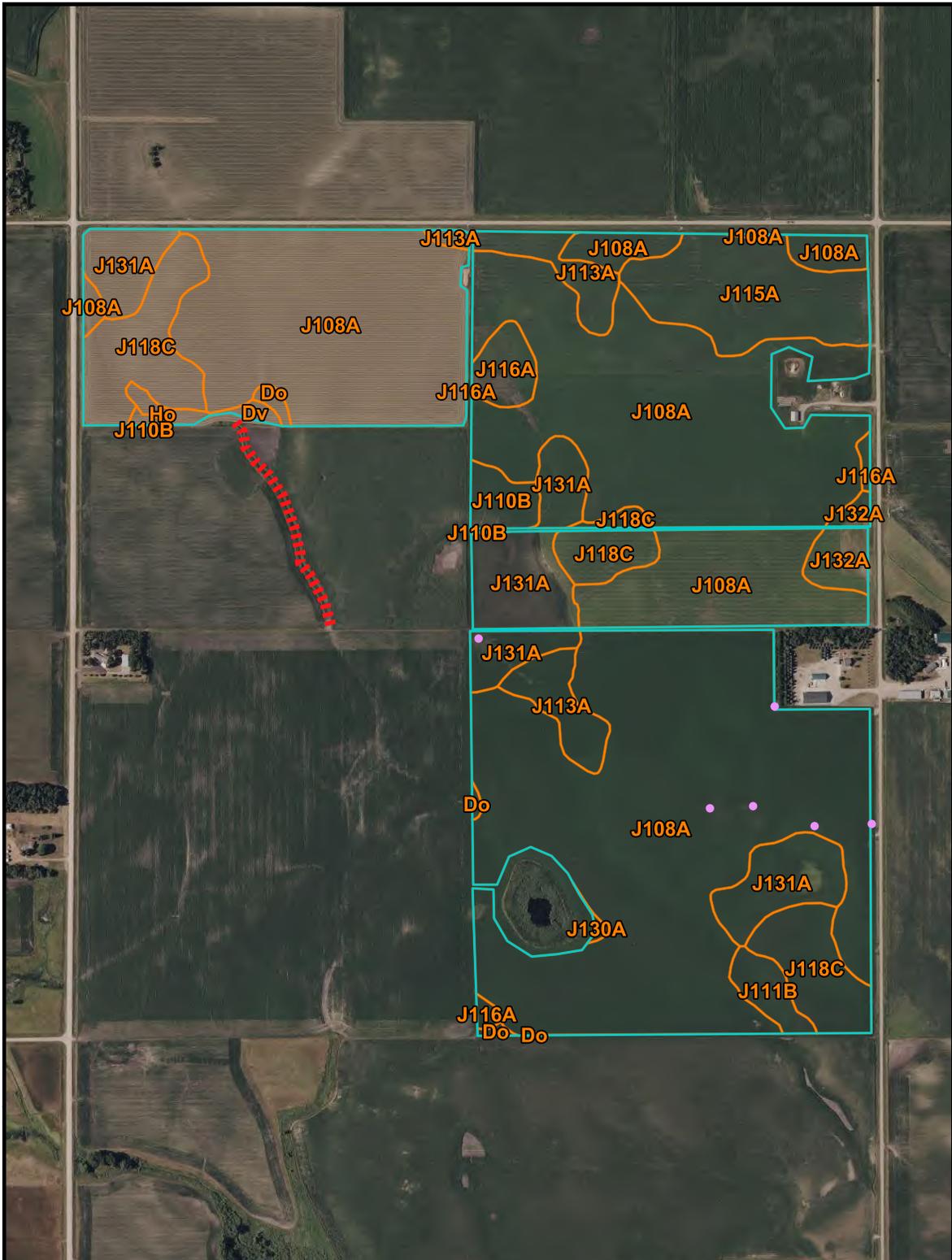


**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	172.7	66.6%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	9.6	3.7%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	16.7	6.4%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	5.8	2.2%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	54.5	21.0%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	0.1	0.0%
<b>Totals for Area of Interest</b>		<b>259.3</b>	<b>100.0%</b>

Section 08 - T123N - R42W  
 Horton Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



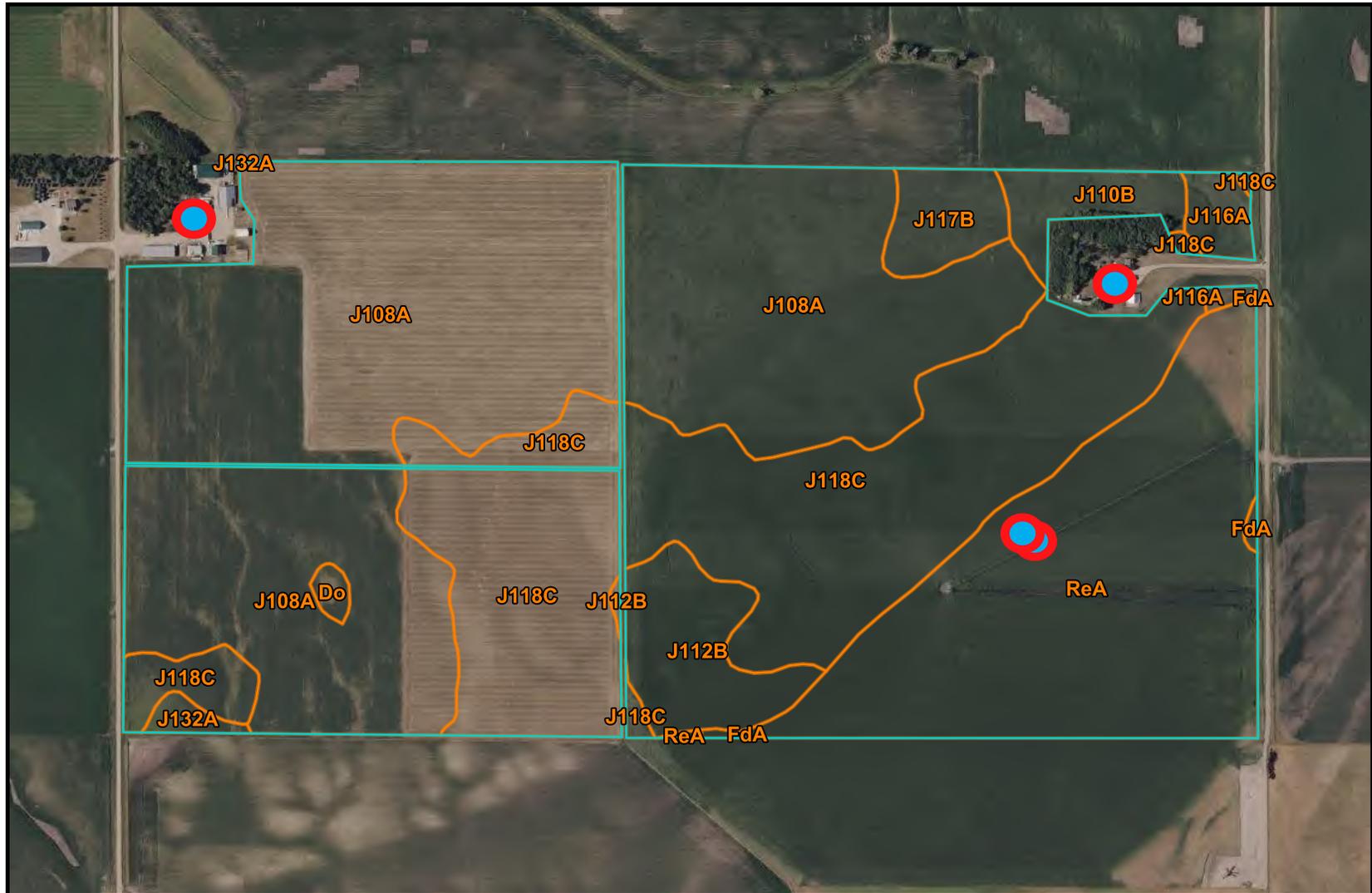
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**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	1.3	0.4%
Dv	Dovray clay, very poorly drained	0.7	0.2%
Ho	Hegne clay	1.3	0.4%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	247.9	69.5%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	3.9	1.1%
J111B	Aazdahl-Lakepark complex, 0 to 4 percent slopes	3.4	1.0%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	11.2	3.2%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	20.0	5.6%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	5.1	1.4%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	26.9	7.5%
J130A	Quam and Cathro soils, 0 to 1 percent slopes, frequently ponded	0.3	0.1%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	30.2	8.5%
J132A	Quam-Cathro-Lakepark complex, 0 to 2 percent slopes, frequently ponded	4.3	1.2%
<b>Totals for Area of Interest</b>		<b>356.6</b>	<b>100.0%</b>

Section 09 - T123N - R42W  
 Horton Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



0 400 800 1600 2400 Feet

Map Scale: 1:8,740 if printed on A landscape (11" x 8.5") sheet.

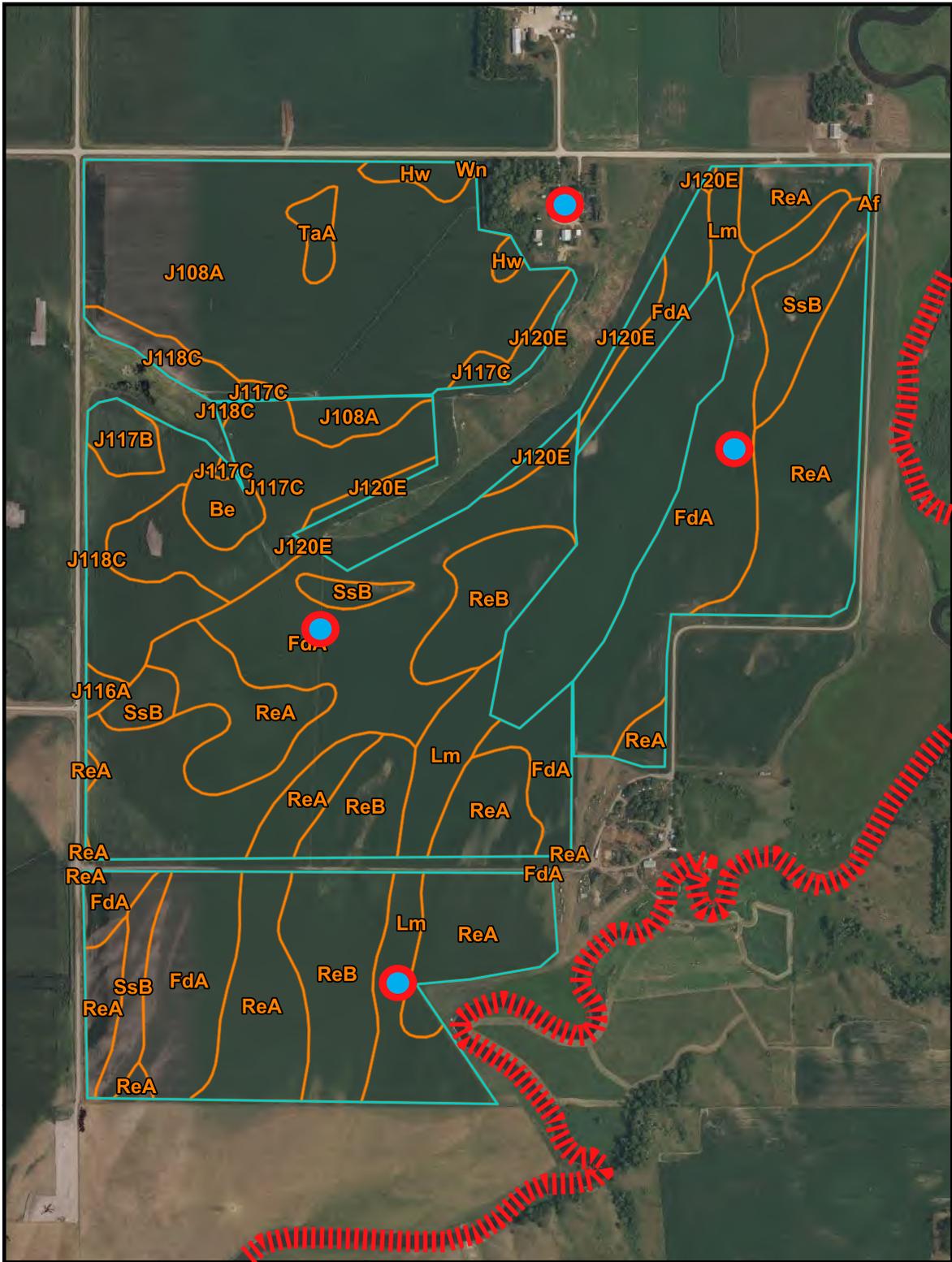
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- |||| Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

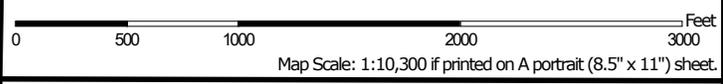
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	0.8	0.3%
FdA	Fordville loam, 0 to 2 percent slopes	0.4	0.1%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	139.1	46.7%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	5.1	1.7%
J112B	Aazdahl-Quam-Lakepark complex, 0 to 4 percent slopes	10.8	3.6%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	2.9	1.0%
J117B	Hokans-Svea complex, 2 to 6 percent slopes	5.2	1.8%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	76.7	25.8%
J132A	Quam-Cathro-Lakepark complex, 0 to 2 percent slopes, frequently ponded	1.2	0.4%
ReA	Renshaw loam, 0 to 2 percent slopes	55.6	18.7%
<b>Totals for Area of Interest</b>		<b>297.9</b>	<b>100.0%</b>

Section 10 - T123N - R42W  
 Horton Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



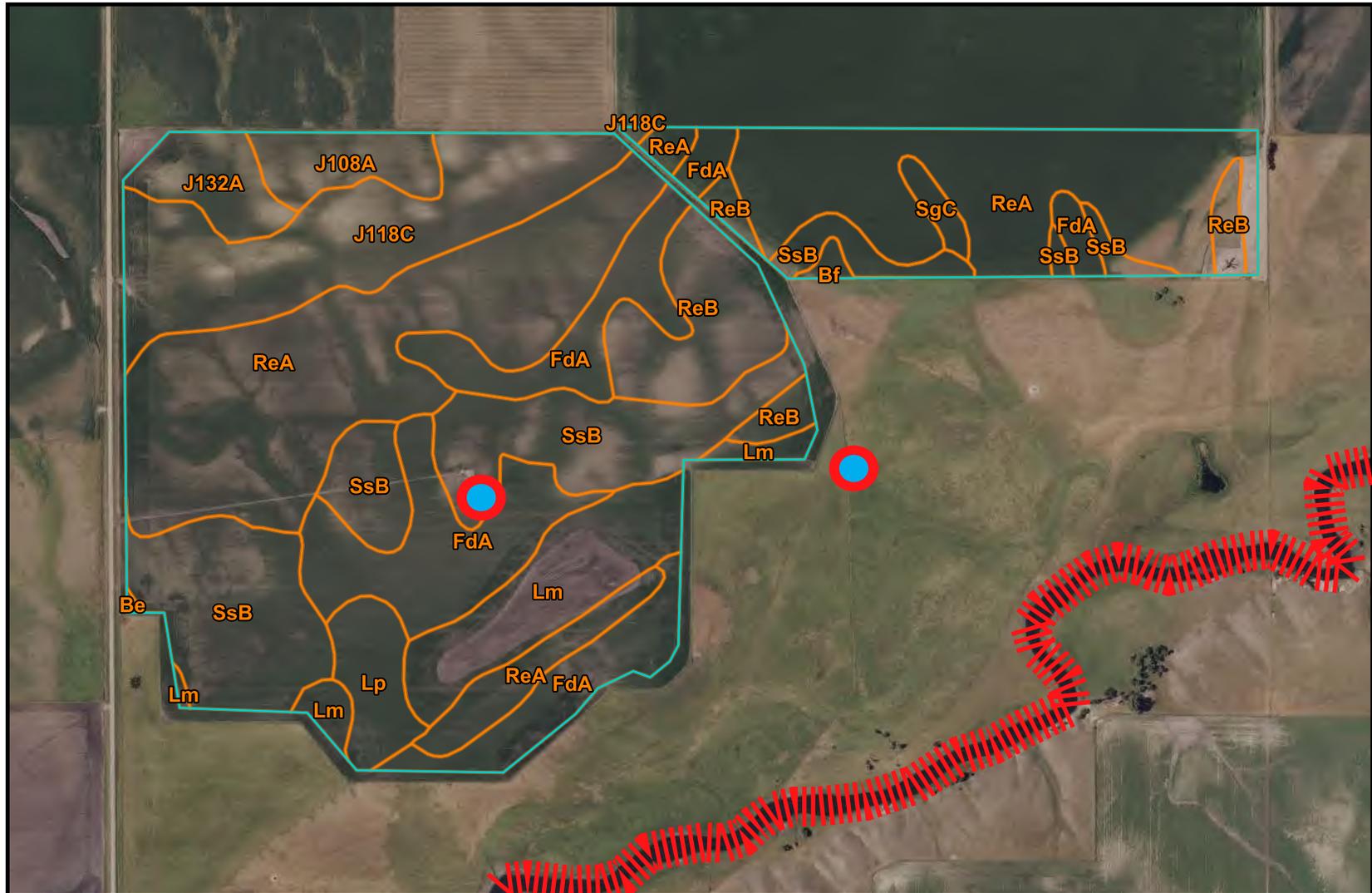
**ENVIRONMENTAL  
 SCIENTIFIC**

N

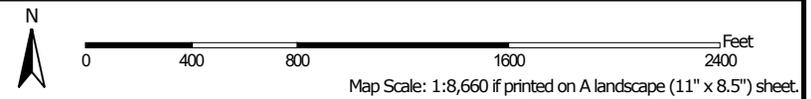
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Af	Alluvial land, frequently flooded	0.0	0.0%
Be	Biscay silty clay loam	3.3	1.0%
FdA	Fordville loam, 0 to 2 percent slopes	92.4	26.9%
Hw	Hidewood silty clay loam	2.5	0.7%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	61.7	18.0%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	0.9	0.3%
J117B	Hokans-Svea complex, 2 to 6 percent slopes	3.1	0.9%
J117C	Hokans-Svea complex, 2 to 9 percent slopes	19.9	5.8%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	15.6	4.5%
J120E	Langhei-Barnes-Darnen complex, 5 to 30 percent slopes	5.6	1.6%
Lm	Lamoure silty clay loam, 0 to 2 percent slopes, occasionally flooded	17.9	5.2%
ReA	Renshaw loam, 0 to 2 percent slopes	74.8	21.8%
ReB	Renshaw loam, 1 to 6 percent slopes	28.7	8.3%
SsB	Sandberg sandy loam, 1 to 6 percent slopes	15.3	4.4%
TaA	Tara silt loam, 1 to 3 percent slopes	2.0	0.6%
Wn	Winger silty clay loam	0.1	0.0%
<b>Totals for Area of Interest</b>		<b>343.7</b>	<b>100.0%</b>

Section 16 - T123N - R42W  
 Horton Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



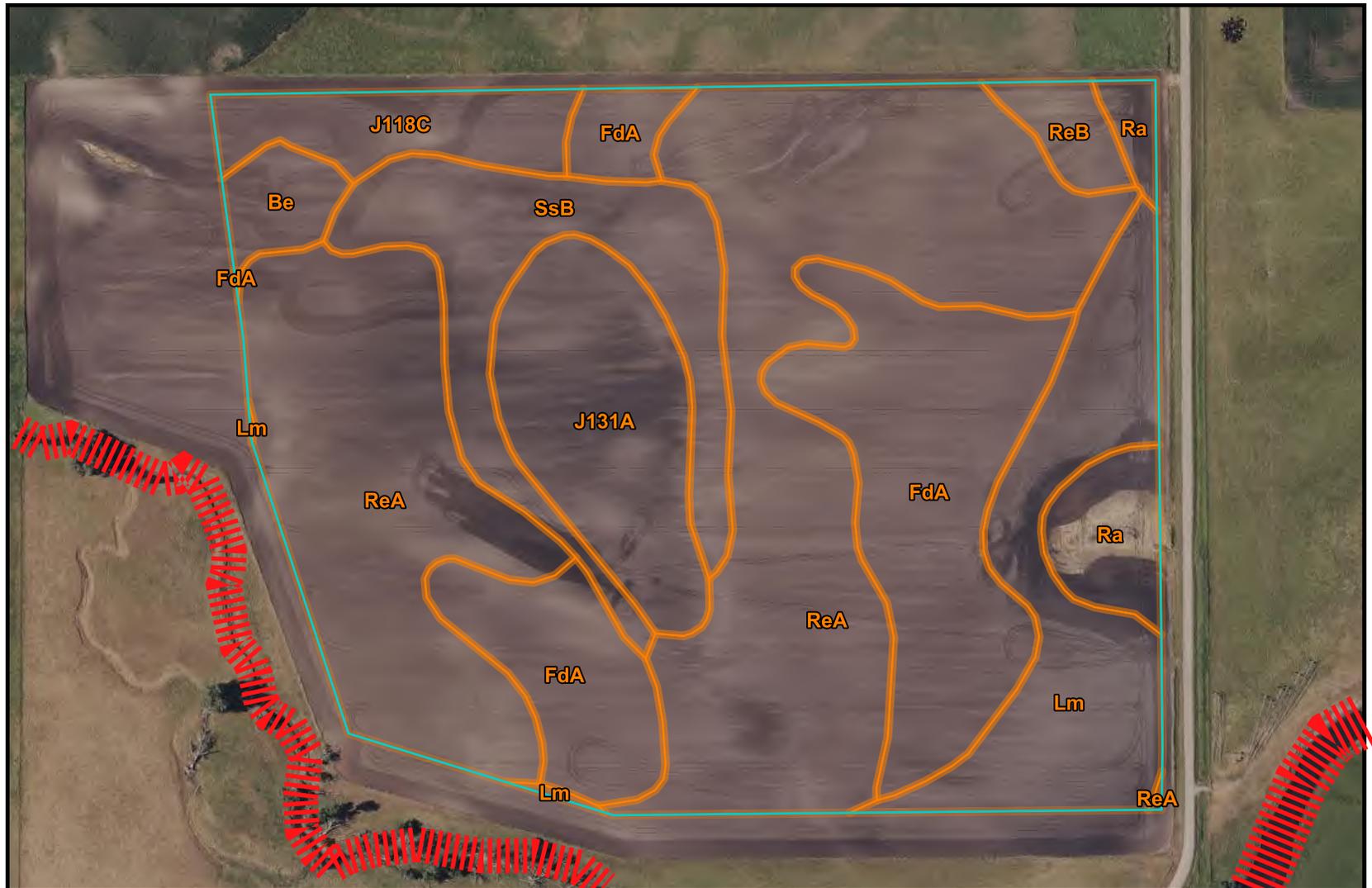
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Be	Biscay silty clay loam	0.1	0.0%
Bf	Biscay silty clay loam, depressional	0.6	0.3%
FdA	Fordville loam, 0 to 2 percent slopes	30.6	14.9%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	5.2	2.5%
J112B	Aazdahl-Quam-Lakepark complex, 0 to 4 percent slopes	0.0	0.0%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	22.9	11.2%
J132A	Quam-Cathro-Lakepark complex, 0 to 2 percent slopes, frequently ponded	5.3	2.6%
Lm	Lamoure silty clay loam, 0 to 2 percent slopes, occasionally flooded	14.2	6.9%
Lp	La Prairie loam, 0 to 2 percent slopes, occasionally flooded	5.2	2.5%
ReA	Renshaw loam, 0 to 2 percent slopes	70.4	34.3%
ReB	Renshaw loam, 1 to 6 percent slopes	13.9	6.8%
SgC	Sandberg sandy loam, 2 to 12 percent slopes	1.3	0.6%
SsB	Sandberg sandy loam, 1 to 6 percent slopes	35.3	17.2%
<b>Totals for Area of Interest</b>		<b>205.1</b>	<b>100.0%</b>

Section 17 - T123N - R42W  
 Horton Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



0 200 400 800 1200 Feet

Map Scale: 1:4,260 if printed on A landscape (11" x 8.5") sheet.

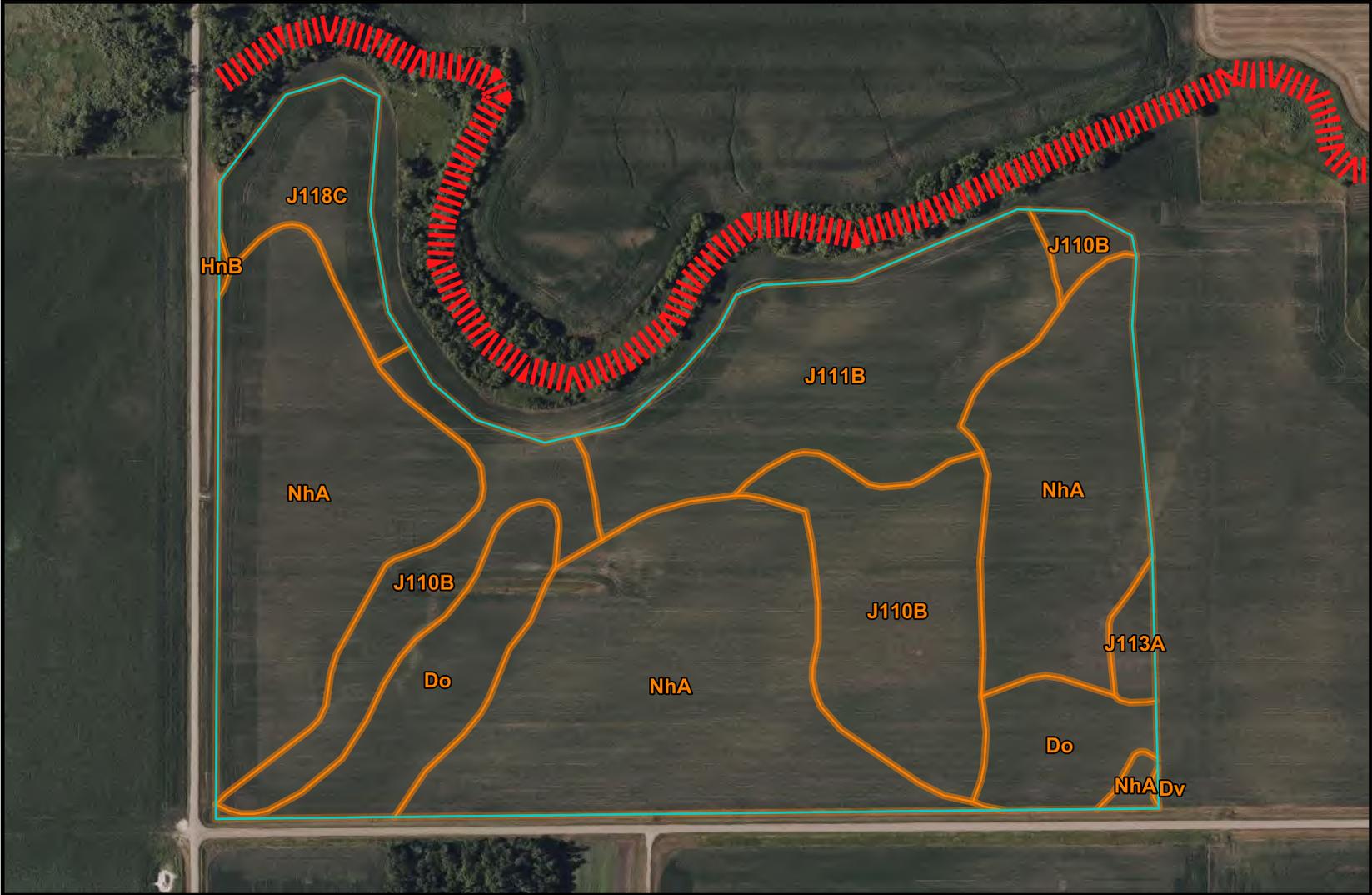
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▨▨▨▨ Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

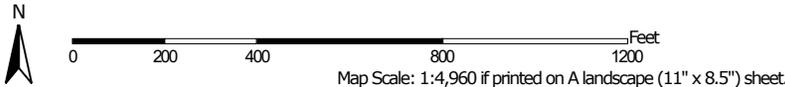
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Be	Biscay silty clay loam	1.3	1.7%
FdA	Fordville loam, 0 to 2 percent slopes	14.1	19.2%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	2.9	4.0%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	6.5	8.8%
Lm	Lamoure silty clay loam, 0 to 2 percent slopes, occasionally flooded	7.7	10.4%
Ra	Rauville silty clay loam, 0 to 2 percent slopes, frequently flooded	2.5	3.3%
ReA	Renshaw loam, 0 to 2 percent slopes	30.5	41.3%
ReB	Renshaw loam, 1 to 6 percent slopes	1.1	1.5%
SsB	Sandberg sandy loam, 1 to 6 percent slopes	7.2	9.7%
<b>Totals for Area of Interest</b>		<b>73.7</b>	<b>100.0%</b>

Section 18 - T123N - R42W  
 Horton Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



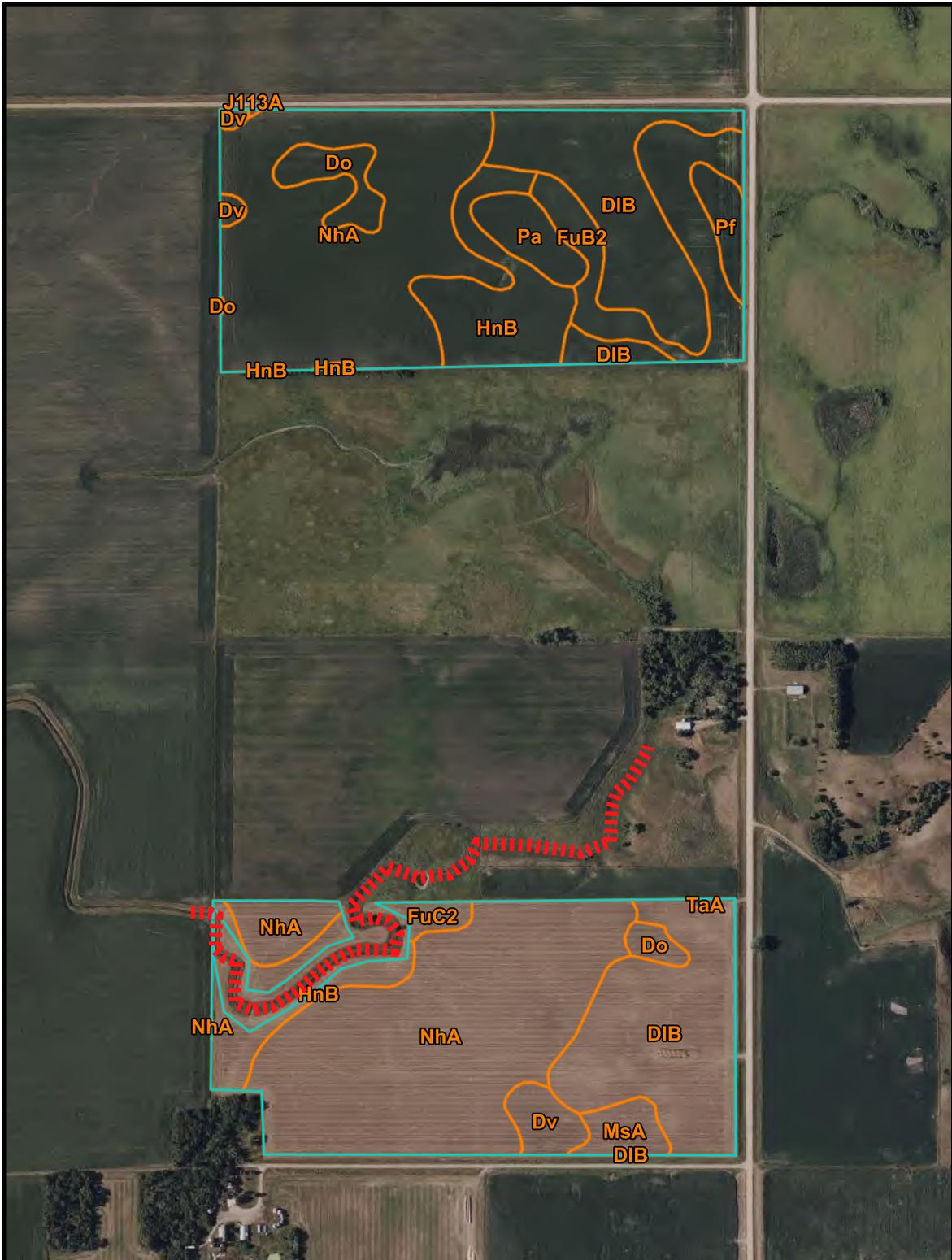
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▨▨▨▨ Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
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## Map Unit Legend

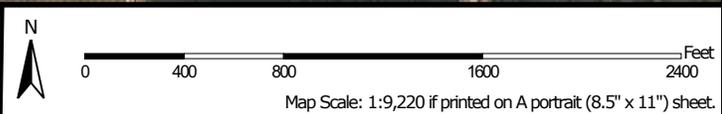
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	7.5	9.8%
Dv	Dovray clay, very poorly drained	0.0	0.0%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	0.1	0.1%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	14.1	18.3%
J111B	Aazdahl-Lakepark complex, 0 to 4 percent slopes	12.0	15.7%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	0.8	1.0%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	4.0	5.2%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	38.5	50.0%
<b>Totals for Area of Interest</b>		<b>77.0</b>	<b>100.0%</b>

Section 19 - T123N - R42W  
 Horton Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

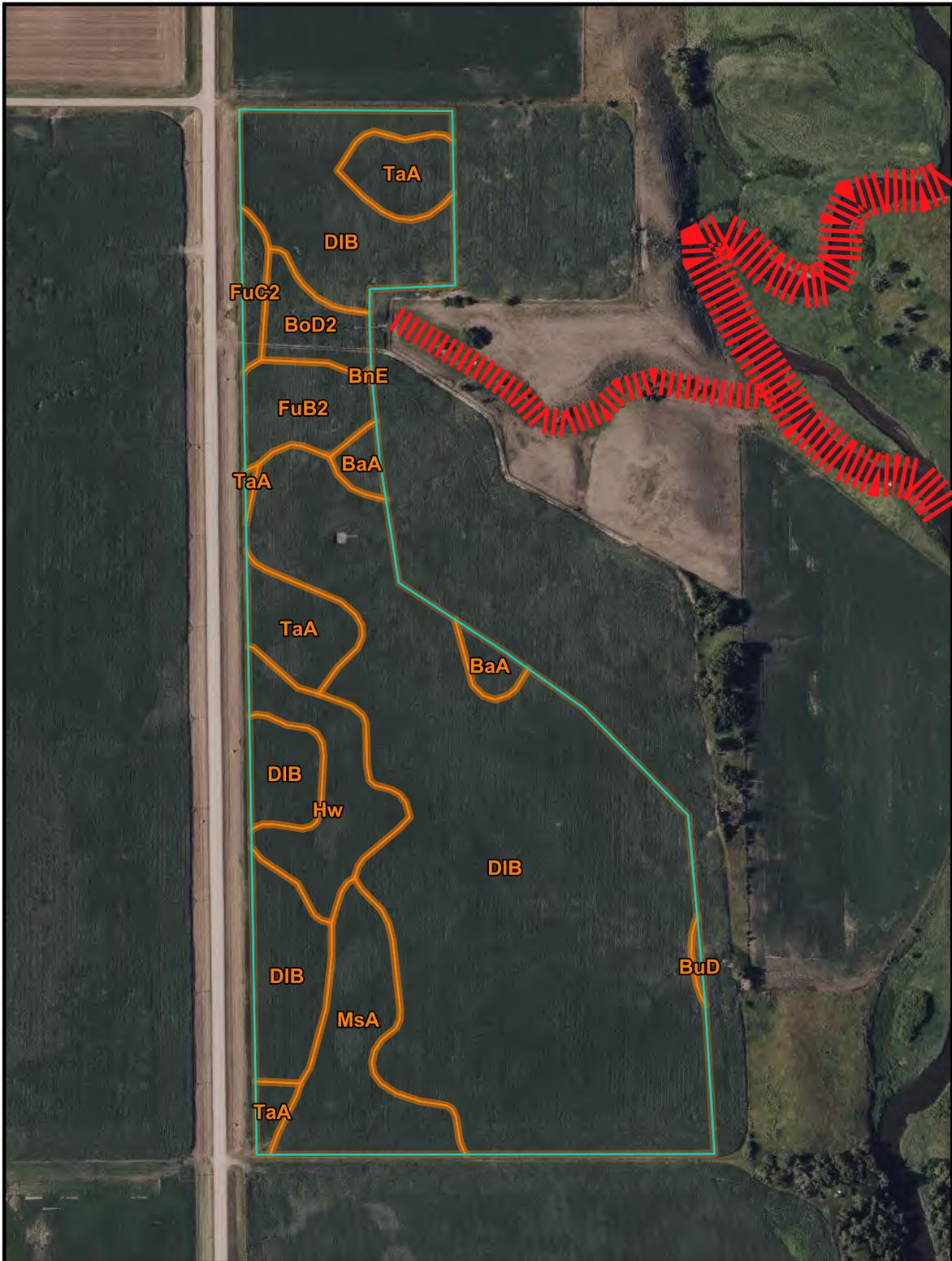


**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

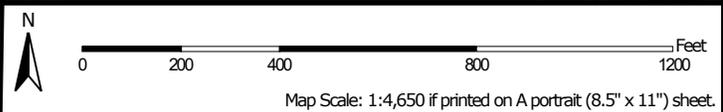
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DIB	Byrne silt loam, 1 to 6 percent slopes	33.0	22.9%
Do	Dovray clay, poorly drained	3.9	2.7%
Dv	Dovray clay, very poorly drained	3.0	2.1%
FuB2	Forman-Buse complex, 2 to 6 percent slopes	10.6	7.3%
FuC2	Forman-Buse complex, 6 to 12 percent slopes, moderately eroded	1.2	0.8%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	14.6	10.1%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	0.0	0.0%
MsA	McIntosh silt loam, 1 to 3 percent slopes	2.3	1.6%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	70.1	48.6%
Pa	Parnell silty clay loam, occasionally ponded, 0 to 1 percent slopes	3.2	2.3%
Pf	Lakepark-Parnell, occasionally ponded, complex, 0 to 2 percent slopes	2.2	1.5%
TaA	Tara silt loam, 1 to 3 percent slopes	0.2	0.1%
<b>Totals for Area of Interest</b>		<b>144.2</b>	<b>100.0%</b>

Section 29 - T123N - R42W  
 Horton Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▨▨▨▨ Lake/Stream/Ditch Buffer
- Tile Intake

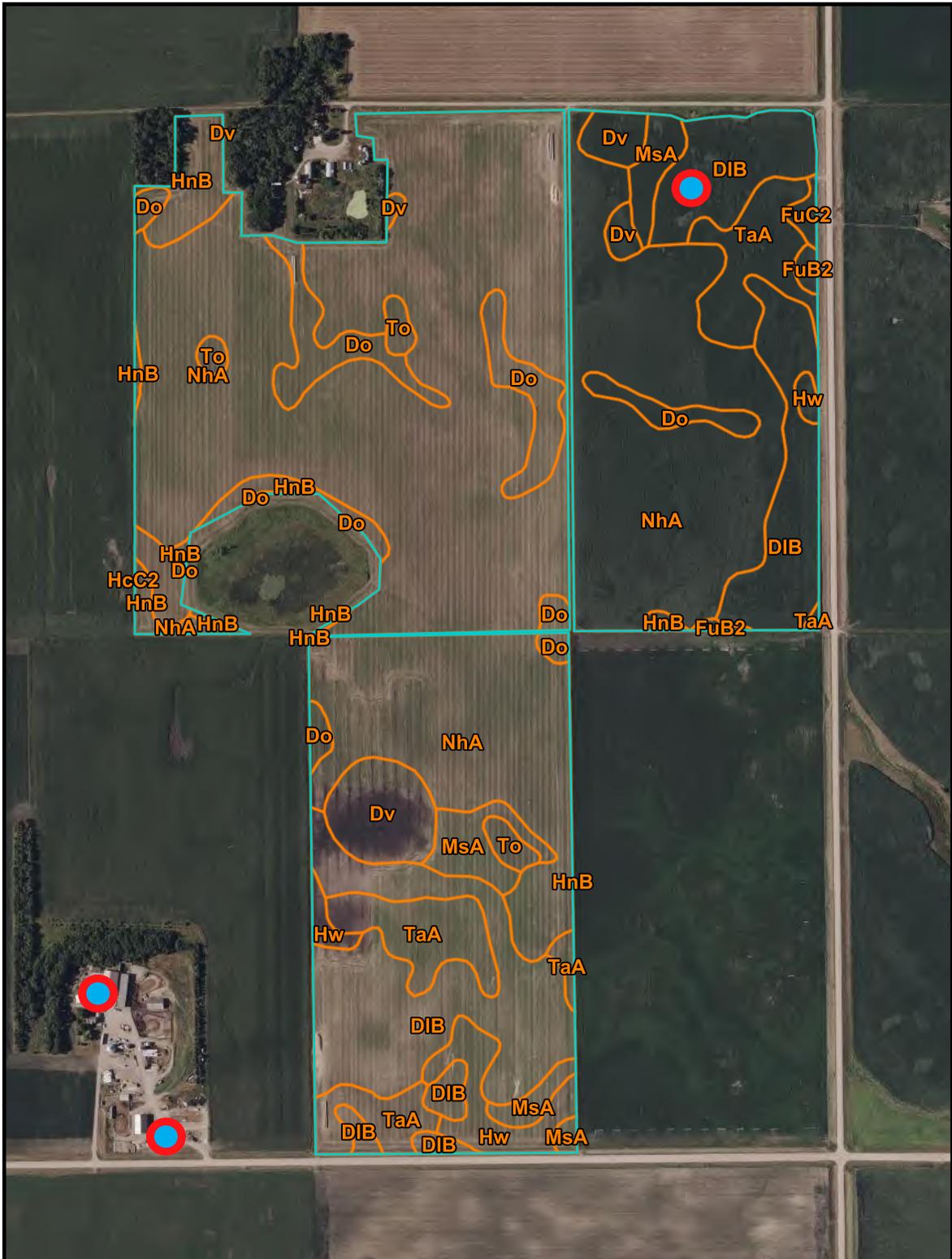


**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

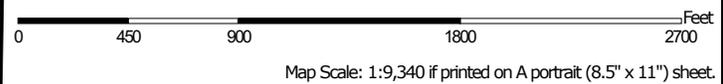
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BaA	Hokans-Svea complex, 1 to 4 percent slopes	0.8	1.8%
BnE	Langhei loam, 12 to 40 percent slopes	0.0	0.0%
BoD2	Langhei-Barnes, moderately eroded, complex, 12 to 20 percent slopes	1.2	2.7%
BuD	Forman-Buse complex, 12 to 20 percent slopes, moderately eroded	0.1	0.2%
DIB	Byrne silt loam, 1 to 6 percent slopes	30.6	70.6%
FuB2	Forman-Buse complex, 2 to 6 percent slopes	1.5	3.6%
FuC2	Forman-Buse complex, 6 to 12 percent slopes, moderately eroded	0.5	1.1%
Hw	Hidewood silty clay loam	2.6	5.9%
MsA	McIntosh silt loam, 1 to 3 percent slopes	3.3	7.7%
TaA	Tara silt loam, 1 to 3 percent slopes	2.8	6.5%
<b>Totals for Area of Interest</b>		<b>43.4</b>	<b>100.0%</b>

Section 30 - T123N - R42W  
 Horton Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

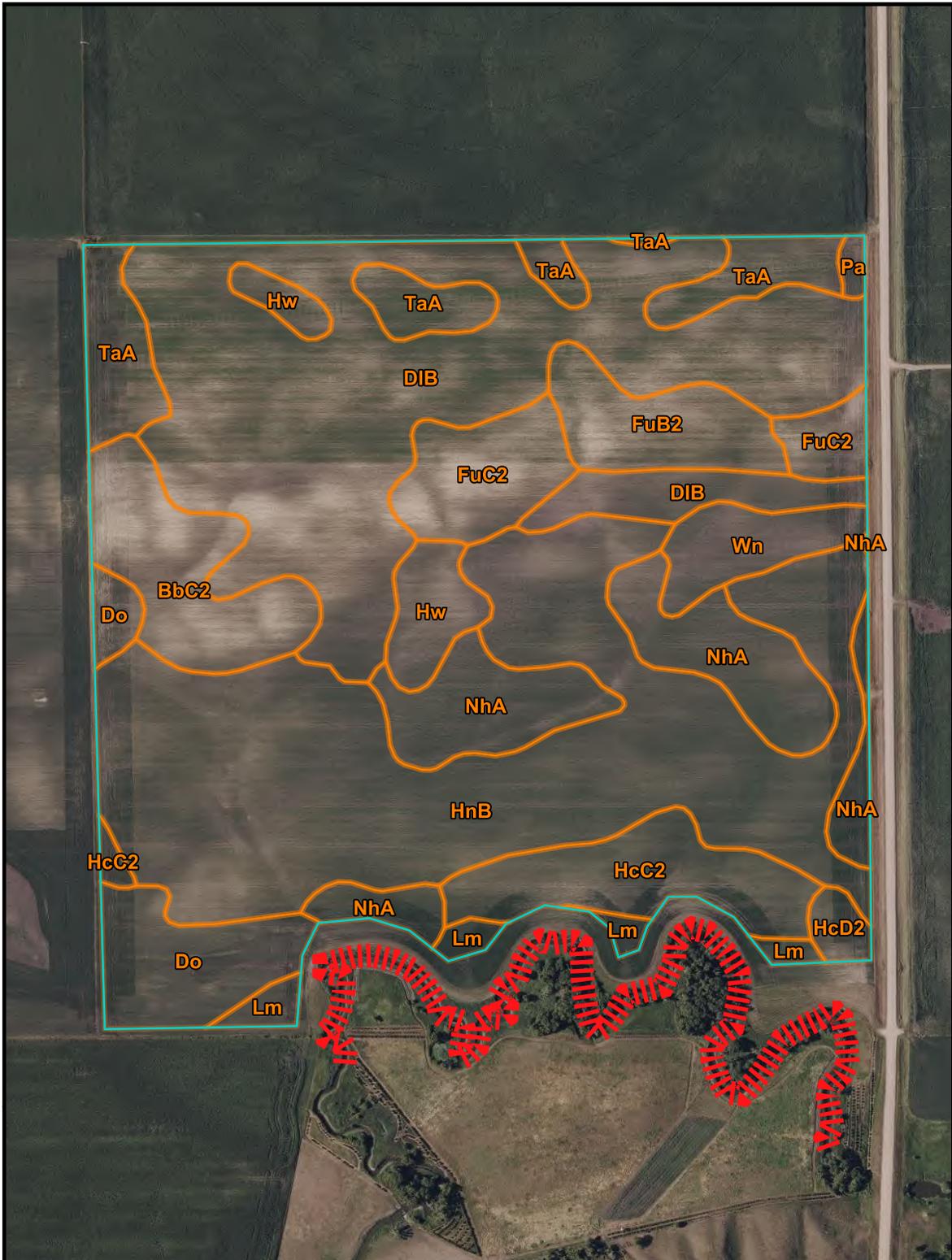


**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DIB	Byrne silt loam, 1 to 6 percent slopes	42.1	16.3%
Do	Dovray clay, poorly drained	12.1	4.7%
Dv	Dovray clay, very poorly drained	8.3	3.2%
FuB2	Forman-Buse complex, 2 to 6 percent slopes	0.7	0.3%
FuC2	Forman-Buse complex, 6 to 12 percent slopes, moderately eroded	0.7	0.3%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	1.7	0.6%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	7.4	2.9%
Hw	Hidewood silty clay loam	5.9	2.3%
MsA	McIntosh silt loam, 1 to 3 percent slopes	7.2	2.8%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	152.7	59.3%
TaA	Tara silt loam, 1 to 3 percent slopes	16.6	6.4%
To	Tonka loam	2.3	0.9%
<b>Totals for Area of Interest</b>		<b>257.7</b>	<b>100.0%</b>

Section 31 - T123N - R42W  
 Horton Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▨▨▨▨ Lake/Stream/Ditch Buffer
- Tile Intake



Map Scale: 1:6,160 if printed on A portrait (8.5" x 11") sheet.

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BbC2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	7.1	5.1%
DIB	Byrne silt loam, 1 to 6 percent slopes	37.9	27.1%
Do	Dovray clay, poorly drained	6.2	4.4%
FuB2	Forman-Buse complex, 2 to 6 percent slopes	4.8	3.4%
FuC2	Forman-Buse complex, 6 to 12 percent slopes, moderately eroded	6.1	4.4%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	6.9	4.9%
HcD2	Hattie clay, 12 to 18 percent slopes, eroded	0.9	0.7%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	40.7	29.1%
Hw	Hidewood silty clay loam	3.4	2.5%
Lm	Lamoure silty clay loam, 0 to 2 percent slopes, occasionally flooded	1.9	1.3%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	12.3	8.8%
Pa	Parnell silty clay loam, occasionally ponded, 0 to 1 percent slopes	0.4	0.3%
TaA	Tara silt loam, 1 to 3 percent slopes	7.8	5.6%
Wn	Winger silty clay loam	3.2	2.3%
<b>Totals for Area of Interest</b>		<b>139.7</b>	<b>100.0%</b>

Section 02 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



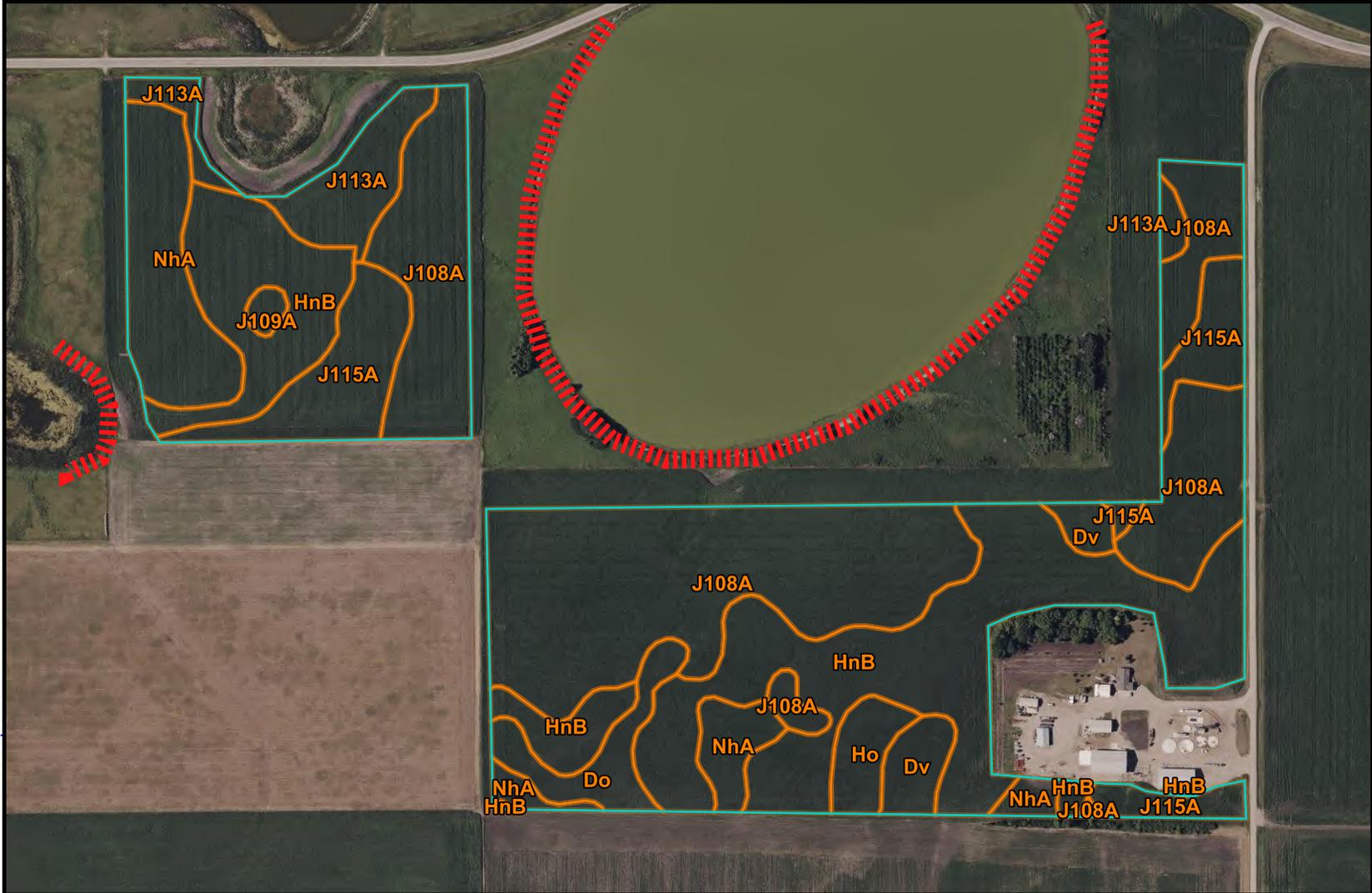
Map Scale: 1:6,150 if printed on A portrait (8.5" x 11") sheet.

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Dv	Dovray clay, very poorly drained	1.4	0.9%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	2.1	1.3%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	86.8	54.9%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	35.1	22.2%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	24.1	15.2%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	8.6	5.4%
<b>Totals for Area of Interest</b>		<b>158.1</b>	<b>100.0%</b>

Section 03 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	2.7	3.0%
Dv	Dovray clay, very poorly drained	2.2	2.5%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	27.6	30.8%
Ho	Hegne clay	1.7	1.9%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	33.5	37.4%
J109A	Aazdahl-Balaton-Flom complex, 0 to 3 percent slopes	0.4	0.4%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	4.6	5.1%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	8.0	9.0%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	8.8	9.9%
<b>Totals for Area of Interest</b>		<b>89.7</b>	<b>100.0%</b>

Section 04 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure App  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



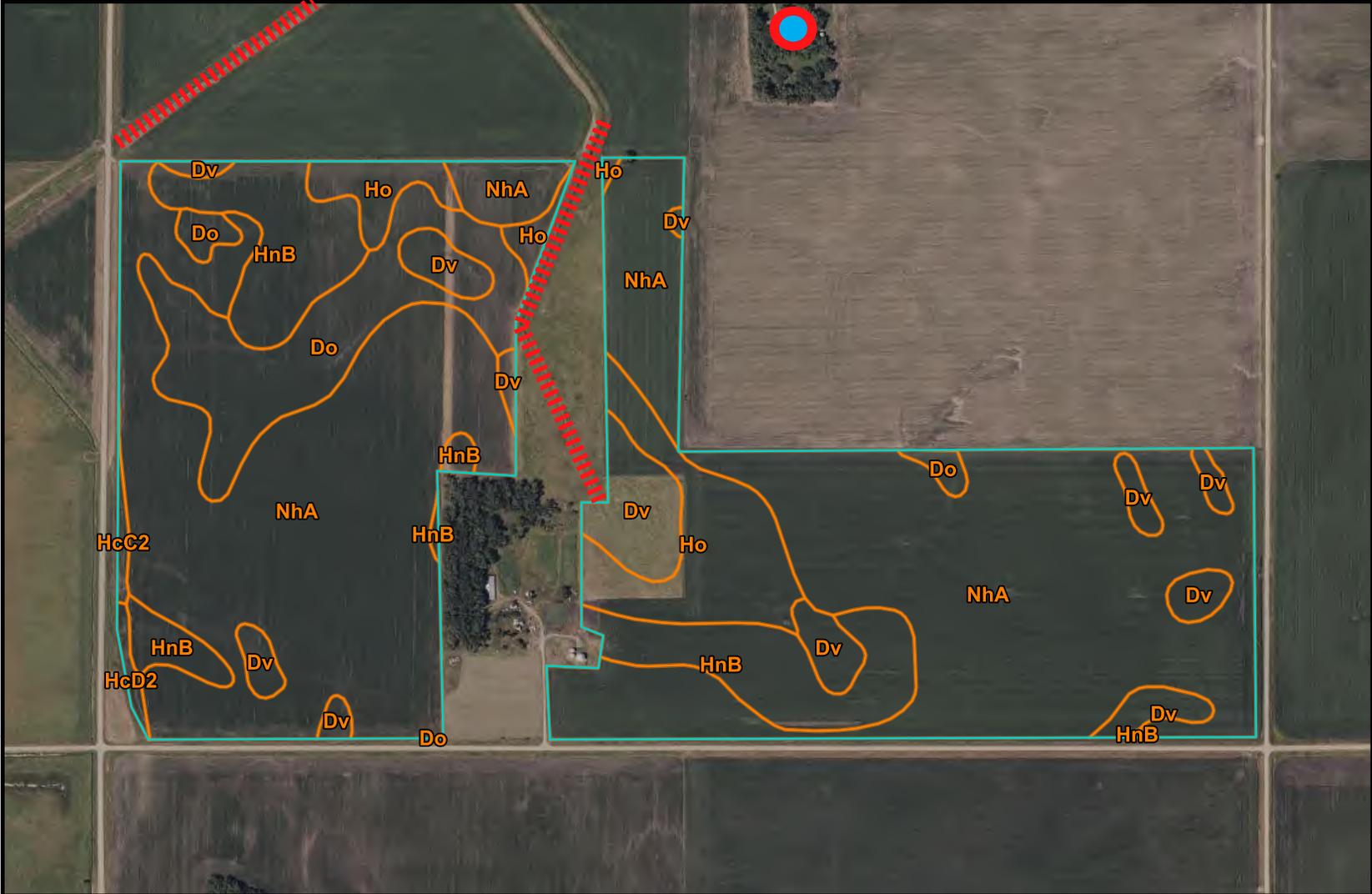
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**ENVIRONMENTAL  
 SCIENTIFIC**

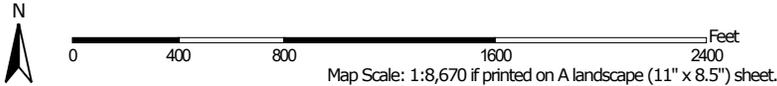
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	18.4	6.8%
Dv	Dovray clay, very poorly drained	3.6	1.3%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	43.0	15.9%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	81.2	30.0%
J109A	Aazdahl-Balaton-Flom complex, 0 to 3 percent slopes	0.6	0.2%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	76.3	28.2%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	0.1	0.0%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	1.0	0.4%
J130A	Quam and Cathro soils, 0 to 1 percent slopes, frequently ponded	0.1	0.0%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	46.0	17.0%
<b>Totals for Area of Interest</b>		<b>270.3</b>	<b>100.0%</b>

Section 05 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



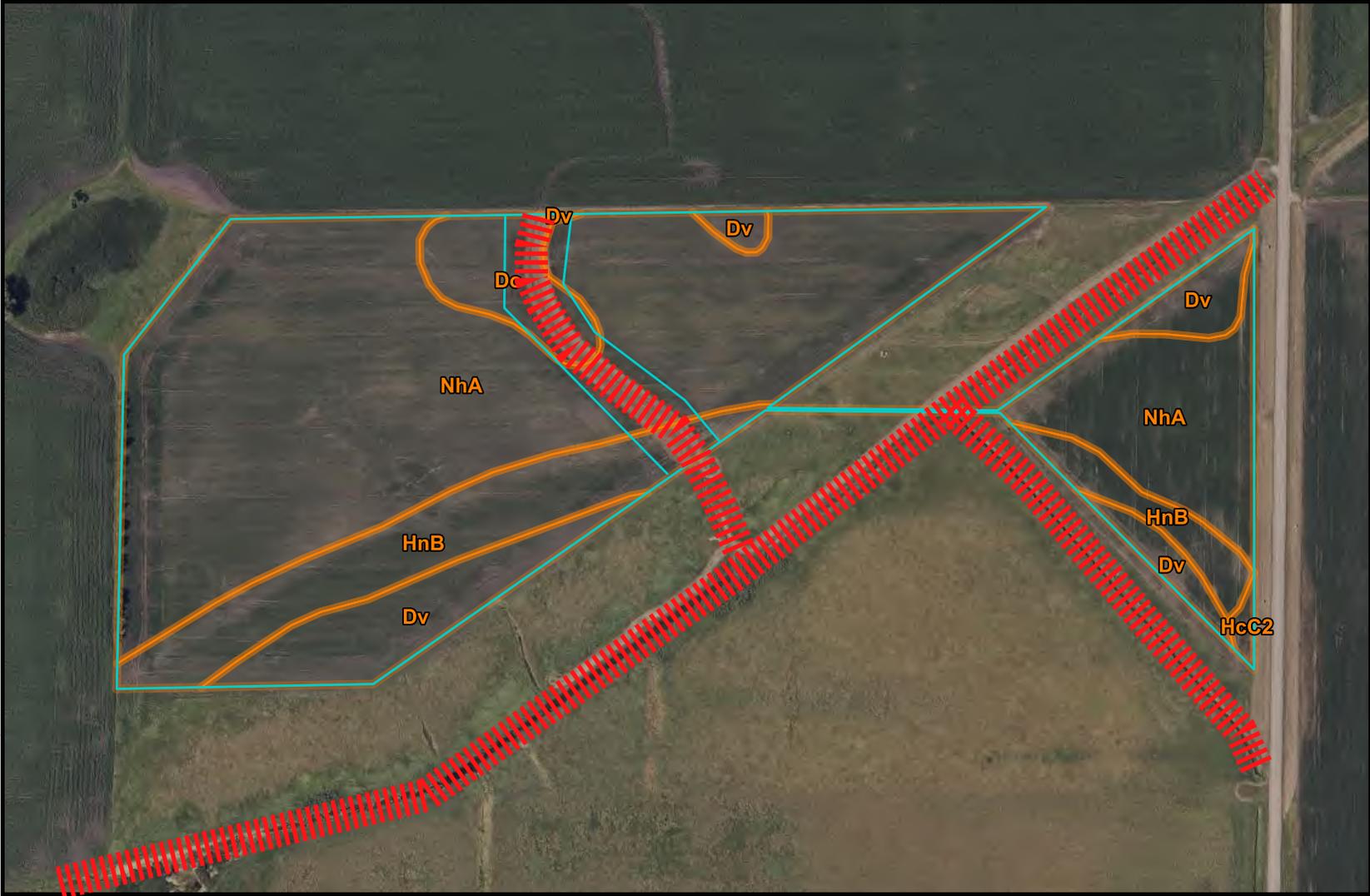
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▬▬▬▬ Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	18.9	9.3%
Dv	Dovray clay, very poorly drained	15.4	7.6%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	0.6	0.3%
HcD2	Hattie clay, 12 to 18 percent slopes, eroded	0.7	0.3%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	22.8	11.2%
Ho	Hegne clay	15.6	7.7%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	129.7	63.7%
<b>Totals for Area of Interest</b>		<b>203.8</b>	<b>100.0%</b>

Section 06 - T123N - R43W  
Synnes Township - Stevens County



USDA Soils Map - Manure Application  
West River Dairy Expansion



Map Scale: 1:4,320 if printed on A landscape (11" x 8.5") sheet.

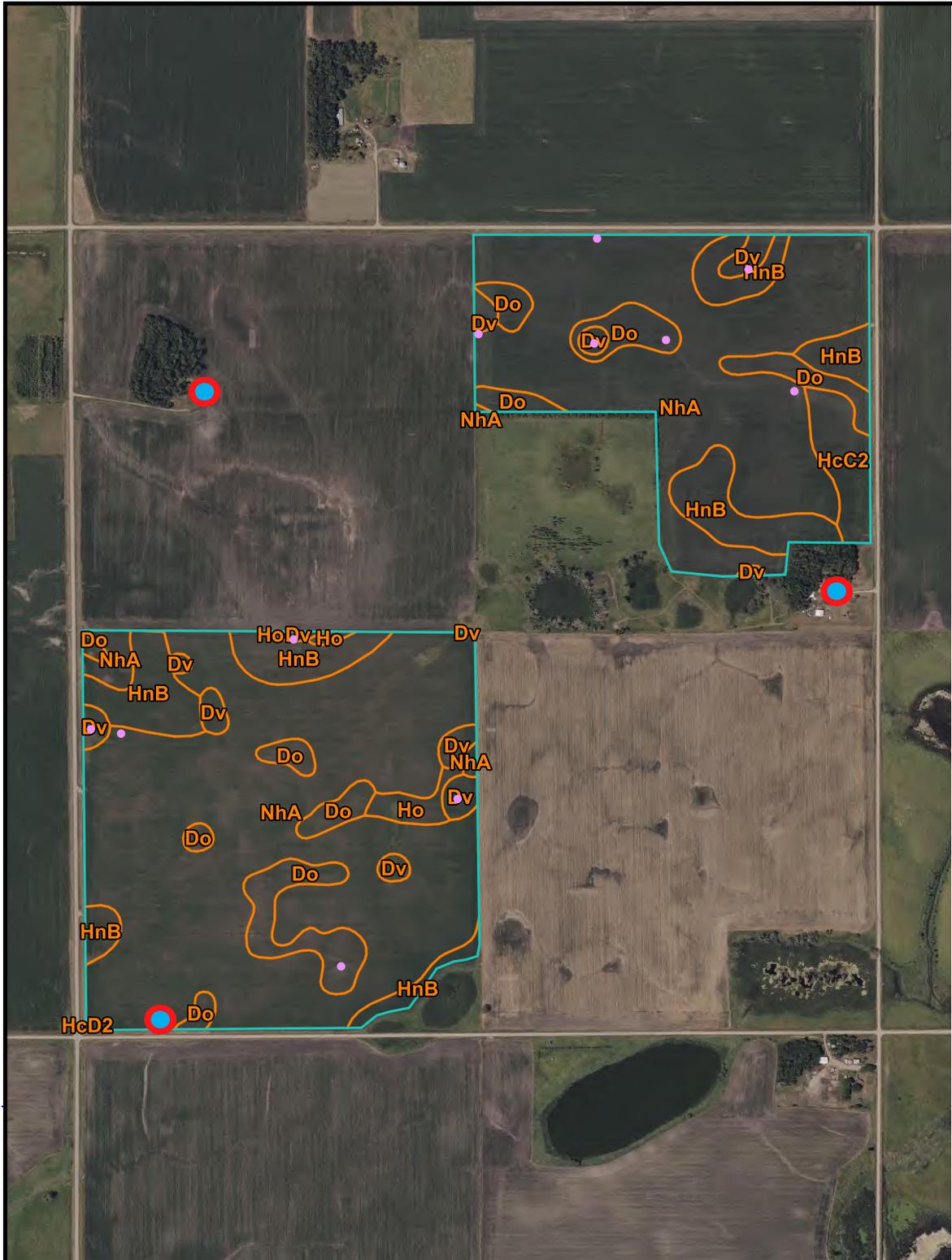
- Approximate Field Boundary
- MDH Identified Well & Buffer
- Soil Map Unit
- Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
SCIENTIFIC**

## Map Unit Legend

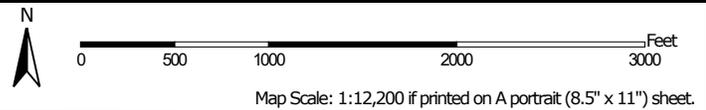
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	1.8	4.8%
Dv	Dovray clay, very poorly drained	4.2	11.0%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	0.2	0.4%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	5.7	14.9%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	26.6	68.9%
<b>Totals for Area of Interest</b>		<b>38.6</b>	<b>100.0%</b>

Section 08 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

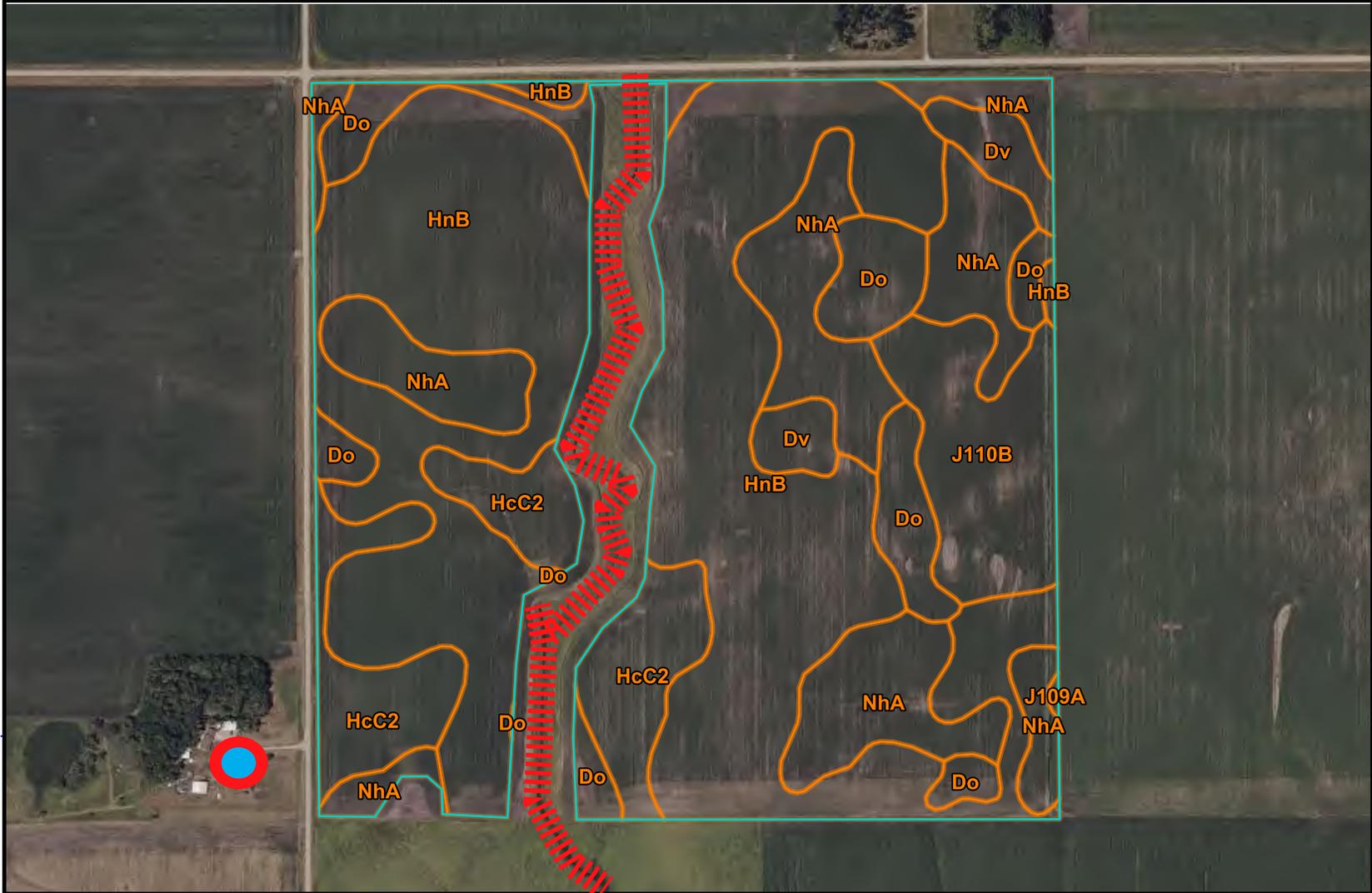


**ENVIRONMENTAL  
 SCIENTIFIC**

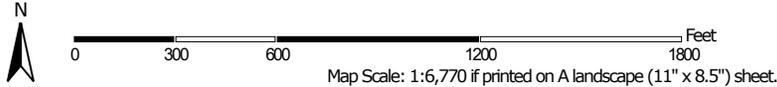
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	22.1	8.8%
Dv	Dovray clay, very poorly drained	8.6	3.4%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	6.3	2.5%
HcD2	Hattie clay, 12 to 18 percent slopes, eroded	0.0	0.0%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	30.0	11.9%
Ho	Hegne clay	2.8	1.1%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	181.8	72.3%
<b>Totals for Area of Interest</b>		<b>251.6</b>	<b>100.0%</b>

Section 09 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



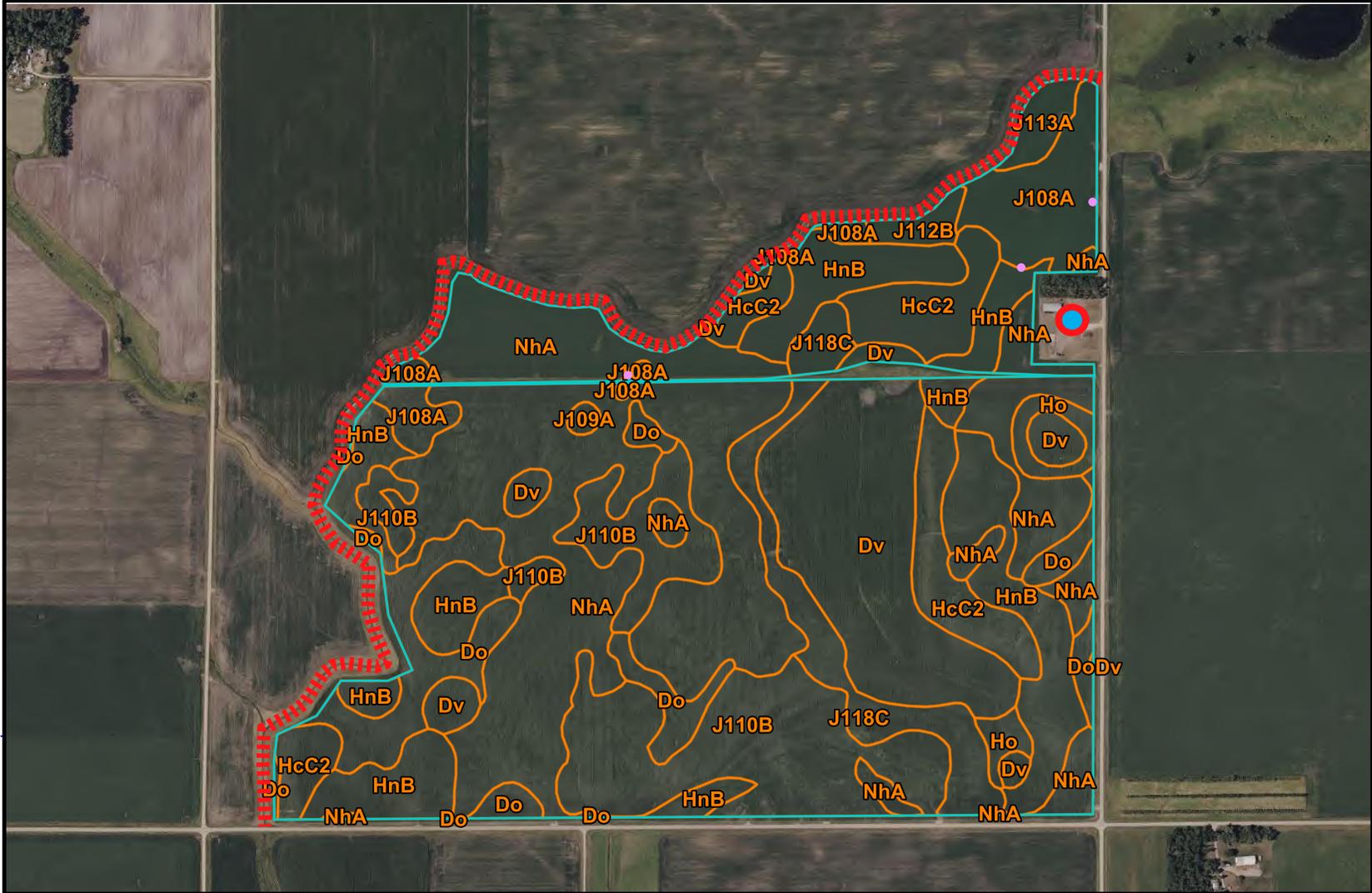
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

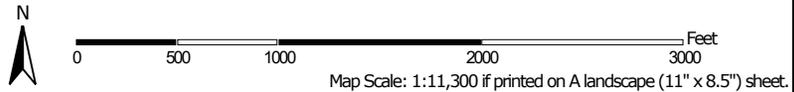
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	12.5	8.8%
Dv	Dovray clay, very poorly drained	3.8	2.6%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	14.8	10.4%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	73.5	51.6%
J109A	Aazdahl-Balaton-Flom complex, 0 to 3 percent slopes	0.1	0.1%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	10.5	7.4%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	27.3	19.2%
<b>Totals for Area of Interest</b>		<b>142.4</b>	<b>100.0%</b>

Section 11 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



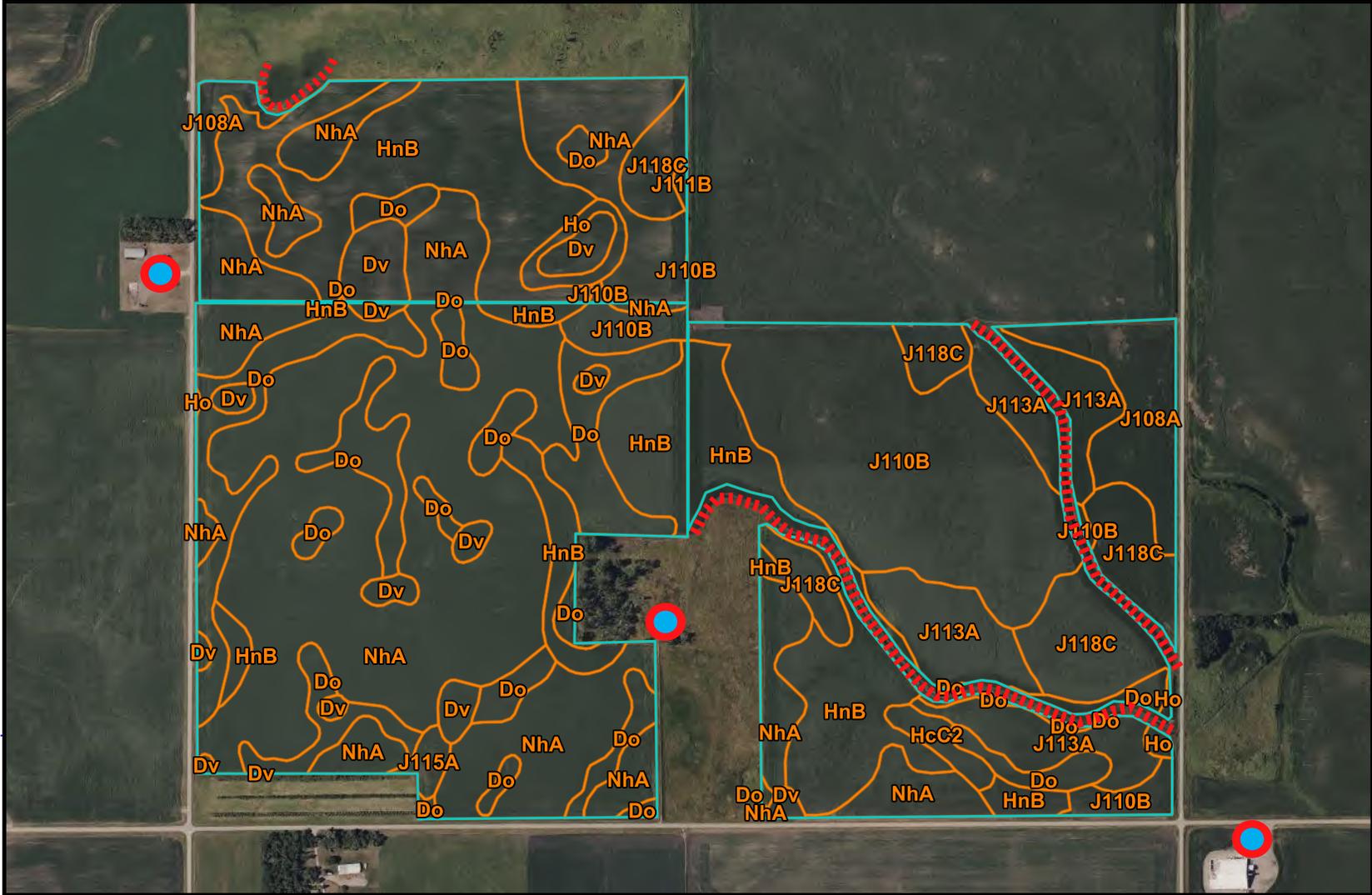
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▬▬▬▬ Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

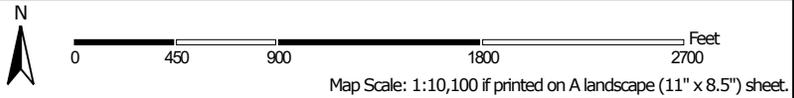
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	22.3	6.8%
Dv	Dovray clay, very poorly drained	43.1	13.2%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	23.6	7.2%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	47.9	14.7%
Ho	Hegne clay	4.5	1.4%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	16.4	5.0%
J109A	Aazdahl-Balaton-Flom complex, 0 to 3 percent slopes	0.7	0.2%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	45.0	13.8%
J112B	Aazdahl-Quam-Lakepark complex, 0 to 4 percent slopes	2.4	0.7%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	3.0	0.9%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	16.0	4.9%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	102.1	31.2%
<b>Totals for Area of Interest</b>		<b>327.0</b>	<b>100.0%</b>

Section 12 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



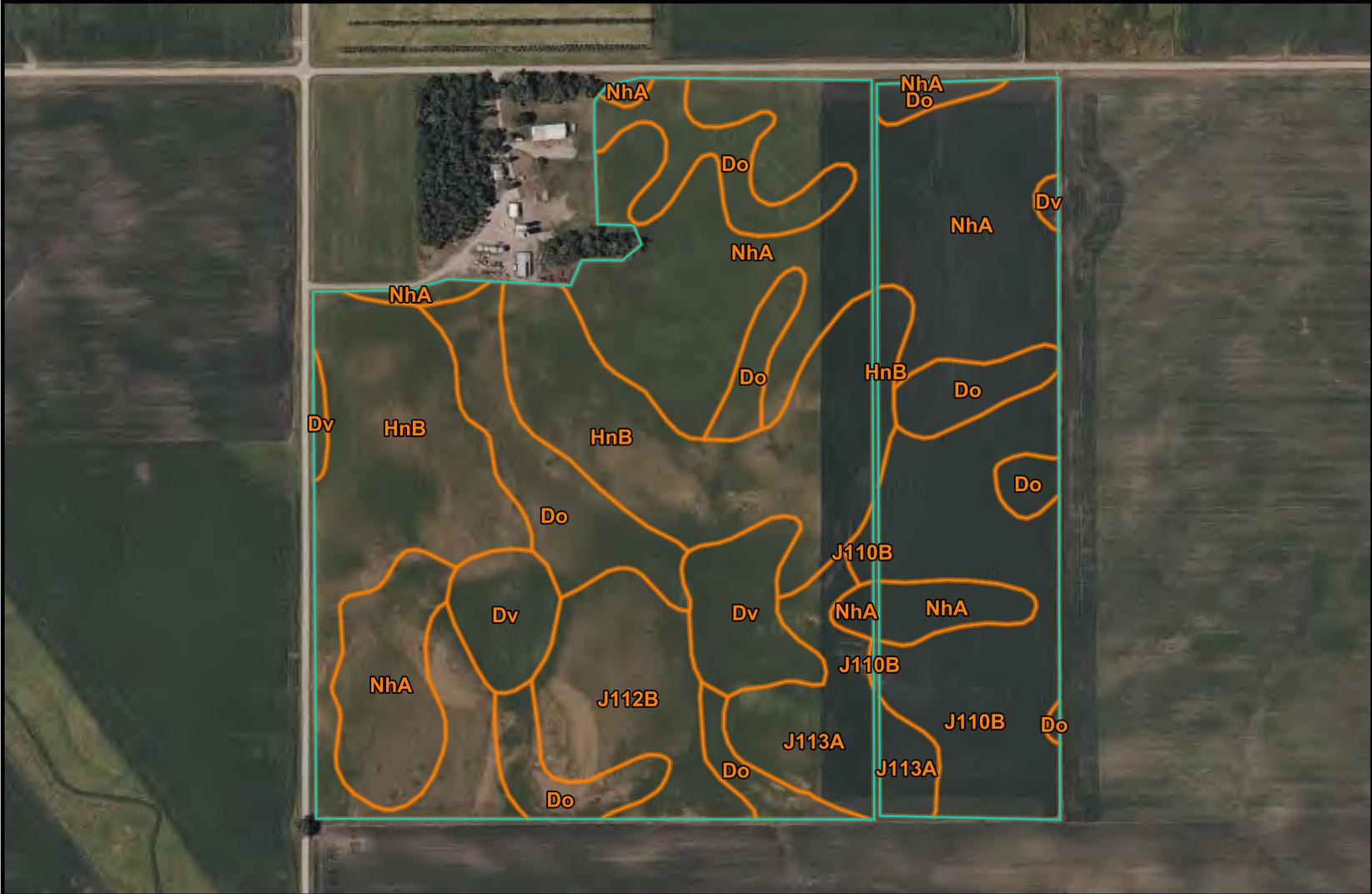
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	42.1	12.1%
Dv	Dovray clay, very poorly drained	10.9	3.1%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	2.0	0.6%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	63.0	18.1%
Ho	Hegne clay	2.7	0.8%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	13.0	3.7%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	46.8	13.4%
J111B	Aazdahl-Lakepark complex, 0 to 4 percent slopes	0.3	0.1%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	22.4	6.4%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	1.3	0.4%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	22.5	6.5%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	121.7	34.9%
<b>Totals for Area of Interest</b>		<b>348.8</b>	<b>100.0%</b>

Section 13 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



Map Scale: 1:6,670 if printed on A landscape (11" x 8.5") sheet.

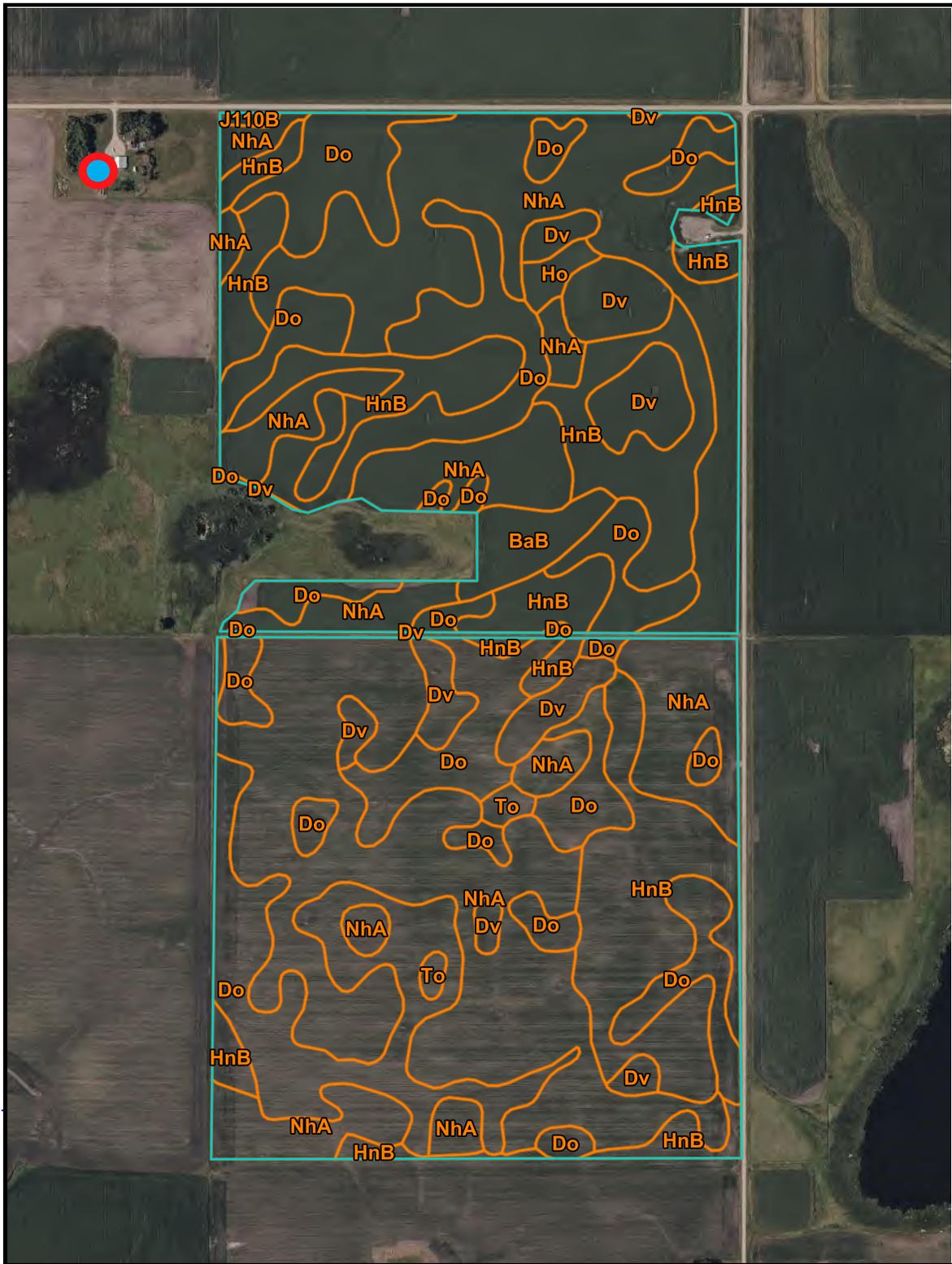
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▨▨▨▨ Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	21.4	15.7%
Dv	Dovray clay, very poorly drained	8.6	6.3%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	33.9	24.8%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	16.1	11.8%
J112B	Aazdahl-Quam-Lakepark complex, 0 to 4 percent slopes	9.1	6.7%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	7.6	5.6%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	39.9	29.2%
<b>Totals for Area of Interest</b>		<b>136.6</b>	<b>100.0%</b>

Section 15 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



Map Scale: 1:9,310 if printed on A portrait (8.5" x 11") sheet.

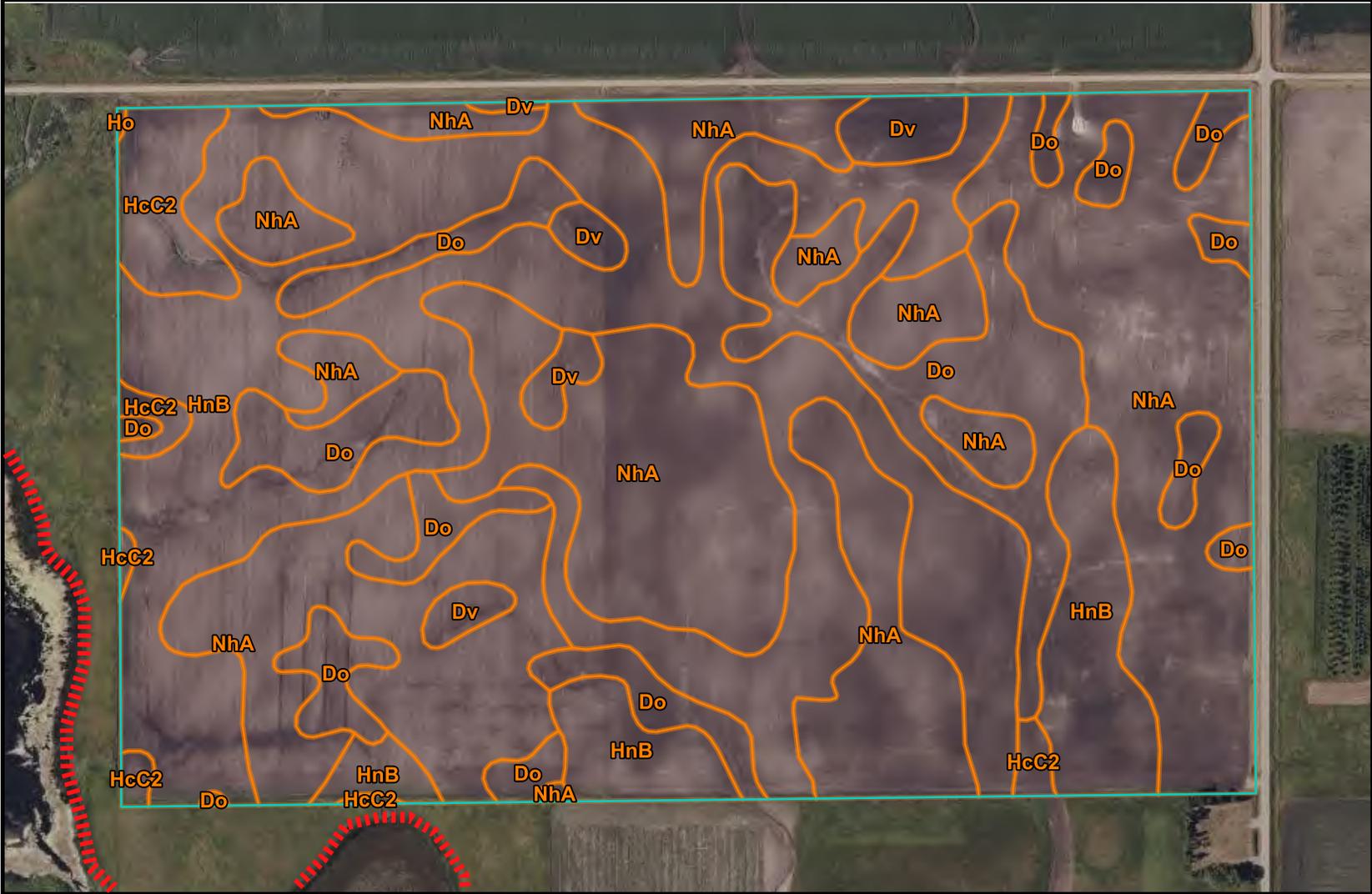
**ENVIRONMENTAL  
 SCIENTIFIC**

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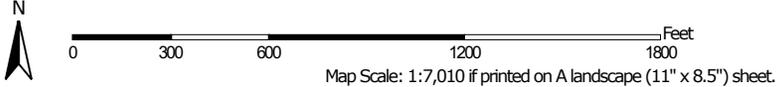
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BaB	Hokans-Buse complex, 2 to 6 percent slopes	4.8	1.6%
Do	Dovray clay, poorly drained	83.6	28.0%
Dv	Dovray clay, very poorly drained	17.8	6.0%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	57.5	19.2%
Ho	Hegne clay	1.6	0.5%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	0.4	0.1%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	131.5	44.0%
To	Tonka loam	1.5	0.5%
<b>Totals for Area of Interest</b>		<b>298.8</b>	<b>100.0%</b>

Section 16 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



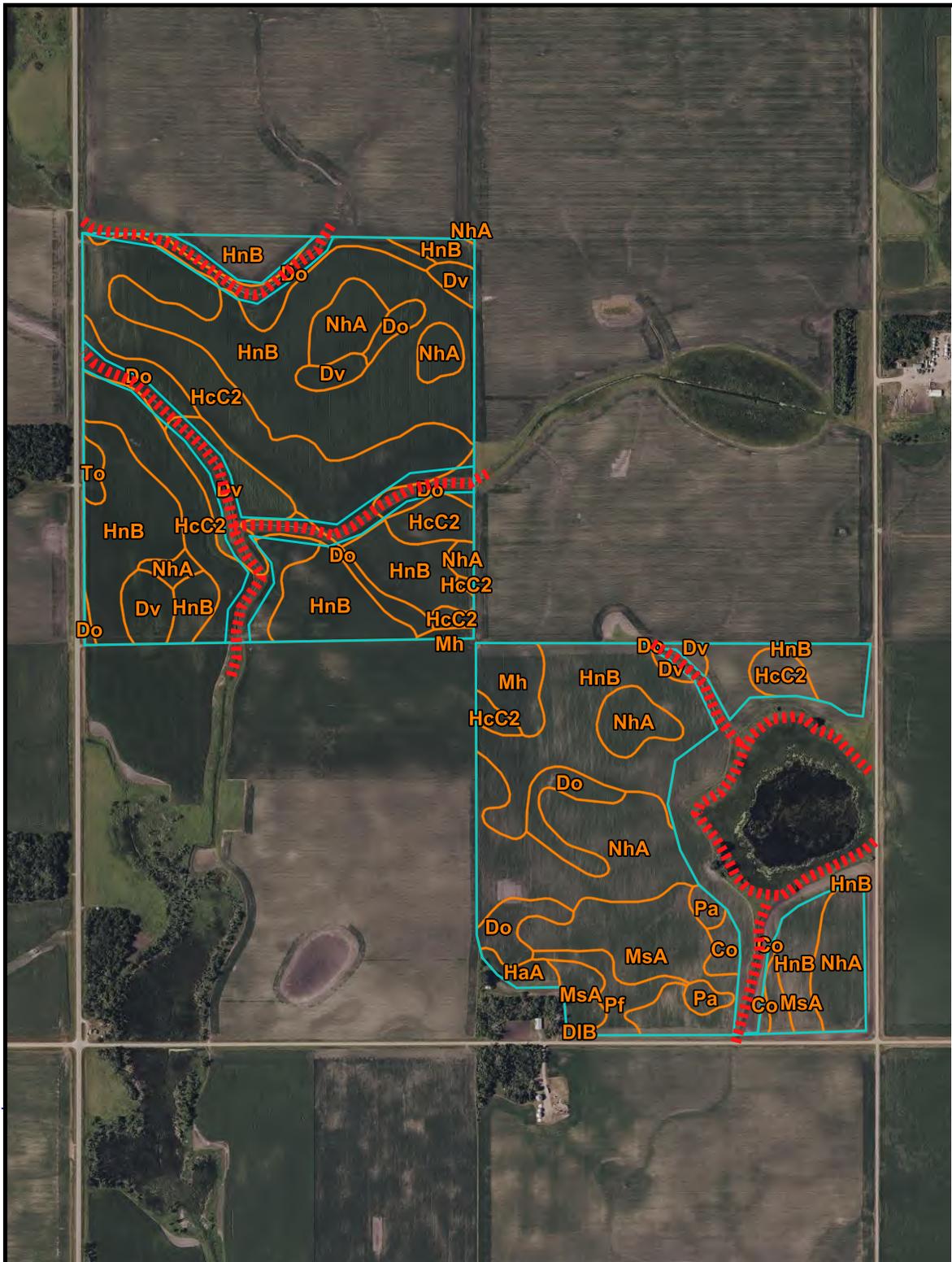
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- |||| Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	37.3	15.1%
Dv	Dovray clay, very poorly drained	6.1	2.5%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	7.7	3.1%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	89.0	36.1%
Ho	Hegne clay	0.1	0.0%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	106.3	43.1%
<b>Totals for Area of Interest</b>		<b>246.5</b>	<b>100.0%</b>

Section 22 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



Map Scale: 1:12,300 if printed on A portrait (8.5" x 11") sheet.

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Co	Colvin silty clay loam	2.1	0.8%
DIB	Byrne silt loam, 1 to 6 percent slopes	0.2	0.1%
Do	Dovray clay, poorly drained	24.2	9.1%
Dv	Dovray clay, very poorly drained	15.7	5.9%
HaA	Balaton-Hamerly complex, 1 to 4 percent slopes	1.6	0.6%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	50.7	19.1%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	101.1	38.2%
Mh	Quam, Cathro, and Urness soils, frequently ponded, 0 to 1 percent slopes	5.4	2.0%
MsA	McIntosh silt loam, 1 to 3 percent slopes	19.0	7.2%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	38.1	14.4%
Pa	Parnell silty clay loam, occasionally ponded, 0 to 1 percent slopes	2.1	0.8%
Pf	Lakepark-Parnell, occasionally ponded, complex, 0 to 2 percent slopes	3.7	1.4%
To	Tonka loam	1.1	0.4%
<b>Totals for Area of Interest</b>		<b>265.0</b>	<b>100.0%</b>

Section 23 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



0 400 800 1600 2400 Feet

Map Scale: 1:8,770 if printed on A landscape (11" x 8.5") sheet.

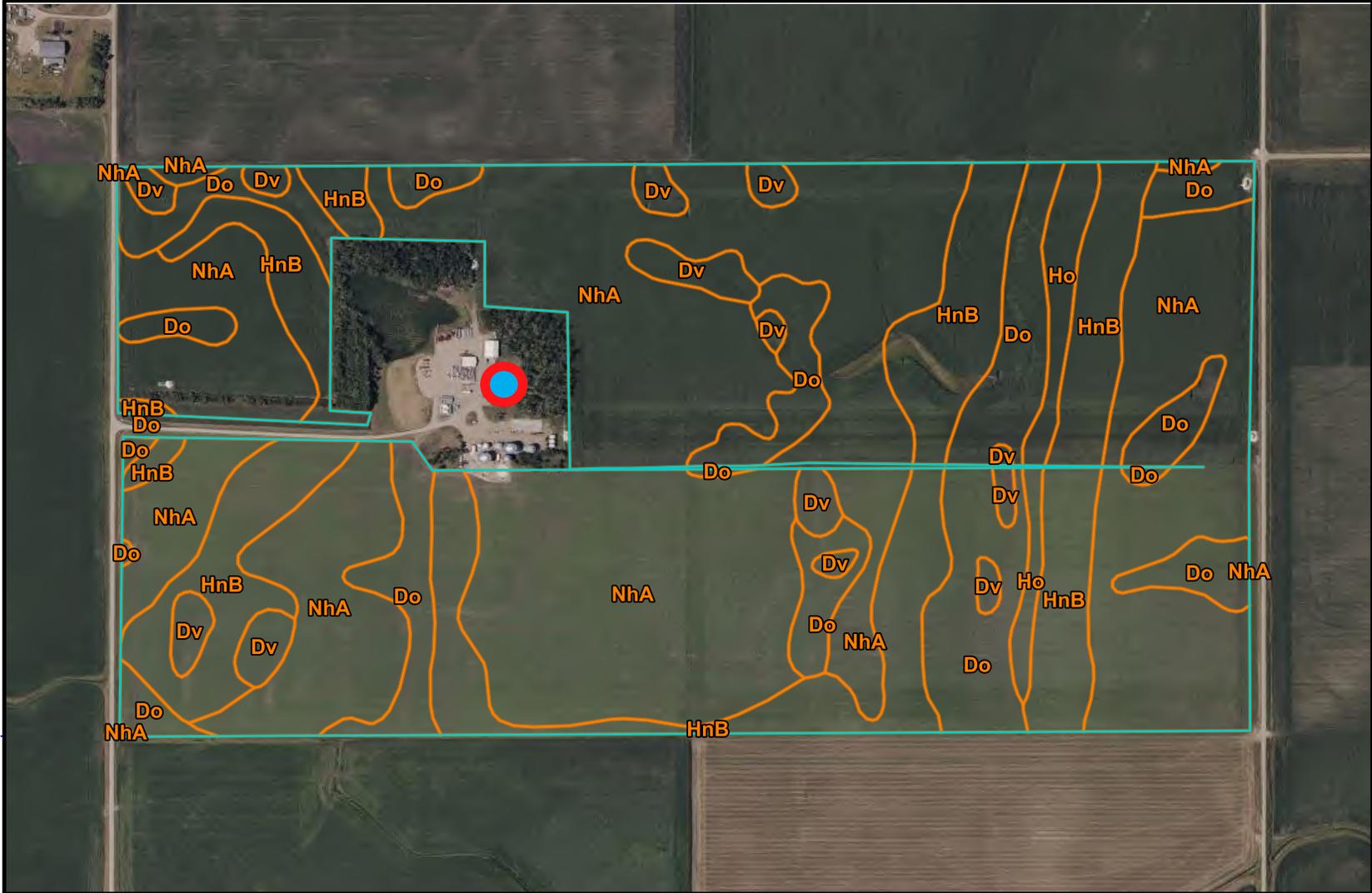
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▬▬▬▬ Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

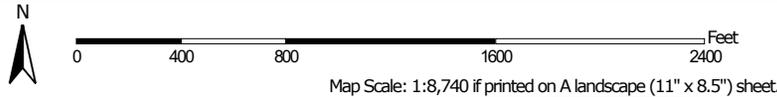
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	38.0	12.4%
Dv	Dovray clay, very poorly drained	18.6	6.0%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	2.0	0.7%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	47.9	15.6%
Mh	Quam, Cathro, and Urness soils, frequently ponded, 0 to 1 percent slopes	0.5	0.2%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	200.7	65.2%
<b>Totals for Area of Interest</b>		<b>307.7</b>	<b>100.0%</b>

Section 24 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



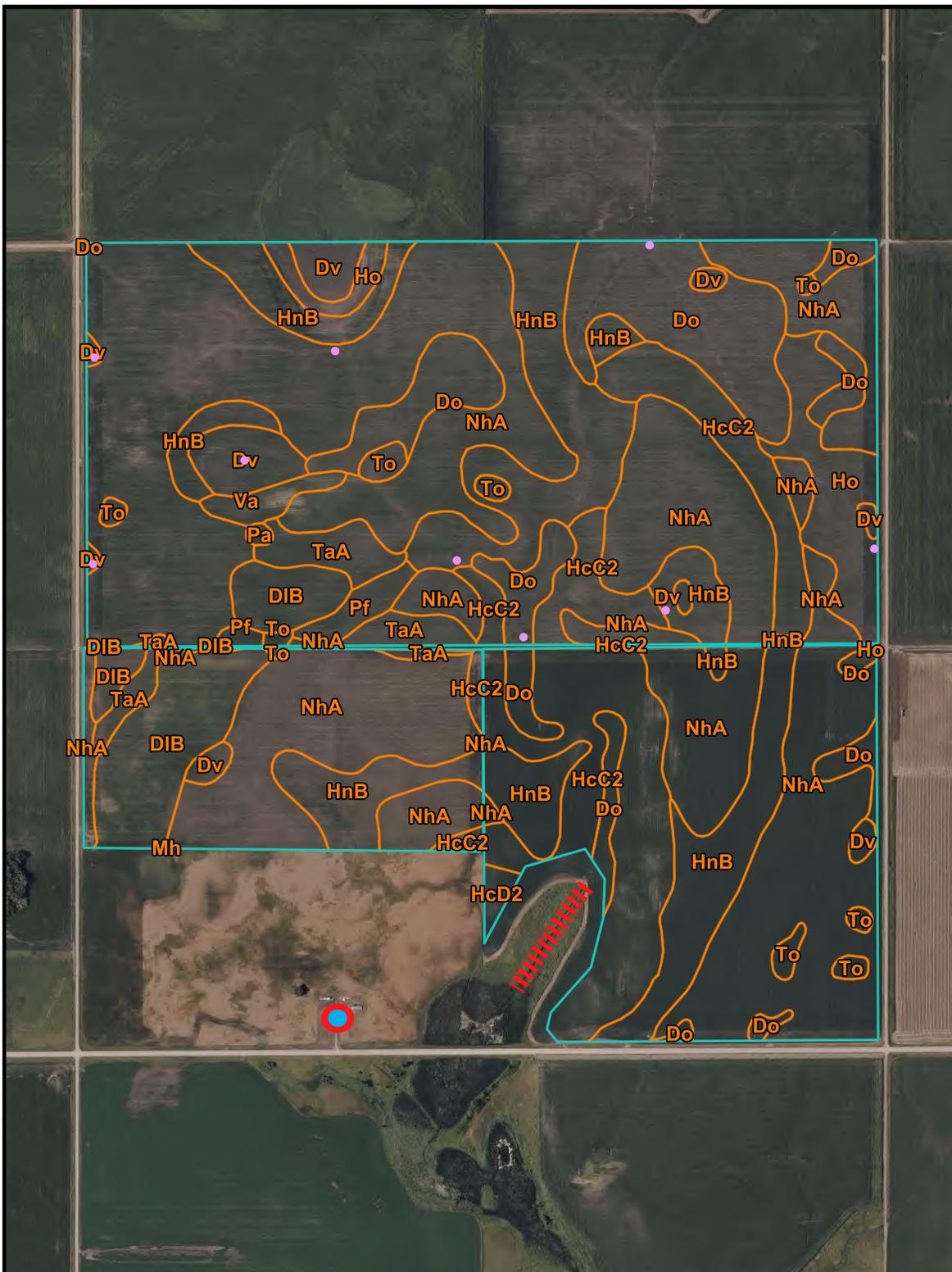
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- |||| Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

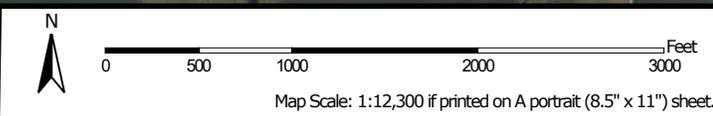
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	47.6	16.7%
Dv	Dovray clay, very poorly drained	11.3	4.0%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	60.4	21.1%
Ho	Hegne clay	6.0	2.1%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	160.5	56.1%
<b>Totals for Area of Interest</b>		<b>285.8</b>	<b>100.0%</b>

Section 25 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▨▨▨▨ Lake/Stream/Ditch Buffer
- Tile Intake



**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DIB	Byrne silt loam, 1 to 6 percent slopes	27.2	5.1%
Do	Dovray clay, poorly drained	52.1	9.9%
Dv	Dovray clay, very poorly drained	13.6	2.6%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	61.1	11.6%
HcD2	Hattie clay, 12 to 18 percent slopes, eroded	1.5	0.3%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	80.1	15.2%
Ho	Hegne clay	18.6	3.5%
Mh	Quam, Cathro, and Urness soils, frequently ponded, 0 to 1 percent slopes	0.0	0.0%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	247.9	47.0%
Pa	Parnell silty clay loam, occasionally ponded, 0 to 1 percent slopes	0.5	0.1%
Pf	Lakepark-Parnell, occasionally ponded, complex, 0 to 2 percent slopes	4.4	0.8%
TaA	Tara silt loam, 1 to 3 percent slopes	12.1	2.3%
To	Tonka loam	5.6	1.1%
Va	Vallers clay loam, 0 to 2 percent slopes	3.3	0.6%
<b>Totals for Area of Interest</b>		<b>527.9</b>	<b>100.0%</b>

Section 26 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



Map Scale: 1:8,720 if printed on A landscape (11" x 8.5") sheet.

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▄▄▄▄ Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BaB	Hokans-Buse complex, 2 to 6 percent slopes	10.7	3.5%
BdA	Bearden silt loam, 0 to 2 percent slopes	9.1	3.0%
Be	Biscay silty clay loam	2.5	0.8%
DIB	Byrne silt loam, 1 to 6 percent slopes	10.8	3.5%
Do	Dovray clay, poorly drained	46.1	15.1%
Dv	Dovray clay, very poorly drained	9.3	3.0%
HaA	Balaton-Hamerly complex, 1 to 4 percent slopes	1.3	0.4%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	43.4	14.2%
Mh	Quam, Cathro, and Urness soils, frequently ponded, 0 to 1 percent slopes	2.0	0.7%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	168.4	55.1%
Pf	Lakepark-Parnell, occasionally ponded, complex, 0 to 2 percent slopes	0.0	0.0%
TaA	Tara silt loam, 1 to 3 percent slopes	1.8	0.6%
<b>Totals for Area of Interest</b>		<b>305.4</b>	<b>100.0%</b>

Section 27 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



Map Scale: 1:6,710 if printed on A landscape (11" x 8.5") sheet.

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▬▬▬▬ Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

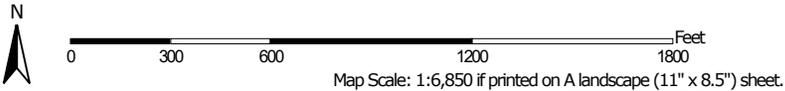
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BaA	Hokans-Svea complex, 1 to 4 percent slopes	10.2	6.9%
BaB	Hokans-Buse complex, 2 to 6 percent slopes	6.6	4.4%
BdA	Bearden silt loam, 0 to 2 percent slopes	40.4	27.2%
Co	Colvin silty clay loam	6.2	4.2%
DIB	Byrne silt loam, 1 to 6 percent slopes	47.3	31.8%
Do	Dovray clay, poorly drained	1.5	1.0%
HaA	Balaton-Hamerly complex, 1 to 4 percent slopes	0.2	0.1%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	3.4	2.3%
Mh	Quam, Cathro, and Urness soils, frequently ponded, 0 to 1 percent slopes	5.7	3.8%
MsA	McIntosh silt loam, 1 to 3 percent slopes	4.3	2.9%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	0.1	0.0%
Pa	Parnell silty clay loam, occasionally ponded, 0 to 1 percent slopes	0.9	0.6%
Pf	Lakepark-Parnell, occasionally ponded, complex, 0 to 2 percent slopes	7.4	5.0%
TaA	Tara silt loam, 1 to 3 percent slopes	14.3	9.6%
<b>Totals for Area of Interest</b>		<b>148.6</b>	<b>100.0%</b>

Section 33 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



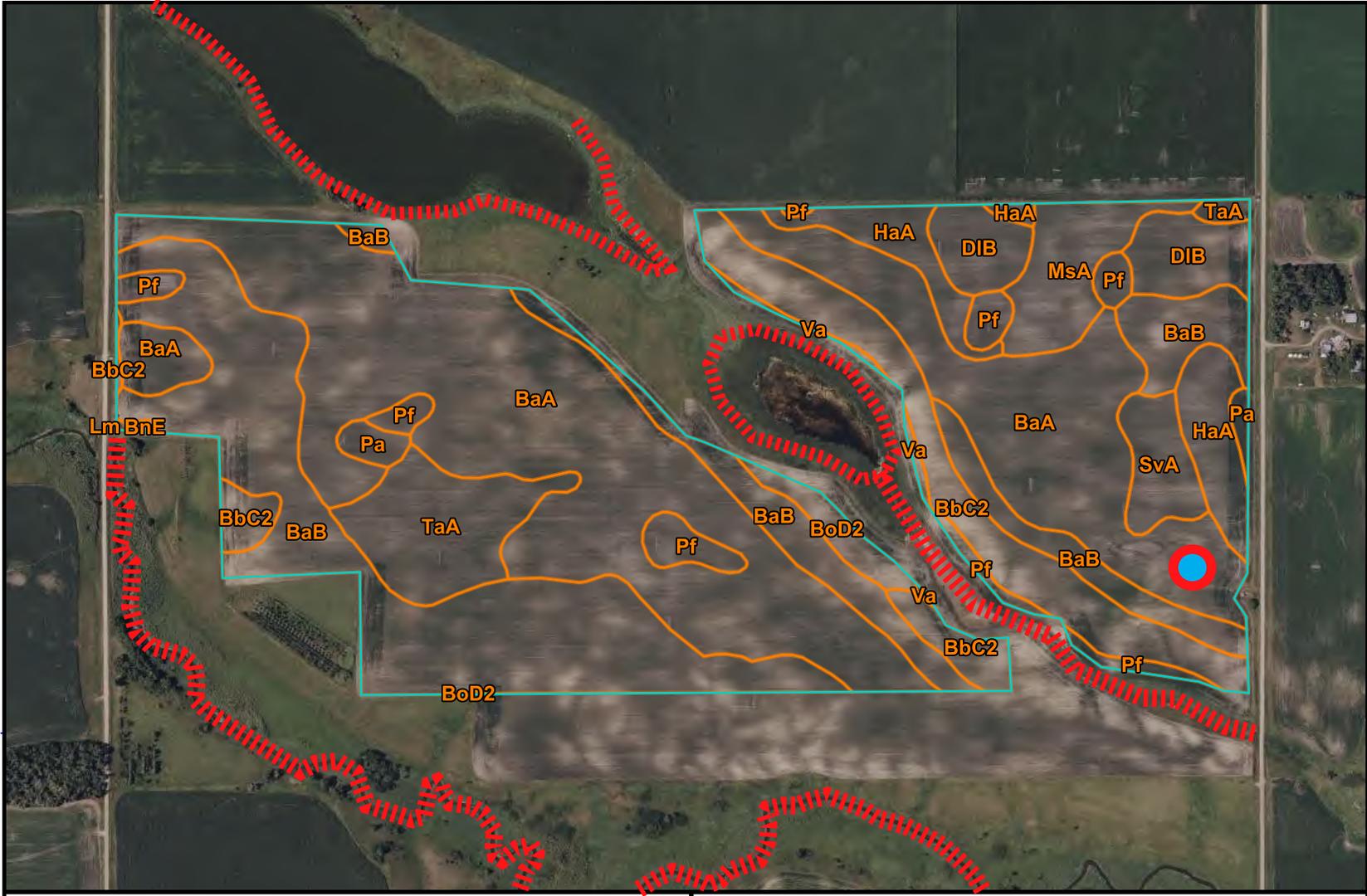
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

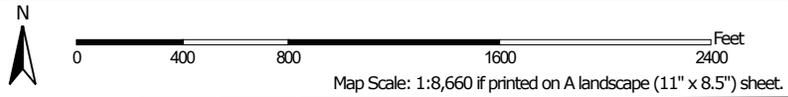
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DIB	Byrne silt loam, 1 to 6 percent slopes	29.5	17.2%
Do	Dovray clay, poorly drained	7.7	4.5%
Dv	Dovray clay, very poorly drained	6.0	3.5%
MsA	McIntosh silt loam, 1 to 3 percent slopes	6.3	3.7%
NcA	Nutley clay, silty substratum, 0 to 2 percent slopes	109.0	63.4%
Pf	Lakepark-Parnell, occasionally ponded, complex, 0 to 2 percent slopes	0.6	0.4%
TaA	Tara silt loam, 1 to 3 percent slopes	4.7	2.7%
To	Tonka loam	1.6	0.9%
Wn	Winger silty clay loam	6.3	3.7%
<b>Totals for Area of Interest</b>		<b>171.9</b>	<b>100.0%</b>

Section 35 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



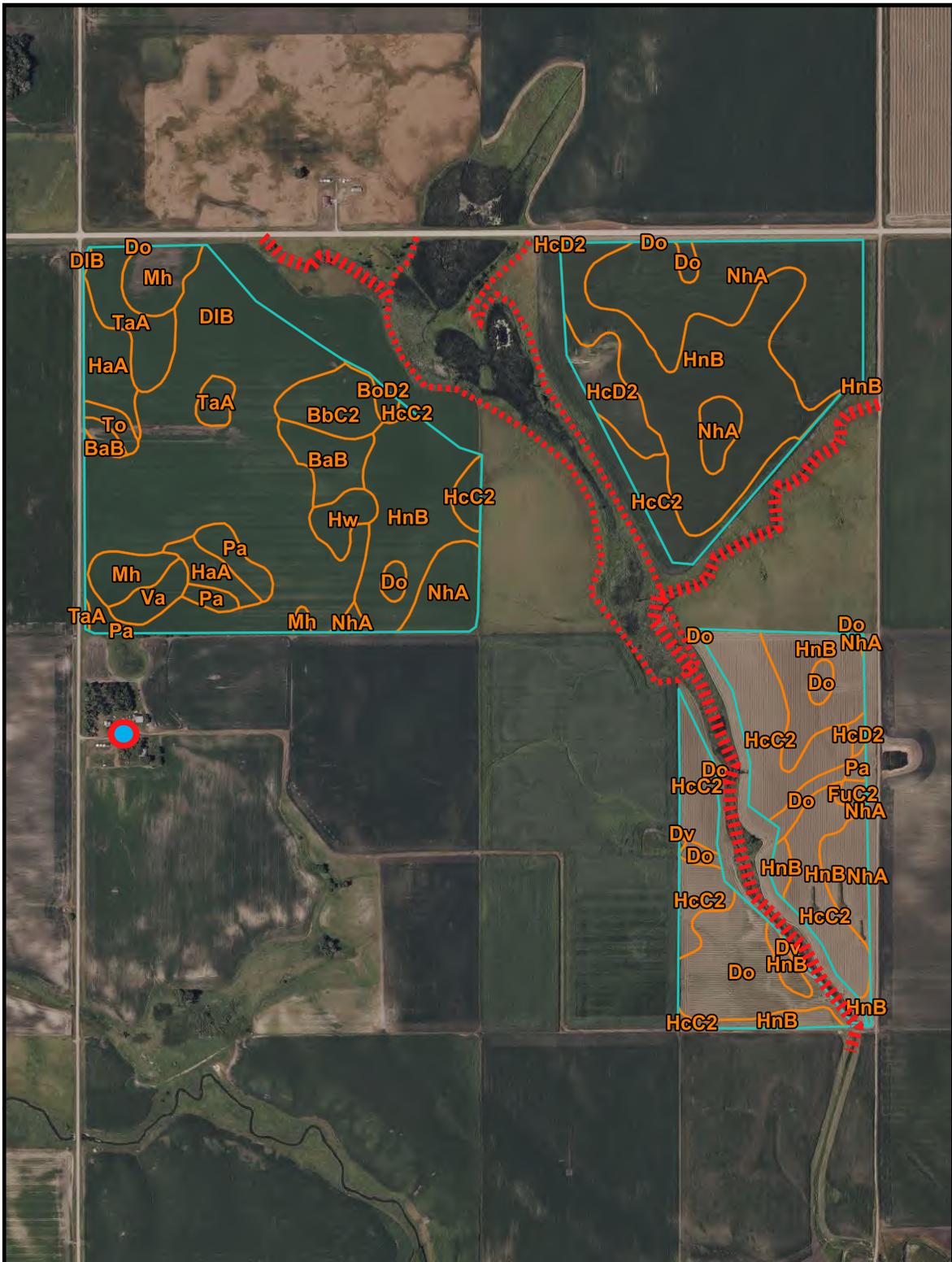
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▬▬▬▬ Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

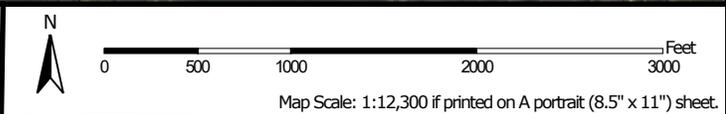
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BaA	Hokans-Svea complex, 1 to 4 percent slopes	80.0	40.2%
BaB	Hokans-Buse complex, 2 to 6 percent slopes	51.6	25.9%
BbC2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	18.1	9.1%
BnE	Langhei loam, 12 to 40 percent slopes	0.1	0.1%
BoD2	Langhei-Barnes, moderately eroded, complex, 12 to 20 percent slopes	2.4	1.2%
DIB	Byrne silt loam, 1 to 6 percent slopes	7.7	3.9%
HaA	Balaton-Hamerly complex, 1 to 4 percent slopes	8.9	4.5%
Lm	Lamoure silty clay loam, 0 to 2 percent slopes, occasionally flooded	0.1	0.0%
MsA	McIntosh silt loam, 1 to 3 percent slopes	6.6	3.3%
Pa	Parnell silty clay loam, occasionally ponded, 0 to 1 percent slopes	1.6	0.8%
Pf	Lakepark-Parnell, occasionally ponded, complex, 0 to 2 percent slopes	6.8	3.4%
SvA	Svea loam, 1 to 3 percent slopes	4.0	2.0%
TaA	Tara silt loam, 1 to 3 percent slopes	10.2	5.1%
Va	Vallers clay loam, 0 to 2 percent slopes	0.8	0.4%
<b>Totals for Area of Interest</b>		<b>198.9</b>	<b>100.0%</b>

Section 36 - T123N - R43W  
 Synnes Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

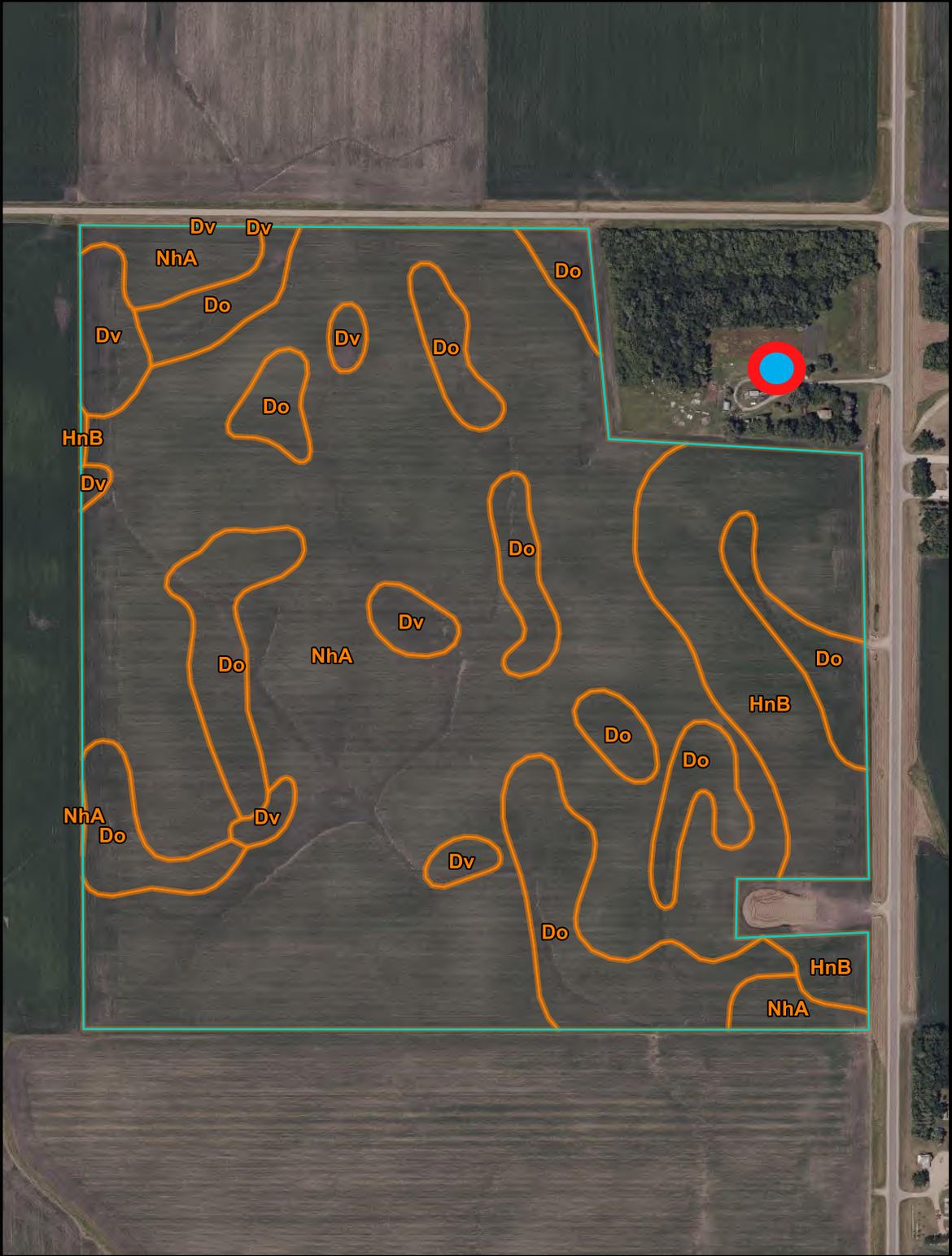


**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BaB	Hokans-Buse complex, 2 to 6 percent slopes	5.3	2.1%
BbC2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	5.4	2.1%
BoD2	Langhei-Barnes, moderately eroded, complex, 12 to 20 percent slopes	0.8	0.3%
DIB	Byrne silt loam, 1 to 6 percent slopes	55.0	22.0%
Do	Dovray clay, poorly drained	15.8	6.3%
Dv	Dovray clay, very poorly drained	0.2	0.1%
FuC2	Forman-Buse complex, 6 to 12 percent slopes, moderately eroded	0.7	0.3%
HaA	Balaton-Hamerly complex, 1 to 4 percent slopes	7.0	2.8%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	34.3	13.7%
HcD2	Hattie clay, 12 to 18 percent slopes, eroded	5.9	2.3%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	60.6	24.2%
Hw	Hidewood silty clay loam	2.7	1.1%
Mh	Quam, Cathro, and Urness soils, frequently ponded, 0 to 1 percent slopes	7.6	3.0%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	34.1	13.6%
Pa	Parnell silty clay loam, occasionally ponded, 0 to 1 percent slopes	3.9	1.6%
TaA	Tara silt loam, 1 to 3 percent slopes	7.6	3.0%
To	Tonka loam	1.2	0.5%
Va	Vallers clay loam, 0 to 2 percent slopes	2.4	1.0%
<b>Totals for Area of Interest</b>		<b>250.7</b>	<b>100.0%</b>

Section 10 - T123N - R44W  
Stevens Township - Stevens County



USDA Soils Map - Manure App.  
West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



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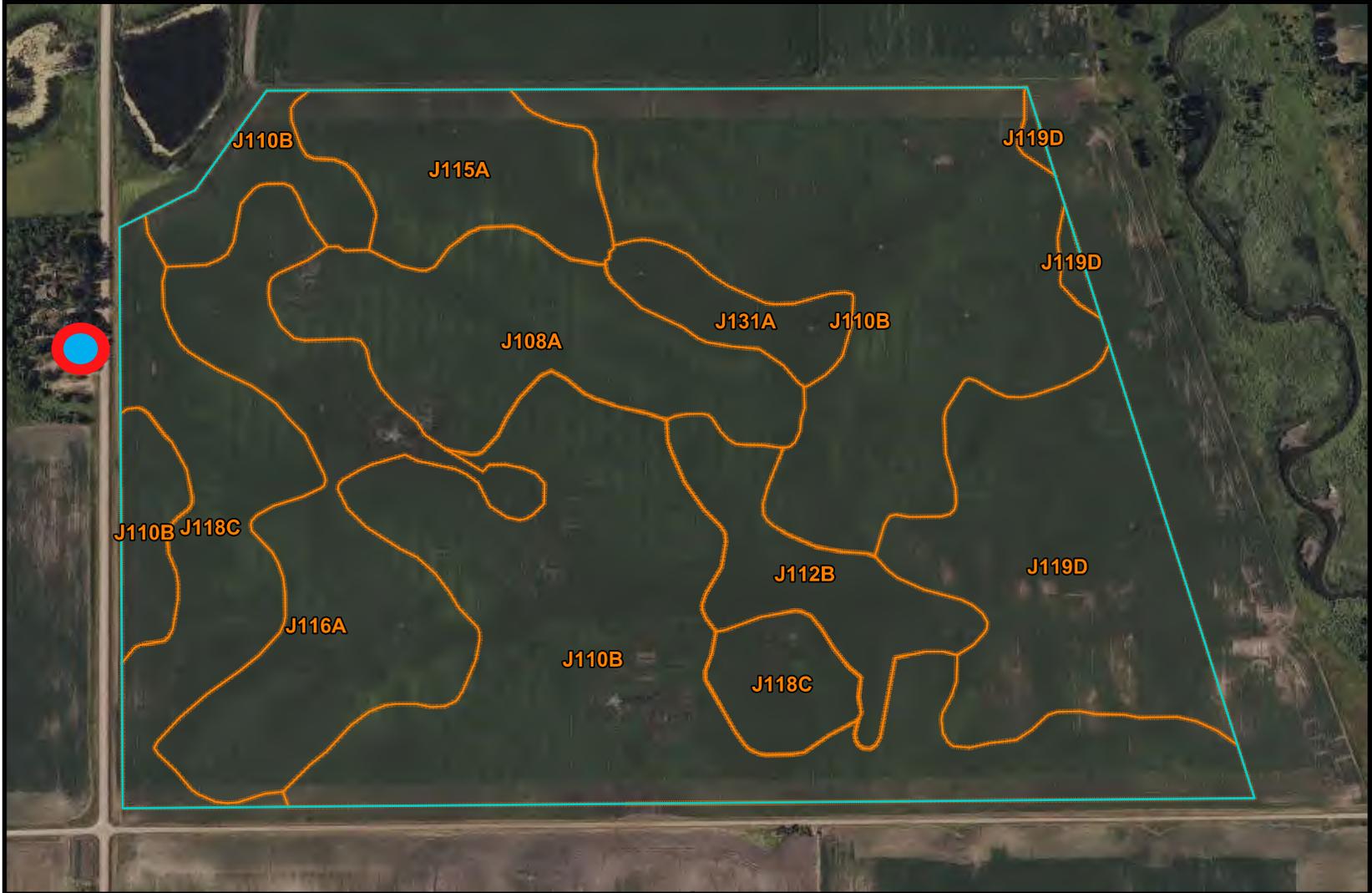
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**ENVIRONMENTAL  
SCIENTIFIC**

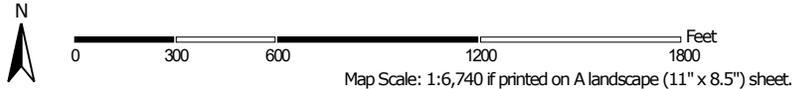
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	28.0	20.3%
Dv	Dovray clay, very poorly drained	5.2	3.8%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	15.7	11.4%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	88.9	64.5%
<b>Totals for Area of Interest</b>		<b>137.8</b>	<b>100.0%</b>

Section 7 - T124N - R42W  
 Darnen Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



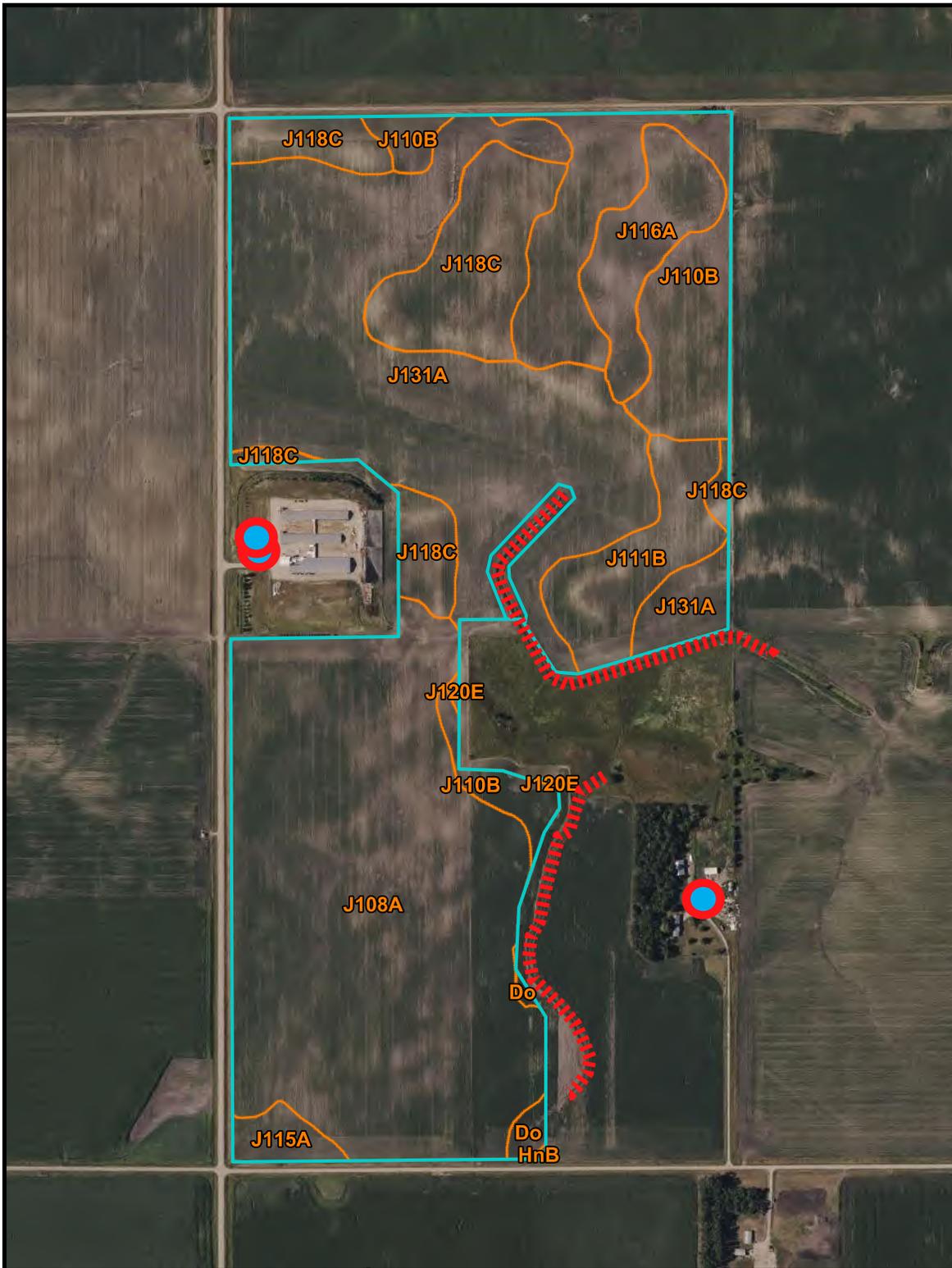
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▬▬▬▬ Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	18.6	9.0%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	94.0	45.6%
J112B	Aazdahl-Quam-Lakepark complex, 0 to 4 percent slopes	9.4	4.5%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	11.4	5.5%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	24.5	11.9%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	19.7	9.6%
J119D	Barnes-Svea-Buse complex, 3 to 15 percent slopes	24.2	11.7%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	4.6	2.2%
<b>Totals for Area of Interest</b>		<b>206.4</b>	<b>100.0%</b>

Section 18 - T124N - R42W  
 Darnen Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



Map Scale: 1:9,290 if printed on A portrait (8.5" x 11") sheet.

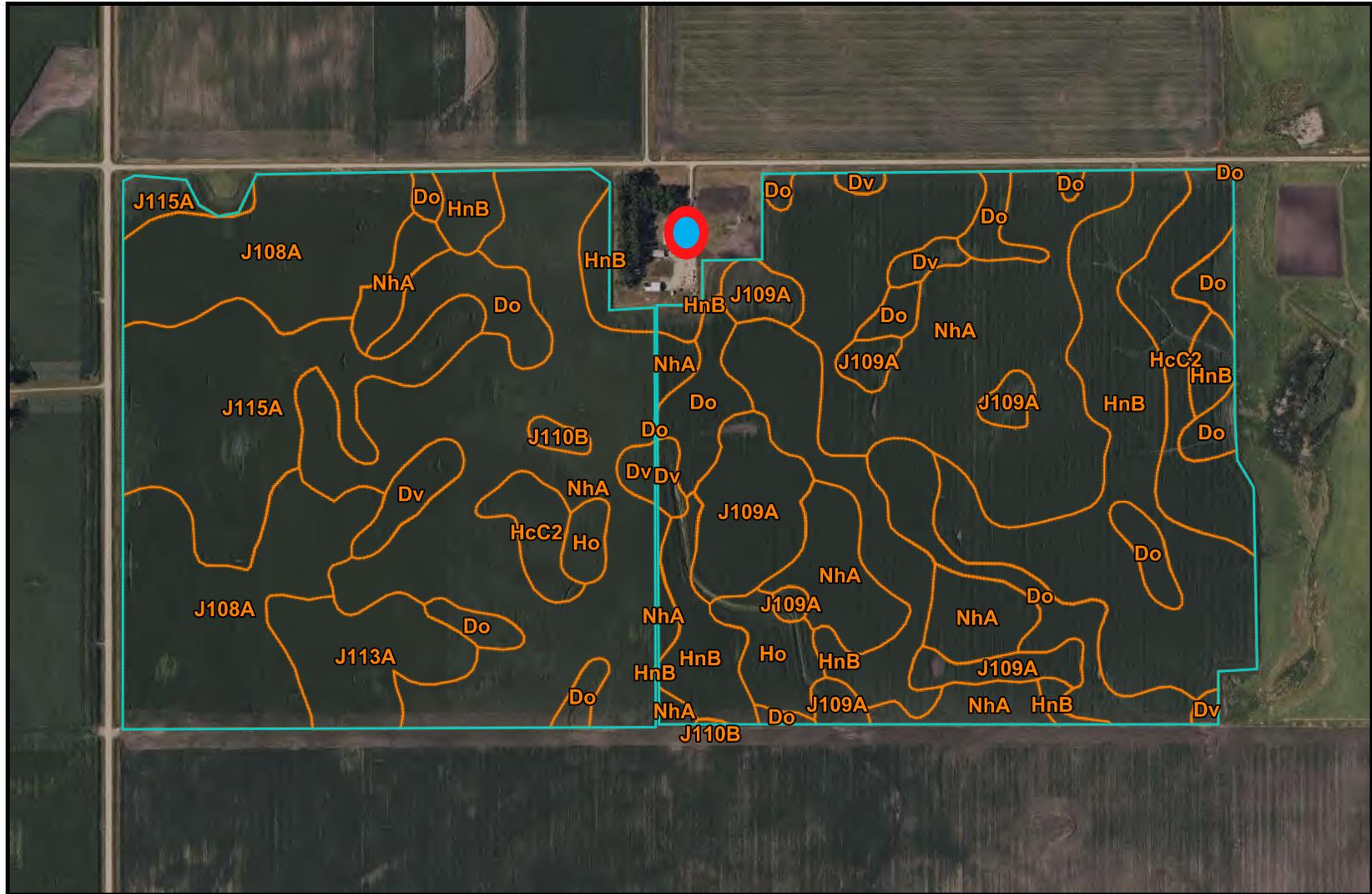
**ENVIRONMENTAL  
 SCIENTIFIC**



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	1.2	0.6%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	0.1	0.0%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	78.8	36.2%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	27.3	12.5%
J111B	Aazdahl-Lakepark complex, 0 to 4 percent slopes	10.7	4.9%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	2.6	1.2%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	9.7	4.5%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	22.4	10.3%
J120E	Langhei-Barnes-Darnen complex, 5 to 30 percent slopes	0.2	0.1%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	64.9	29.8%
<b>Totals for Area of Interest</b>		<b>217.9</b>	<b>100.0%</b>

Section 19 - T124N - R42W  
 Darnen Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



Map Scale: 1:8,890 if printed on A landscape (11" x 8.5") sheet.

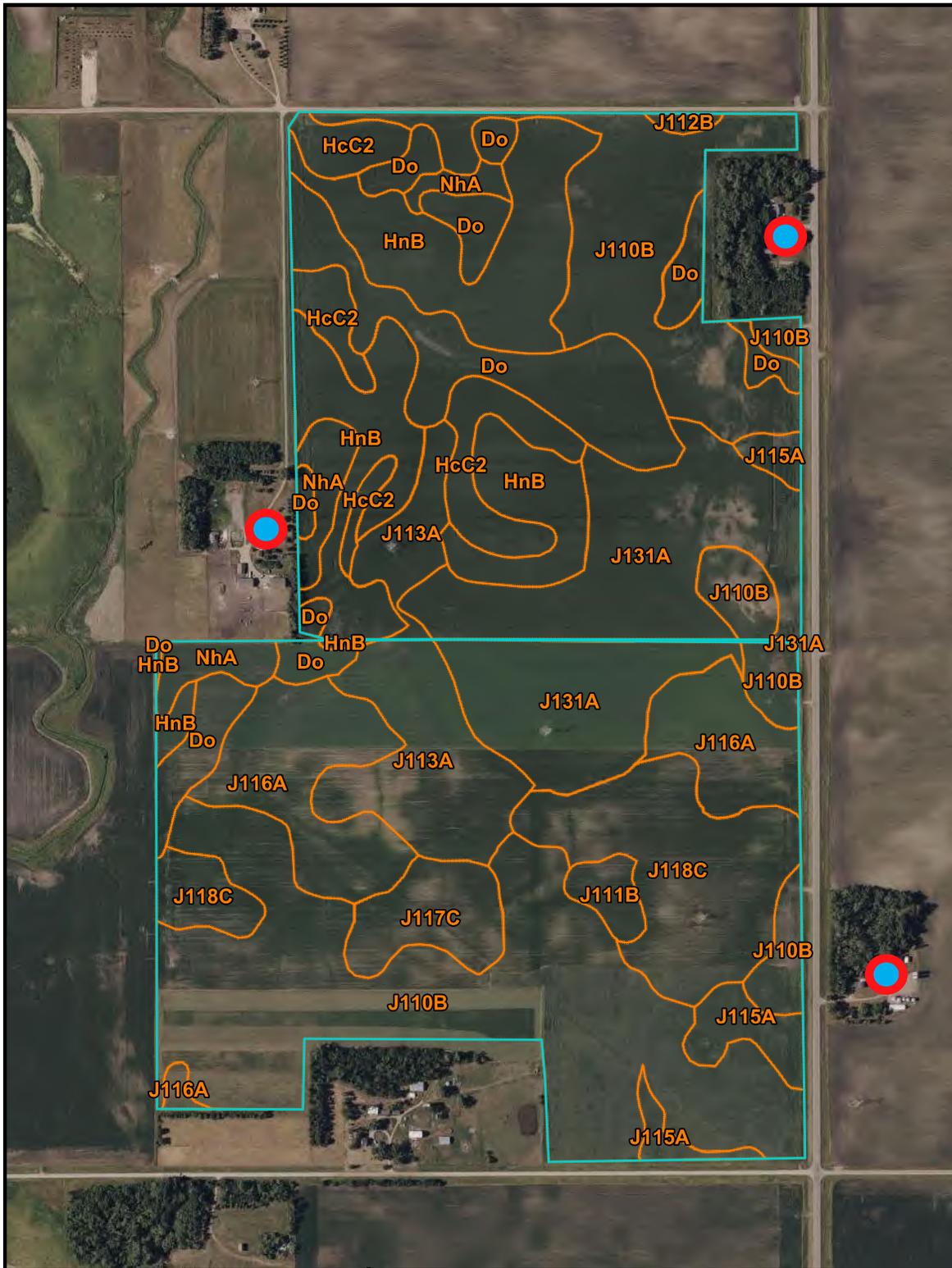
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▨▨▨▨ Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

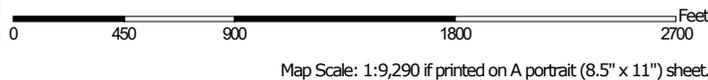
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	28.6	9.5%
Dv	Dovray clay, very poorly drained	6.2	2.1%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	13.4	4.5%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	53.0	17.6%
Ho	Hegne clay	5.7	1.9%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	37.7	12.5%
J109A	Aazdahl-Balaton-Flom complex, 0 to 3 percent slopes	16.6	5.5%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	0.8	0.3%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	9.4	3.1%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	24.8	8.2%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	104.3	34.7%
<b>Totals for Area of Interest</b>		<b>300.5</b>	<b>100.0%</b>

Section 20 - T124N - R42W  
 Darnen Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



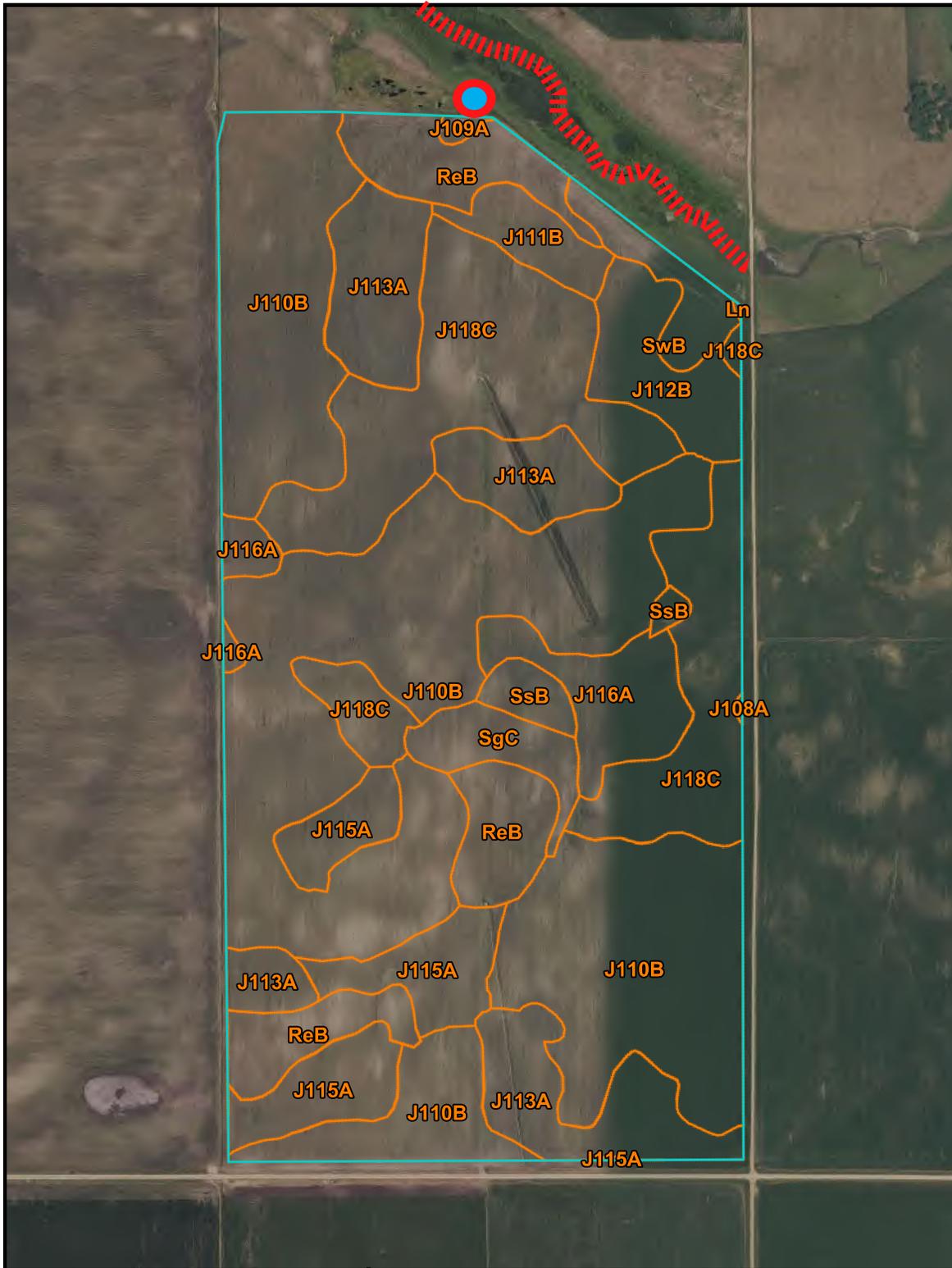
**ENVIRONMENTAL  
 SCIENTIFIC**



## Map Unit Legend

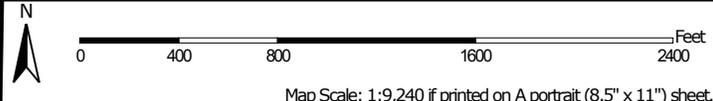
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	30.7	9.9%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	13.1	4.2%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	38.5	12.4%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	92.8	29.8%
J111B	Aazdahl-Lakepark complex, 0 to 4 percent slopes	2.5	0.8%
J112B	Aazdahl-Quam-Lakepark complex, 0 to 4 percent slopes	0.7	0.2%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	20.7	6.7%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	6.9	2.2%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	24.4	7.8%
J117C	Hokans-Svea complex, 2 to 9 percent slopes	7.5	2.4%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	25.0	8.0%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	40.9	13.2%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	7.3	2.4%
<b>Totals for Area of Interest</b>		<b>311.0</b>	<b>100.0%</b>

Section 21 - T124N - R42W  
 Darnen Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

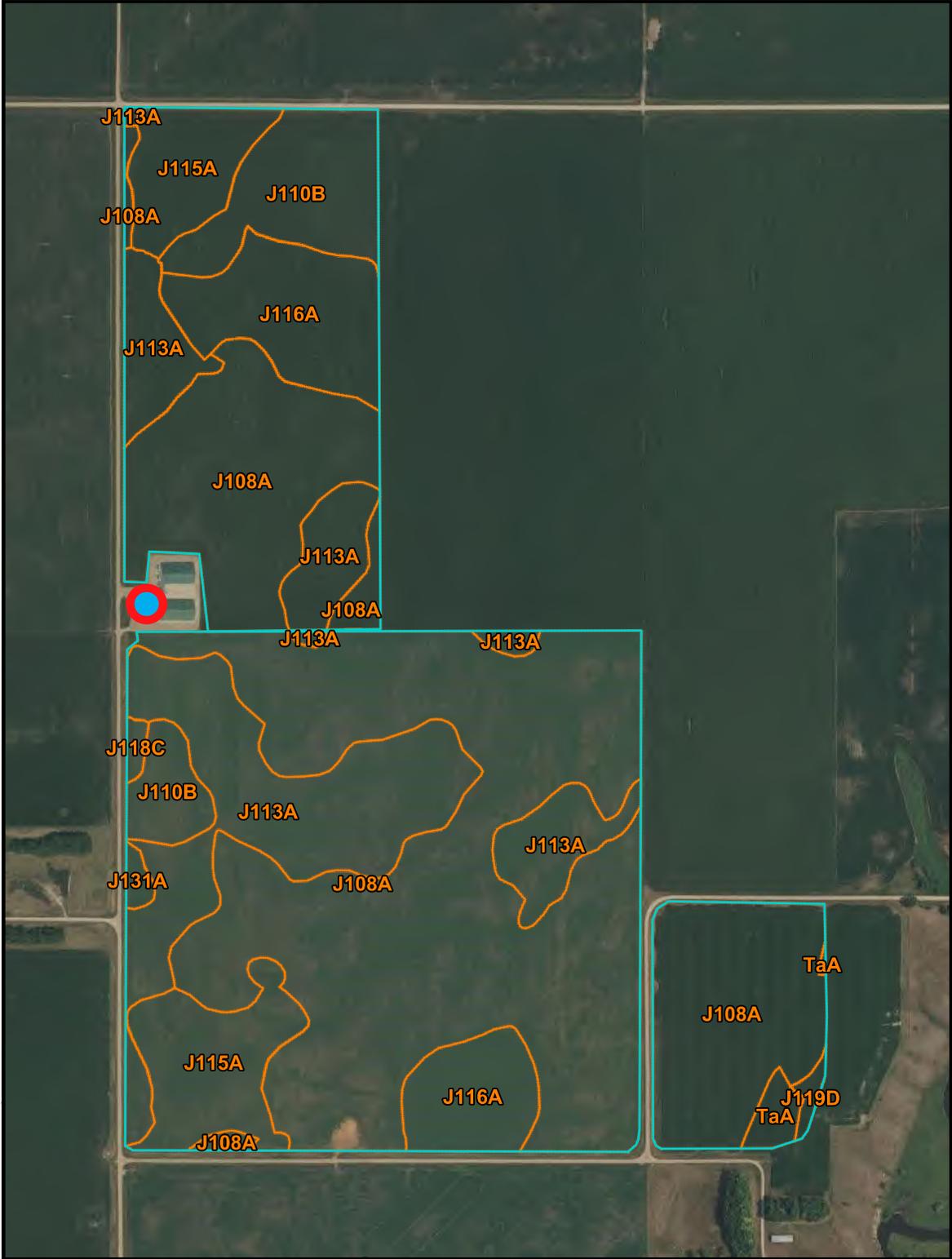


**ENVIRONMENTAL  
 SCIENTIFIC**

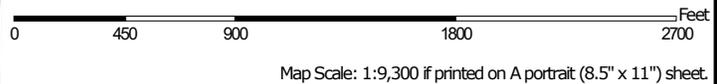
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	0.1	0.0%
J109A	Aazdahl-Balaton-Flom complex, 0 to 3 percent slopes	0.5	0.2%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	128.3	43.9%
J111B	Aazdahl-Lakepark complex, 0 to 4 percent slopes	5.0	1.7%
J112B	Aazdahl-Quam-Lakepark complex, 0 to 4 percent slopes	9.5	3.3%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	31.6	10.8%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	18.5	6.3%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	11.7	4.0%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	51.3	17.6%
Ln	Lamoure silty clay loam, 0 to 2 percent slopes, frequently flooded	0.0	0.0%
ReB	Renshaw loam, 1 to 6 percent slopes	21.3	7.3%
SgC	Sandberg sandy loam, 2 to 12 percent slopes	5.6	1.9%
SsB	Sandberg sandy loam, 1 to 6 percent slopes	3.3	1.1%
SwB	Sverdrup sandy loam, 2 to 6 percent slopes	5.1	1.7%
<b>Totals for Area of Interest</b>		<b>292.0</b>	<b>100.0%</b>

Section 27 - T124N - R42W  
 Darnen Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion



- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	142.2	56.7%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	17.0	6.8%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	45.8	18.3%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	20.2	8.1%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	21.6	8.6%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	0.6	0.3%
J119D	Barnes-Svea-Buse complex, 3 to 15 percent slopes	0.7	0.3%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	0.8	0.3%
TaA	Tara silt loam, 1 to 3 percent slopes	1.8	0.7%
<b>Totals for Area of Interest</b>		<b>250.7</b>	<b>100.0%</b>

Section 28 - T124N - R42W  
 Darnen Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- |||| Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

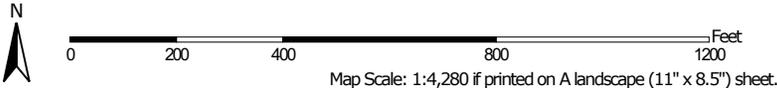
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	94.4	45.8%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	15.1	7.3%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	57.3	27.8%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	14.7	7.1%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	8.3	4.0%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	5.7	2.7%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	10.7	5.2%
<b>Totals for Area of Interest</b>		<b>206.1</b>	<b>100.0%</b>

Section 30 - T124N - R42W  
 Darnen Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



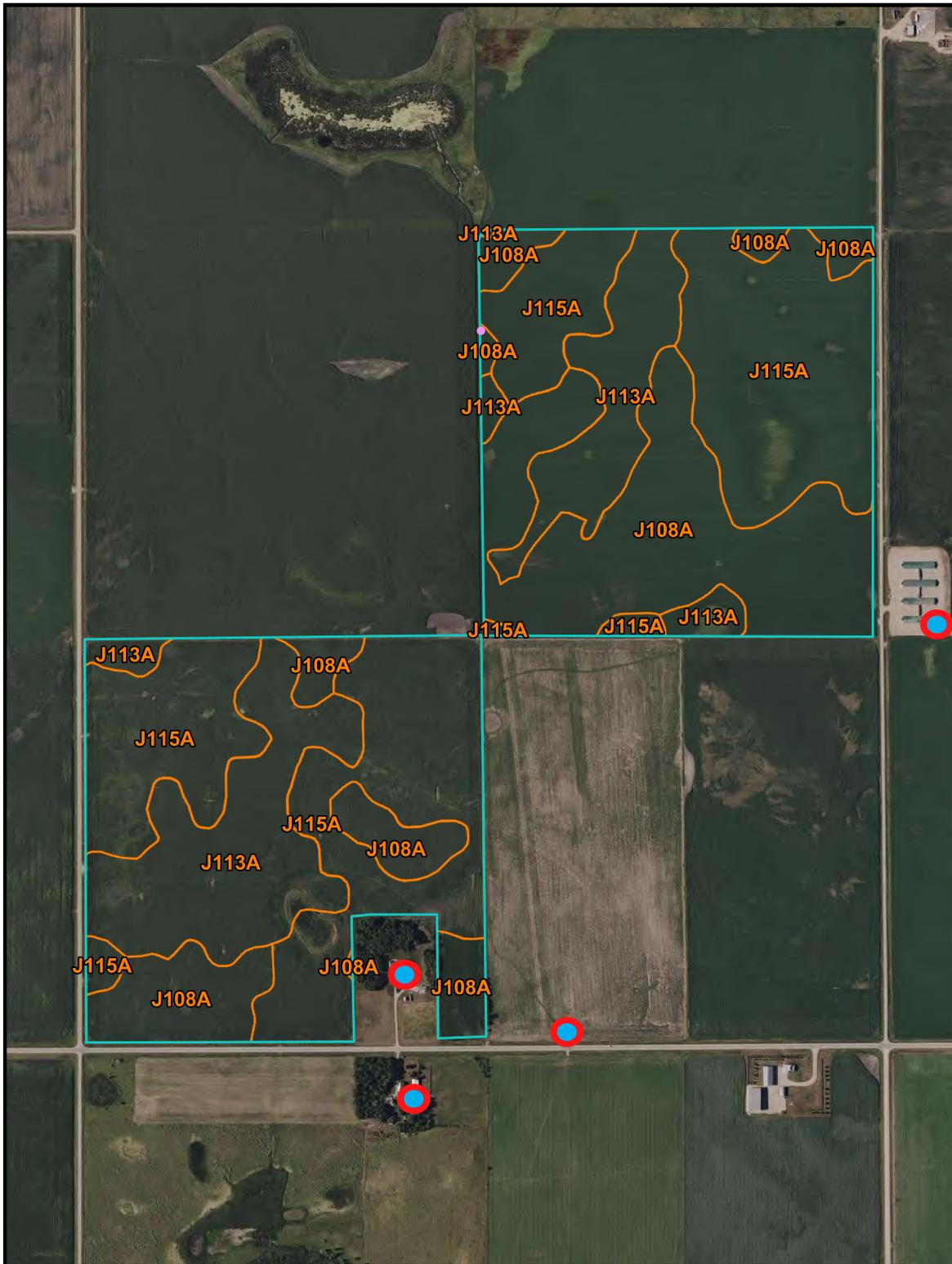
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- |||| Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	40.1	57.4%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	3.1	4.4%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	26.6	38.1%
<b>Totals for Area of Interest</b>		<b>69.9</b>	<b>100.0%</b>

Section 31 - T124N - R42W  
 Darnen Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



0 500 1000 2000 3000 Feet

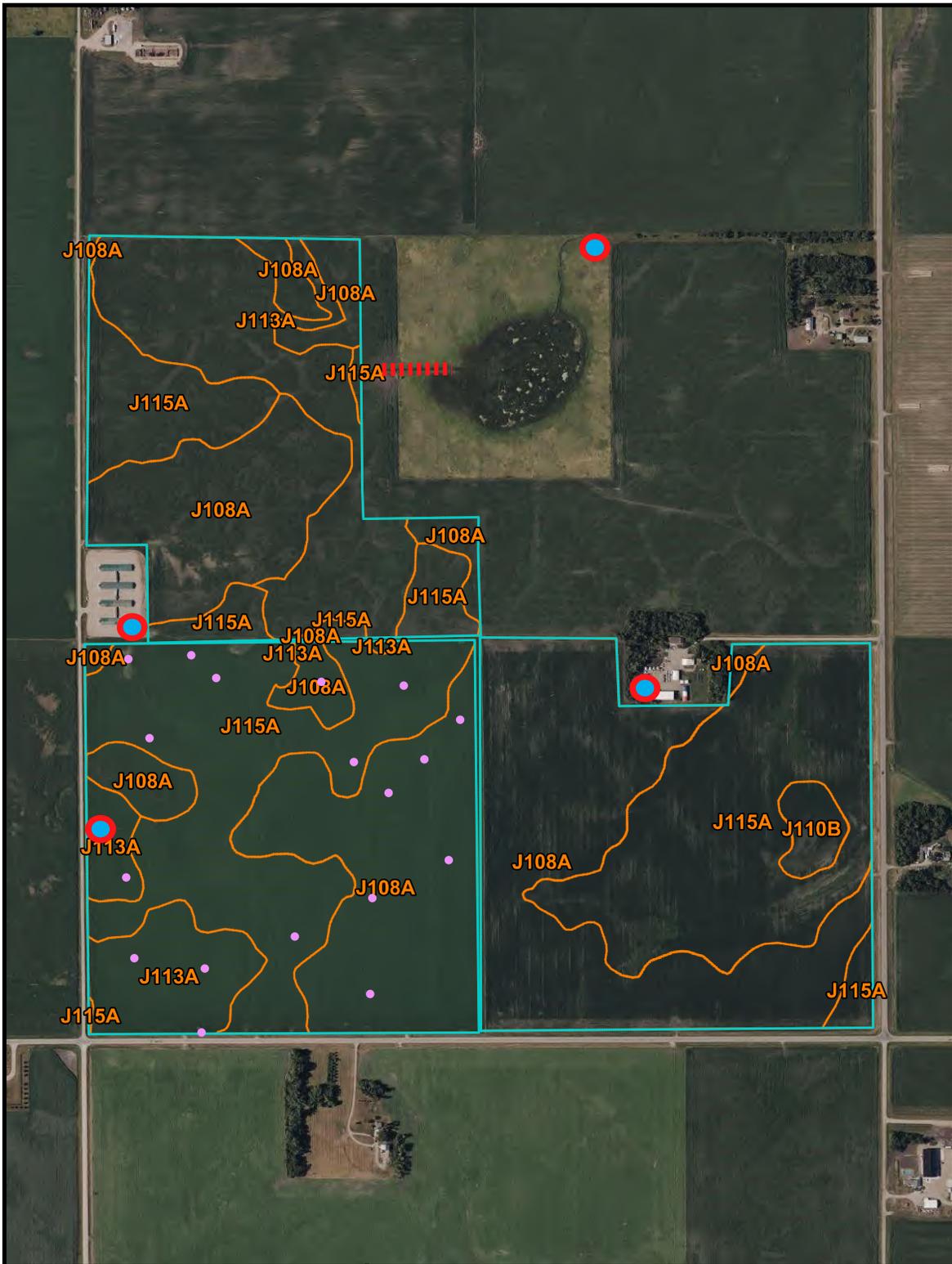
Map Scale: 1:12,100 if printed on A portrait (8.5" x 11") sheet.

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	95.0	31.8%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	68.3	22.8%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	135.8	45.4%
<b>Totals for Area of Interest</b>		<b>299.1</b>	<b>100.0%</b>

Section 32 - T124N - R42W  
 Darnen Township - Stevens County

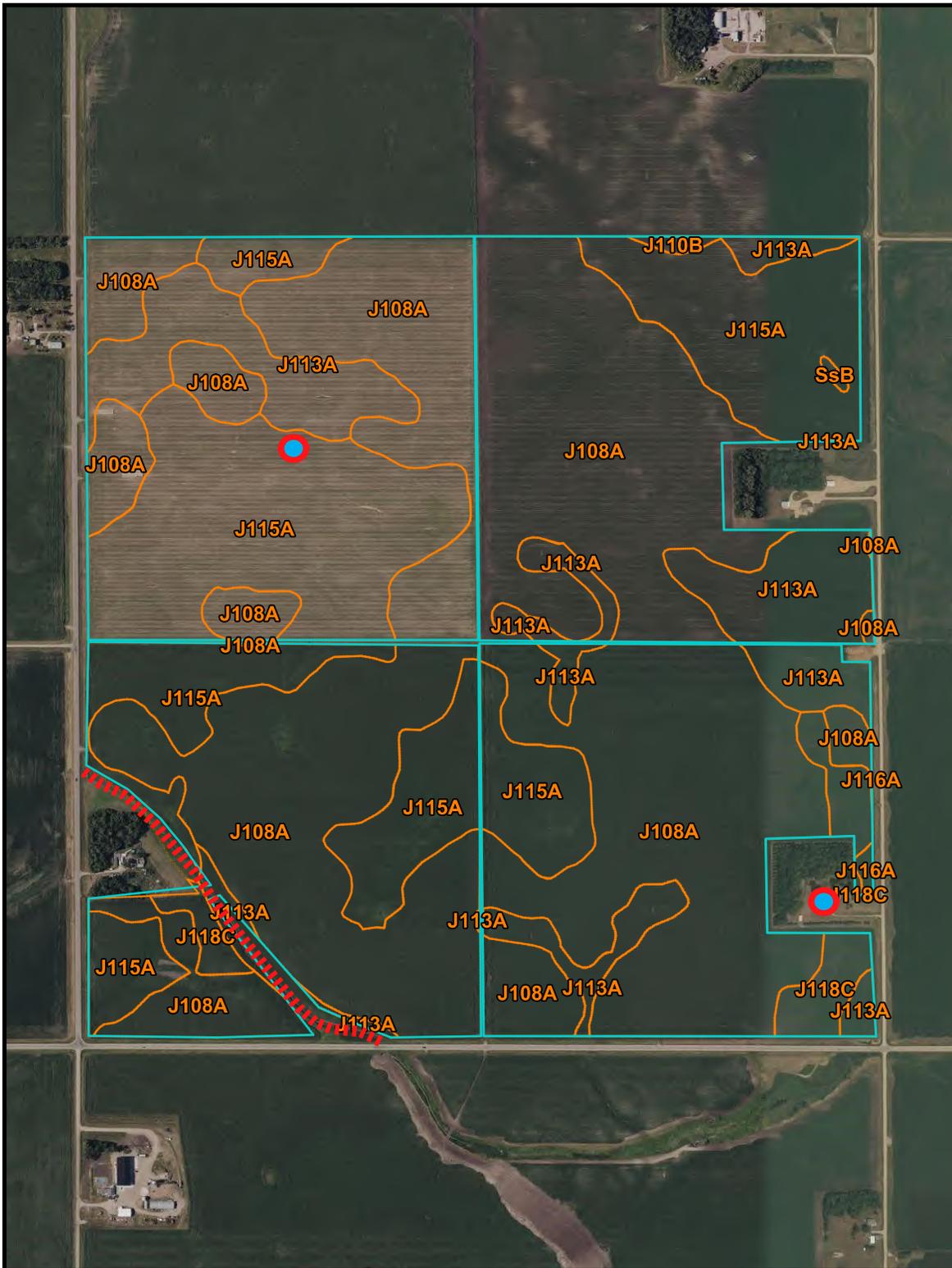


USDA Soils Map - Manure App. West River Dairy Expansion			
Map Scale: 1:12,200 if printed on A portrait (8.5" x 11") sheet.			
	Approximate Field Boundary	<b>ENVIRONMENTAL          SCIENTIFIC</b>	
	Soil Map Unit		
	MDH Identified Well & Buffer		
	Lake/Stream/Ditch Buffer		
	Tile Intake		

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	181.5	44.0%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	4.8	1.2%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	67.5	16.4%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	158.8	38.5%
<b>Totals for Area of Interest</b>		<b>412.6</b>	<b>100.0%</b>

Section 33 - T124N - R42W  
 Darnen Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



0 500 1000 2000 3000 Feet

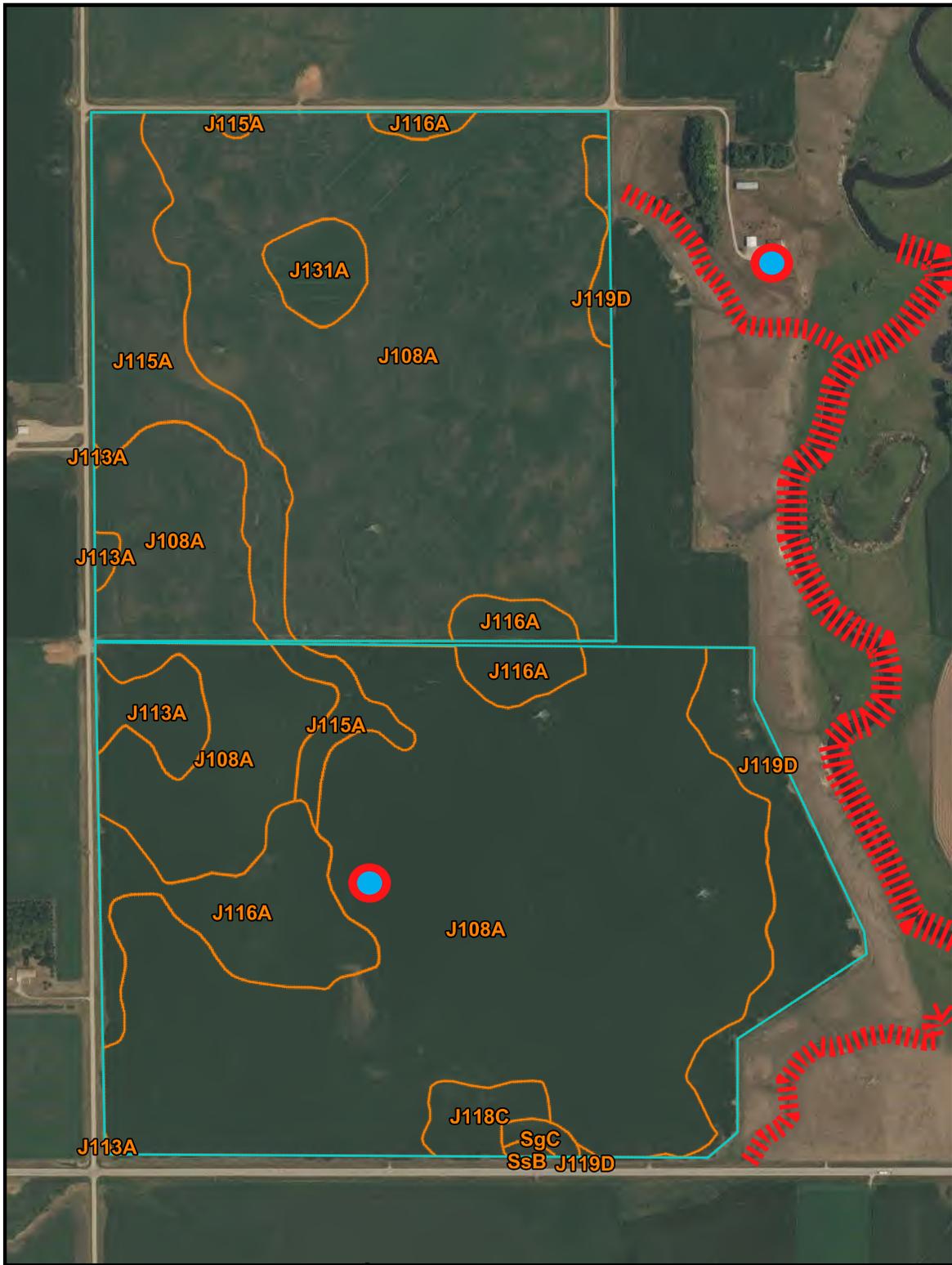
Map Scale: 1:12,200 if printed on A portrait (8.5" x 11") sheet.

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	335.3	57.9%
J110B	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes	5.7	1.0%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	66.4	11.5%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	161.3	27.9%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	0.7	0.1%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	9.2	1.6%
SsB	Sandberg sandy loam, 1 to 6 percent slopes	0.4	0.1%
<b>Totals for Area of Interest</b>		<b>579.0</b>	<b>100.0%</b>

Section 34 - T124N - R42W  
 Darnen Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



Map Scale: 1:9,280 if printed on A portrait (8.5" x 11") sheet.

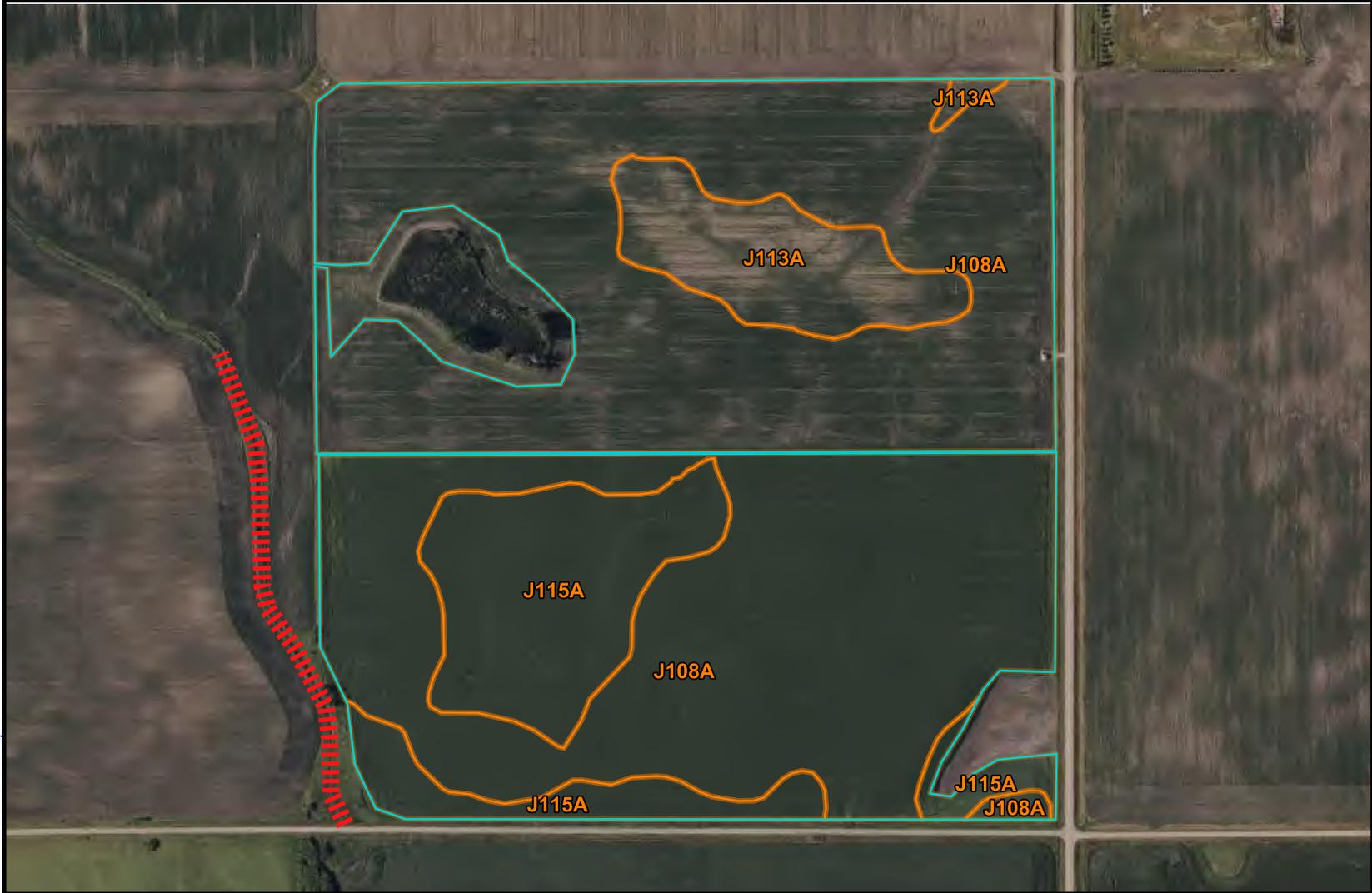
**ENVIRONMENTAL  
 SCIENTIFIC**

N

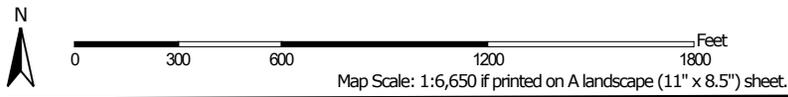
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	274.1	76.8%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	5.9	1.6%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	25.6	7.2%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	23.4	6.6%
J118C	Hokans-Svea-Buse complex, 2 to 12 percent slopes	4.0	1.1%
J119D	Barnes-Svea-Buse complex, 3 to 15 percent slopes	18.0	5.0%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	4.6	1.3%
SgC	Sandberg sandy loam, 2 to 12 percent slopes	1.1	0.3%
SsB	Sandberg sandy loam, 1 to 6 percent slopes	0.3	0.1%
<b>Totals for Area of Interest</b>		<b>357.0</b>	<b>100.0%</b>

Section 13 - T124N - R43W  
Scott Township - Stevens County



USDA Soils Map - Manure Application  
West River Dairy Expansion



-  Approximate Field Boundary
-  Soil Map Unit
-  MDH Identified Well & Buffer
-  Lake/Stream/Ditch Buffer
-  Tile Intake

**ENVIRONMENTAL  
SCIENTIFIC**

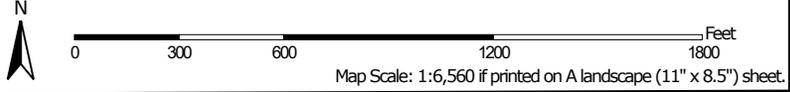
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	109.0	77.6%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	10.2	7.2%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	21.3	15.1%
<b>Totals for Area of Interest</b>		<b>140.4</b>	<b>100.0%</b>

Section 14 - T124N - R43W  
Scott Township - Stevens County



USDA Soils Map - Manure Application  
West River Dairy Expansion



-  Approximate Field Boundary
-  Soil Map Unit
-  MDH Identified Well & Buffer
-  Lake/Stream/Ditch Buffer
-  Tile Intake

**ENVIRONMENTAL  
SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	171.1	81.7%
J112B	Aazdahl-Quam-Lakepark complex, 0 to 4 percent slopes	4.6	2.2%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	22.4	10.7%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	6.1	2.9%
J130A	Quam and Cathro soils, 0 to 1 percent slopes, frequently ponded	5.3	2.5%
<b>Totals for Area of Interest</b>		<b>209.6</b>	<b>100.0%</b>

Section 15 - T124N - R43W  
Scott Township - Stevens County



USDA Soils Map - Manure Application  
West River Dairy Expansion



Map Scale: 1:3,320 if printed on A landscape (11" x 8.5") sheet.

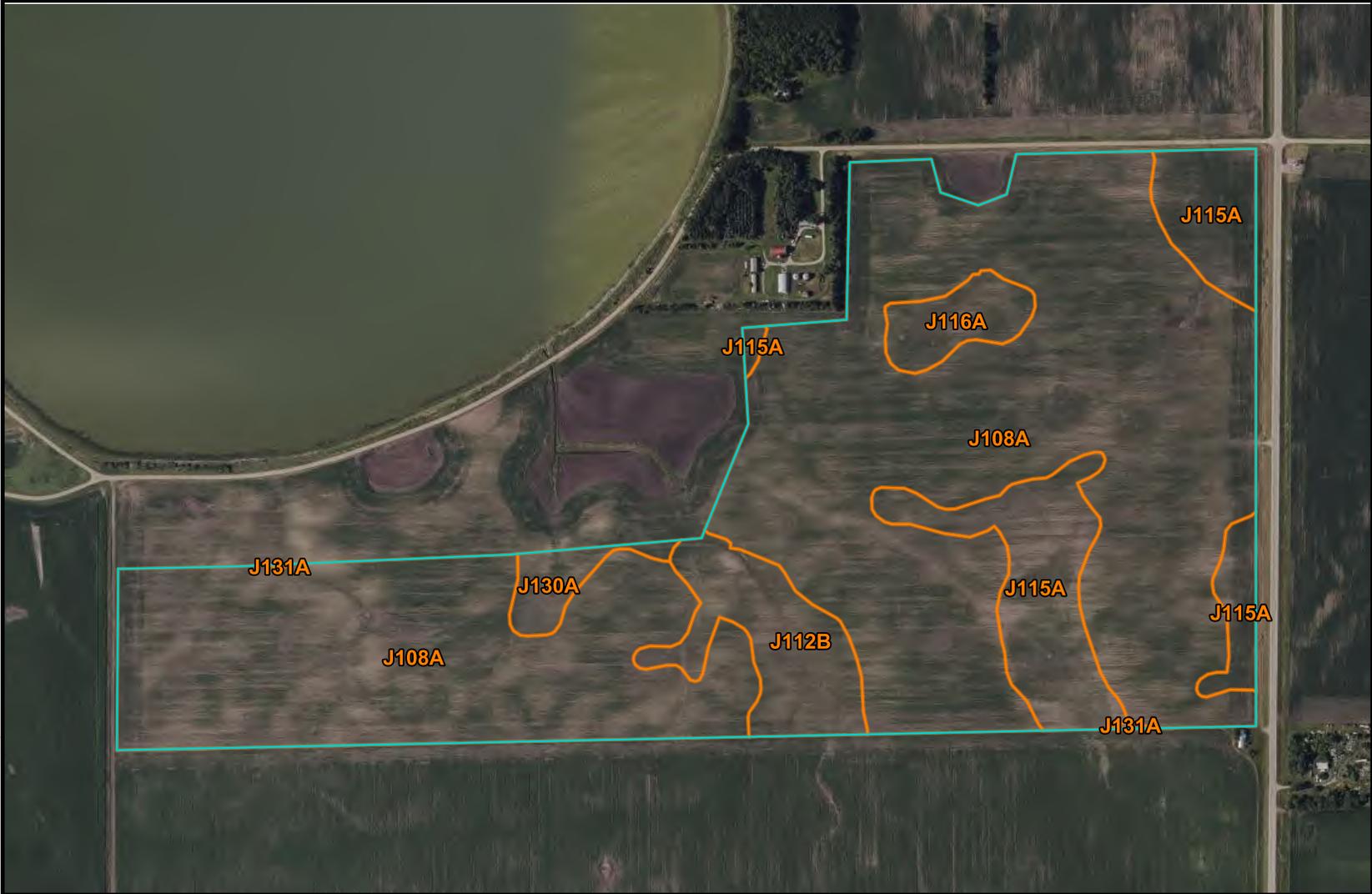
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▬▬▬▬ Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
SCIENTIFIC**

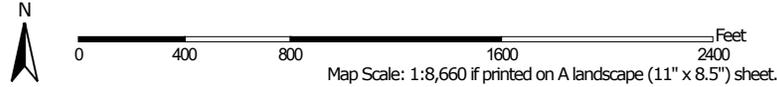
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	33.8	100.0%
<b>Totals for Area of Interest</b>		<b>33.8</b>	<b>100.0%</b>

Section 16 - T124N - R43W  
 Scott Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



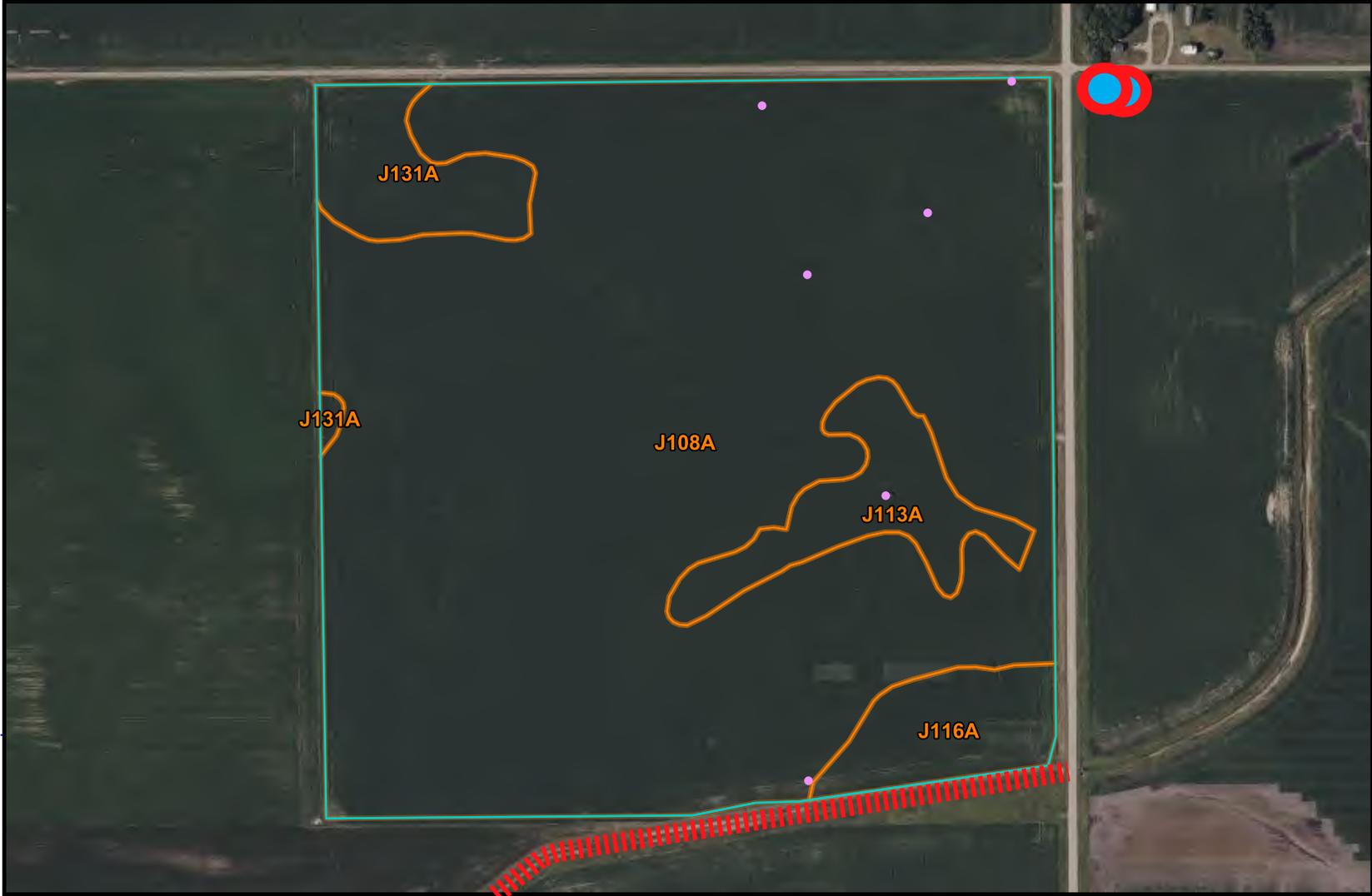
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- |||| Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

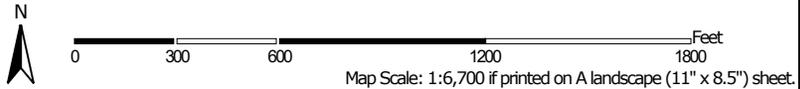
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	146.5	78.6%
J112B	Aazdahl-Quam-Lakepark complex, 0 to 4 percent slopes	10.8	5.8%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	21.7	11.7%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	4.3	2.3%
J130A	Quam and Cathro soils, 0 to 1 percent slopes, frequently ponded	2.9	1.6%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	0.1	0.1%
<b>Totals for Area of Interest</b>		<b>186.4</b>	<b>100.0%</b>

Section 18 - T124N - R43W  
Scott Township - Stevens County



USDA Soils Map - Manure Application  
West River Dairy Expansion



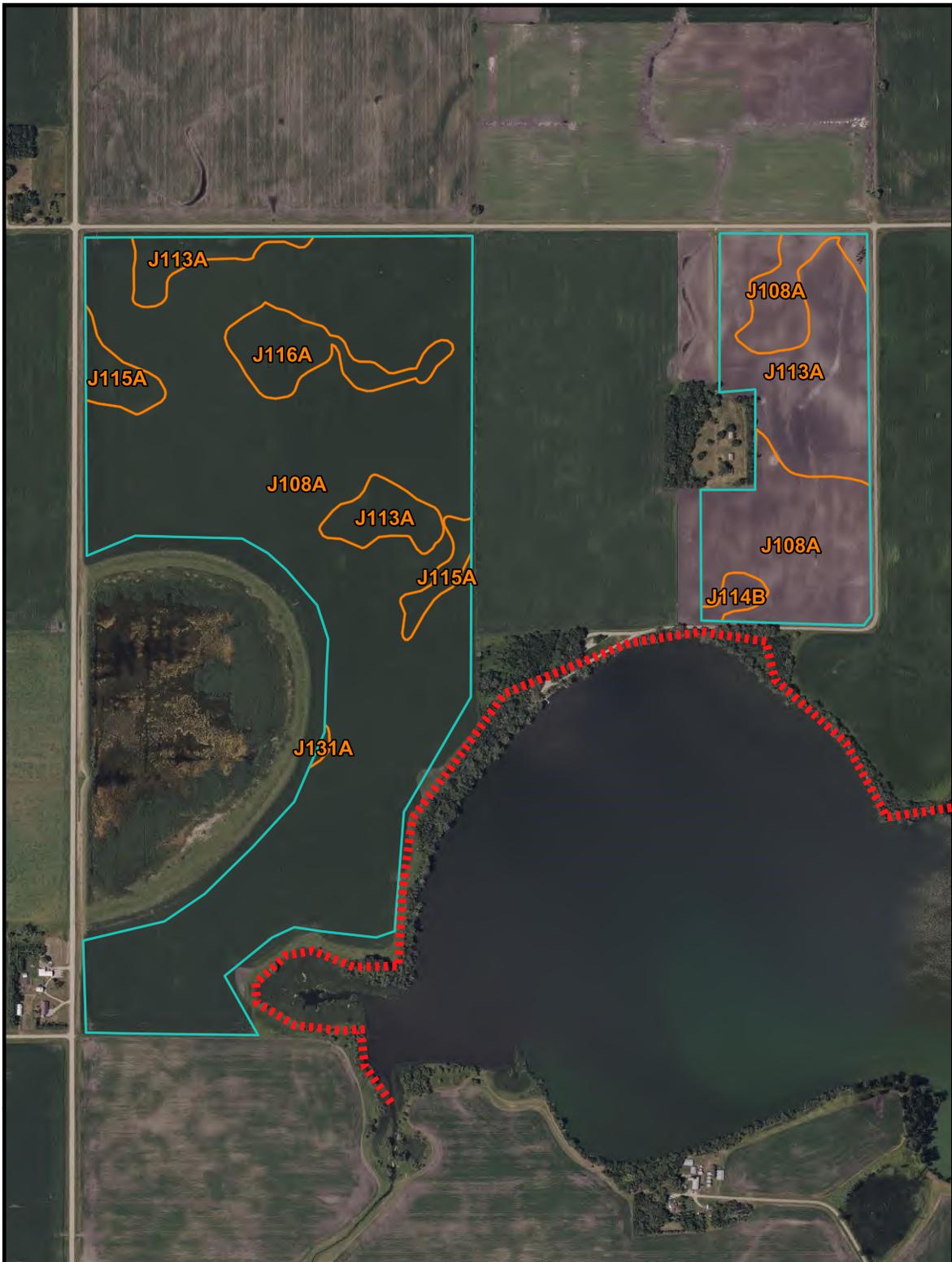
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
SCIENTIFIC**

## Map Unit Legend

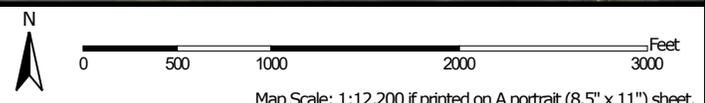
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	129.1	85.9%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	8.0	5.3%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	6.3	4.2%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	7.0	4.7%
<b>Totals for Area of Interest</b>		<b>150.3</b>	<b>100.0%</b>

Section 20 - T124N - R43W  
Scott Township - Stevens County



USDA Soils Map - Manure App.  
West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

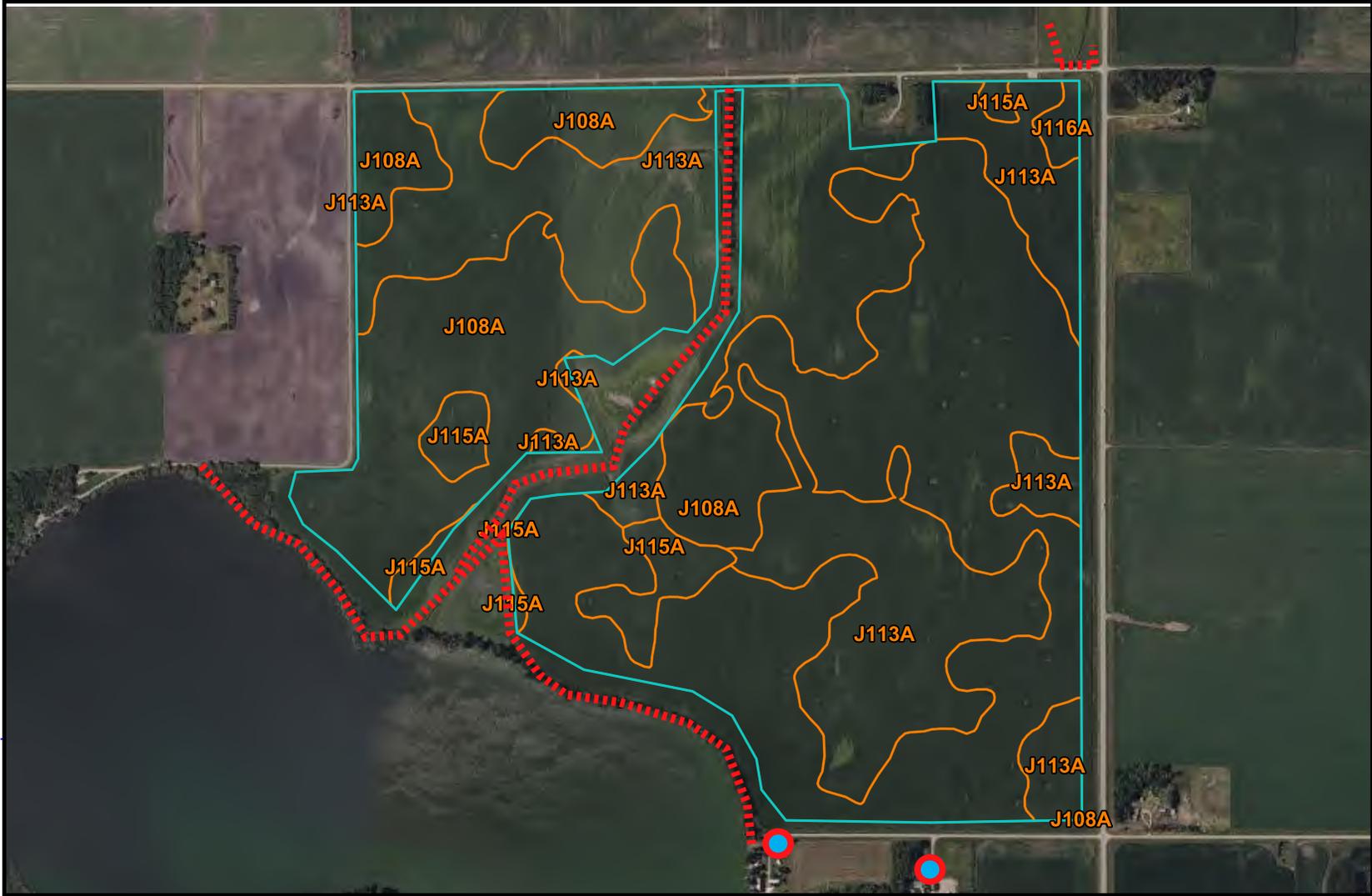


**ENVIRONMENTAL  
SCIENTIFIC**

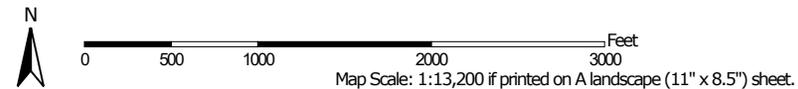
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	195.1	78.7%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	35.2	14.2%
J114B	Flom-Aazdahl-Quam complex, 0 to 4 percent slopes	1.8	0.7%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	6.5	2.6%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	8.9	3.6%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	0.3	0.1%
<b>Totals for Area of Interest</b>		<b>247.8</b>	<b>100.0%</b>

Section 21 - T124N - R43W  
 Scott Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



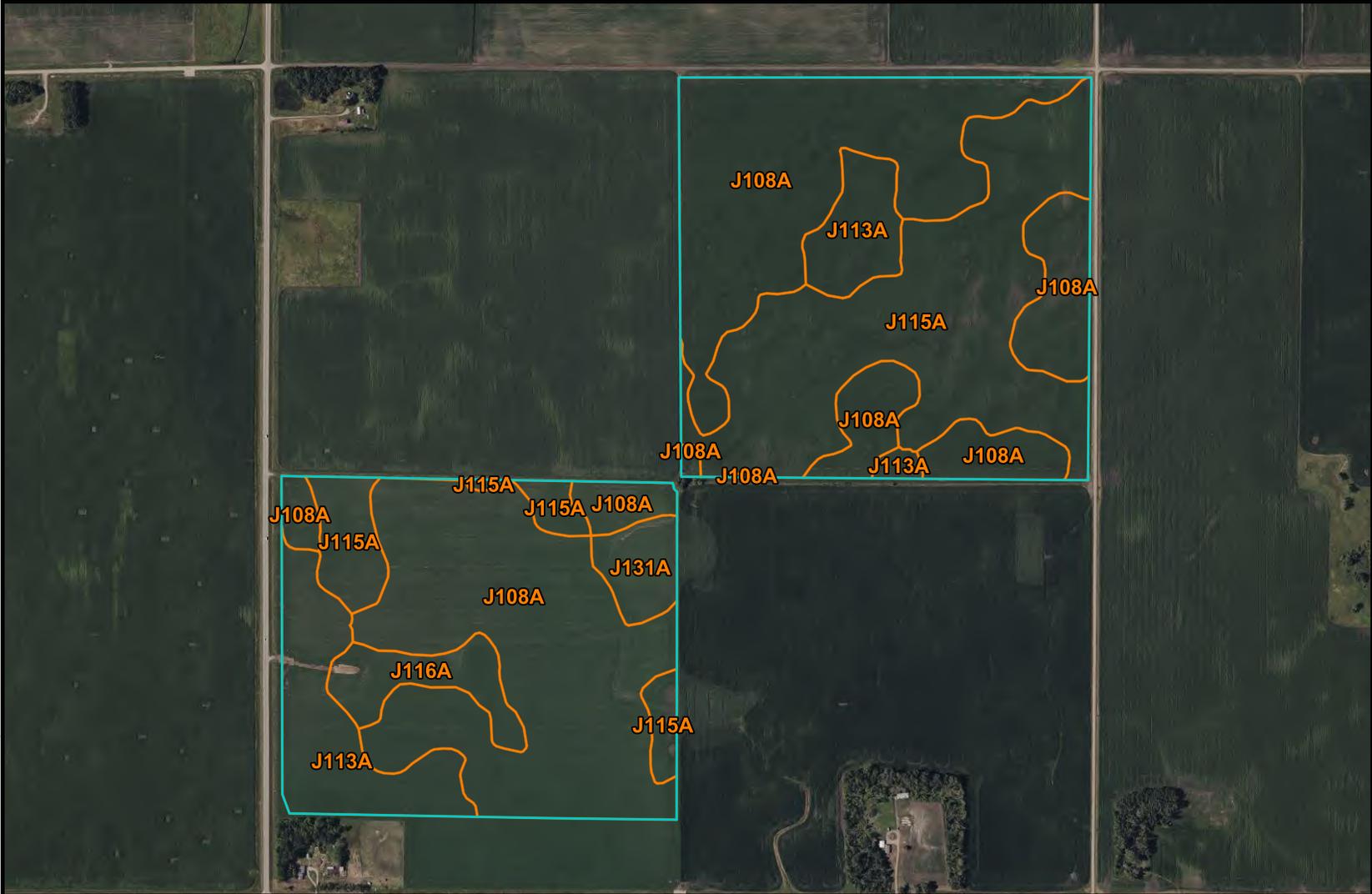
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	275.4	57.1%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	182.2	37.8%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	21.8	4.5%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	2.8	0.6%
<b>Totals for Area of Interest</b>		<b>482.3</b>	<b>100.0%</b>

Section 22 - T124N - R43W  
Scott Township - Stevens County



USDA Soils Map - Manure Application  
West River Dairy Expansion



0 500 1000 2000 3000 Feet

Map Scale: 1:12,300 if printed on A landscape (11" x 8.5") sheet.

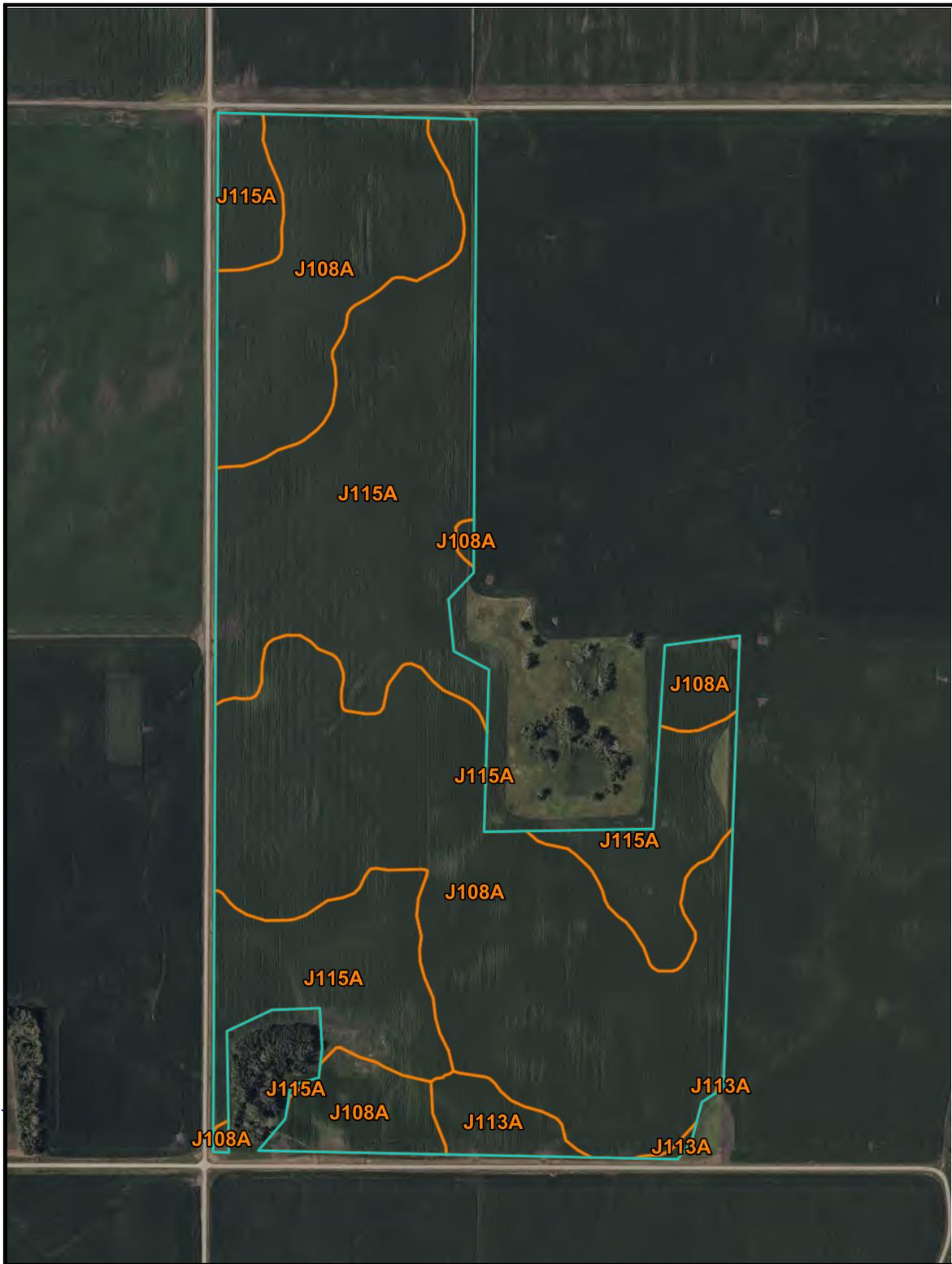
-  Approximate Field Boundary
-  Soil Map Unit
-  MDH Identified Well & Buffer
-  Lake/Stream/Ditch Buffer
-  Tile Intake

**ENVIRONMENTAL  
SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	154.0	54.7%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	31.8	11.3%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	79.8	28.3%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	9.5	3.4%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	6.6	2.3%
<b>Totals for Area of Interest</b>		<b>281.7</b>	<b>100.0%</b>

Section 23 - T124N - R43W  
Scott Township - Stevens County



USDA Soils Map - Manure App.  
West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

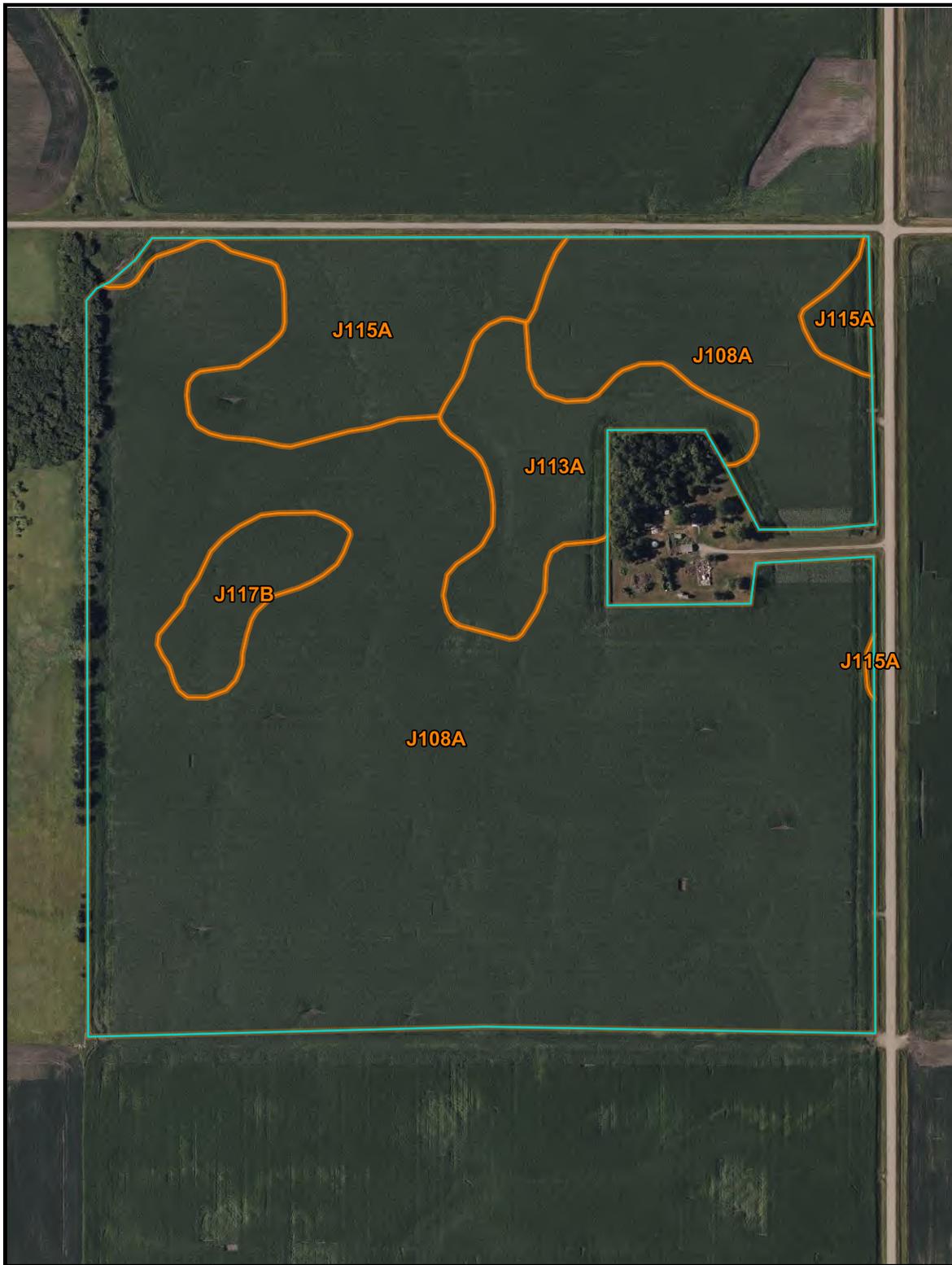


**ENVIRONMENTAL  
SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	114.9	56.1%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	5.1	2.5%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	84.7	41.4%
<b>Totals for Area of Interest</b>		<b>204.7</b>	<b>100.0%</b>

Section 24 - T124N - R43W  
Scott Township - Stevens County



USDA Soils Map - Manure App.  
West River Dairy Expansion

-  Approximate Field Boundary
-  Soil Map Unit
-  MDH Identified Well & Buffer
-  Lake/Stream/Ditch Buffer
-  Tile Intake



Map Scale: 1:6,060 if printed on A portrait (8.5" x 11") sheet.

**ENVIRONMENTAL  
SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	117.0	80.8%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	9.8	6.8%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	13.8	9.6%
J117B	Hokans-Svea complex, 2 to 6 percent slopes	4.2	2.9%
<b>Totals for Area of Interest</b>		<b>144.8</b>	<b>100.0%</b>

Section 28 - T124N - R43W  
Scott Township - Stevens County



USDA Soils Map - Manure App.  
West River Dairy Expansion

-  Approximate Field Boundary
-  Soil Map Unit
-  MDH Identified Well & Buffer
-  Lake/Stream/Ditch Buffer
-  Tile Intake



Map Scale: 1:2,940 if printed on A portrait (8.5" x 11") sheet.

**ENVIRONMENTAL  
SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	22.2	97.3%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	0.0	0.1%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	0.6	2.7%
<b>Totals for Area of Interest</b>		<b>22.9</b>	<b>100.0%</b>

Section 30 - T124N - R43W  
Scott Township - Stevens County



USDA Soils Map - Manure Application  
West River Dairy Expansion



Map Scale: 1:6,550 if printed on A landscape (11" x 8.5") sheet.

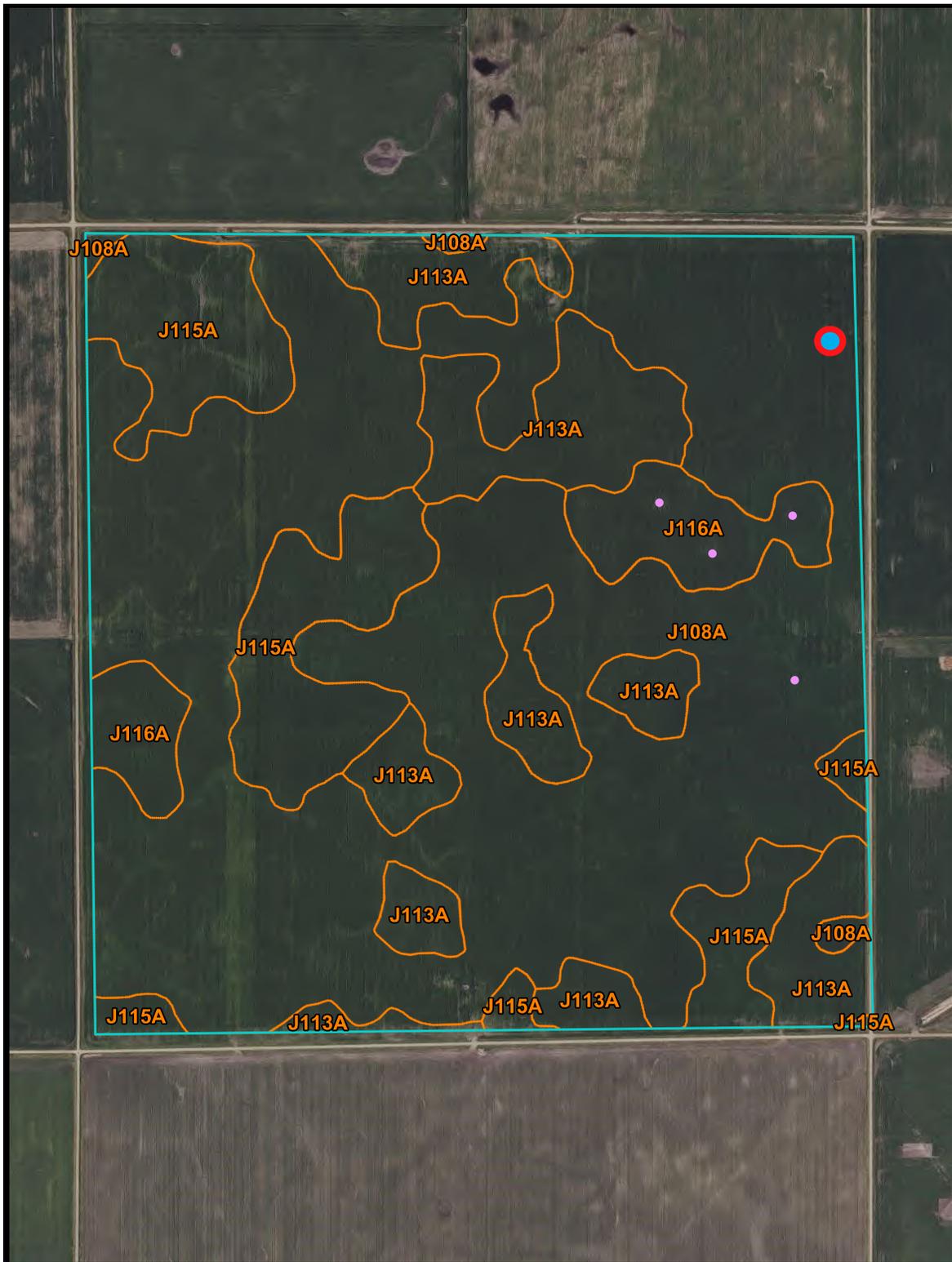
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	111.2	77.3%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	14.5	10.1%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	14.5	10.1%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	3.6	2.5%
<b>Totals for Area of Interest</b>		<b>143.9</b>	<b>100.0%</b>

Section 25 - T124N - R44W  
Baker Township - Stevens County



USDA Soils Map - Manure App.  
West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



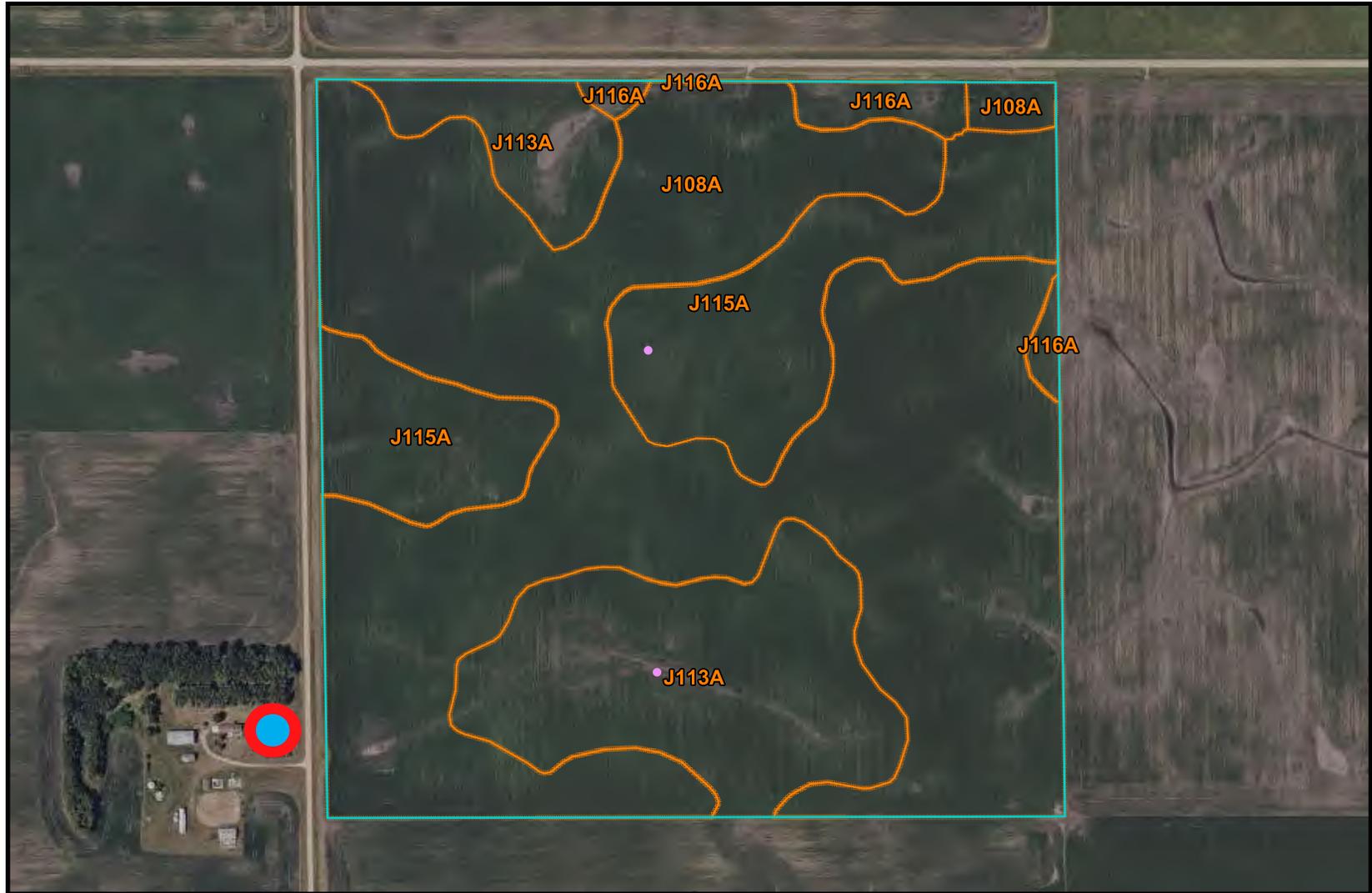
Map Scale: 1:12,200 if printed on A portrait (8.5" x 11") sheet.

**ENVIRONMENTAL  
SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	387.6	64.0%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	100.4	16.6%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	85.8	14.2%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	32.3	5.3%
<b>Totals for Area of Interest</b>		<b>606.0</b>	<b>100.0%</b>

Section 27 - T124N - R44W  
Baker Township - Stevens County



USDA Soils Map - Manure Application  
West River Dairy Expansion



Map Scale: 1:6,710 if printed on A landscape (11" x 8.5") sheet.

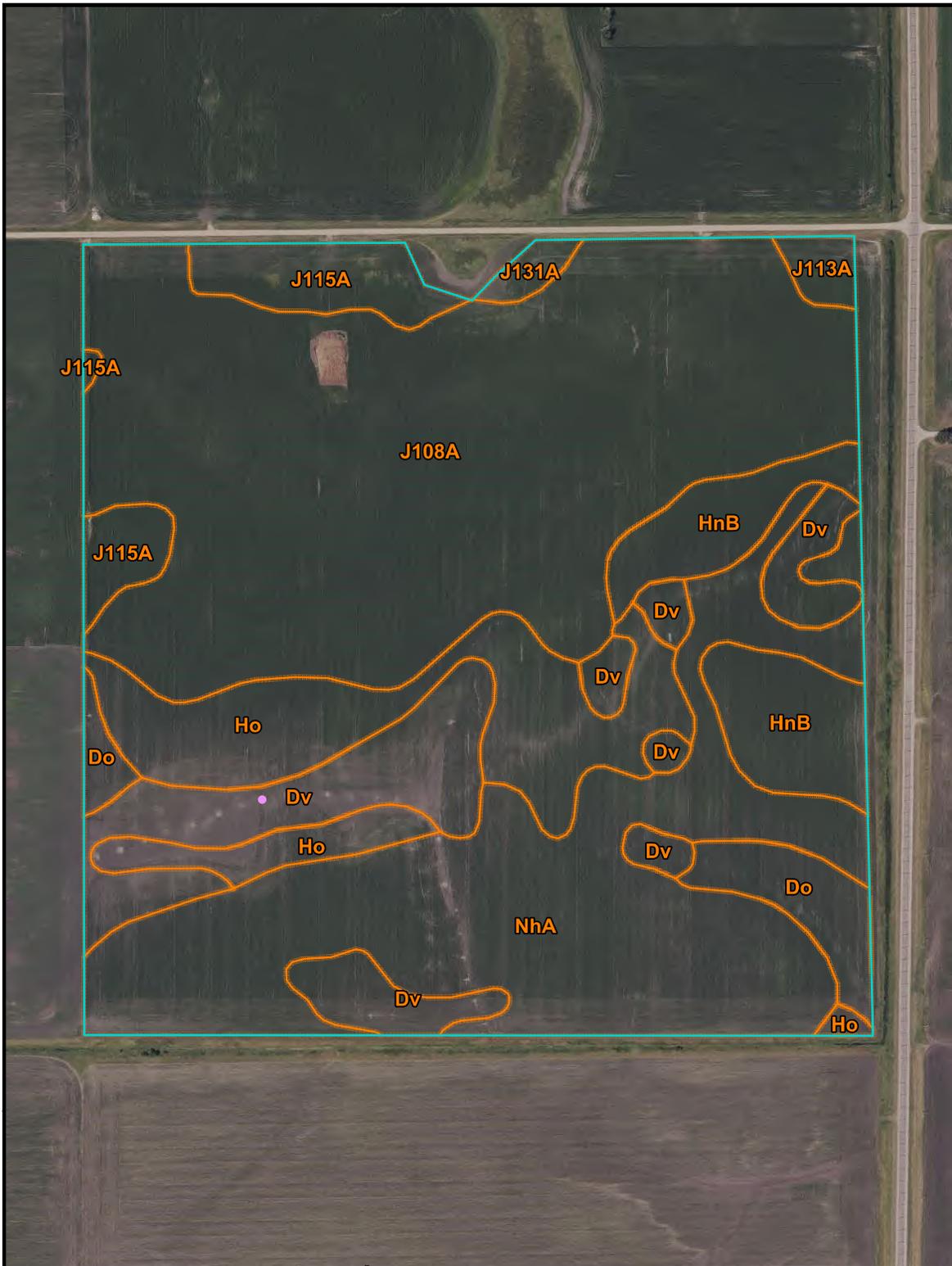
- |                            |                              |
|----------------------------|------------------------------|
| Approximate Field Boundary | MDH Identified Well & Buffer |
| Soil Map Unit              | Lake/Stream/Ditch Buffer     |
|                            | Tile Intake                  |

**ENVIRONMENTAL  
SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	96.1	61.7%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	29.9	19.2%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	26.2	16.8%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	3.5	2.3%
<b>Totals for Area of Interest</b>		<b>155.8</b>	<b>100.0%</b>

Section 34 - T124N - R44W  
 Baker Township - Stevens County



USDA Soils Map - Manure App.  
 West River Dairy Expansion



Map Scale: 1:6,080 if printed on A portrait (8.5" x 11") sheet.

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

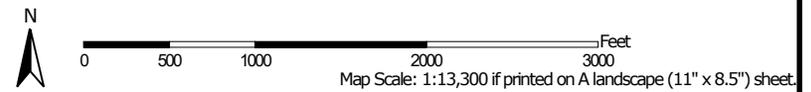
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	4.4	2.9%
Dv	Dovray clay, very poorly drained	15.8	10.5%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	8.9	5.9%
Ho	Hegne clay	16.2	10.8%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	60.3	40.2%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	1.1	0.7%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	5.8	3.9%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	0.8	0.6%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	36.6	24.4%
<b>Totals for Area of Interest</b>		<b>150.0</b>	<b>100.0%</b>

Section 35 - T124N - R44W  
 Baker Township - Stevens County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



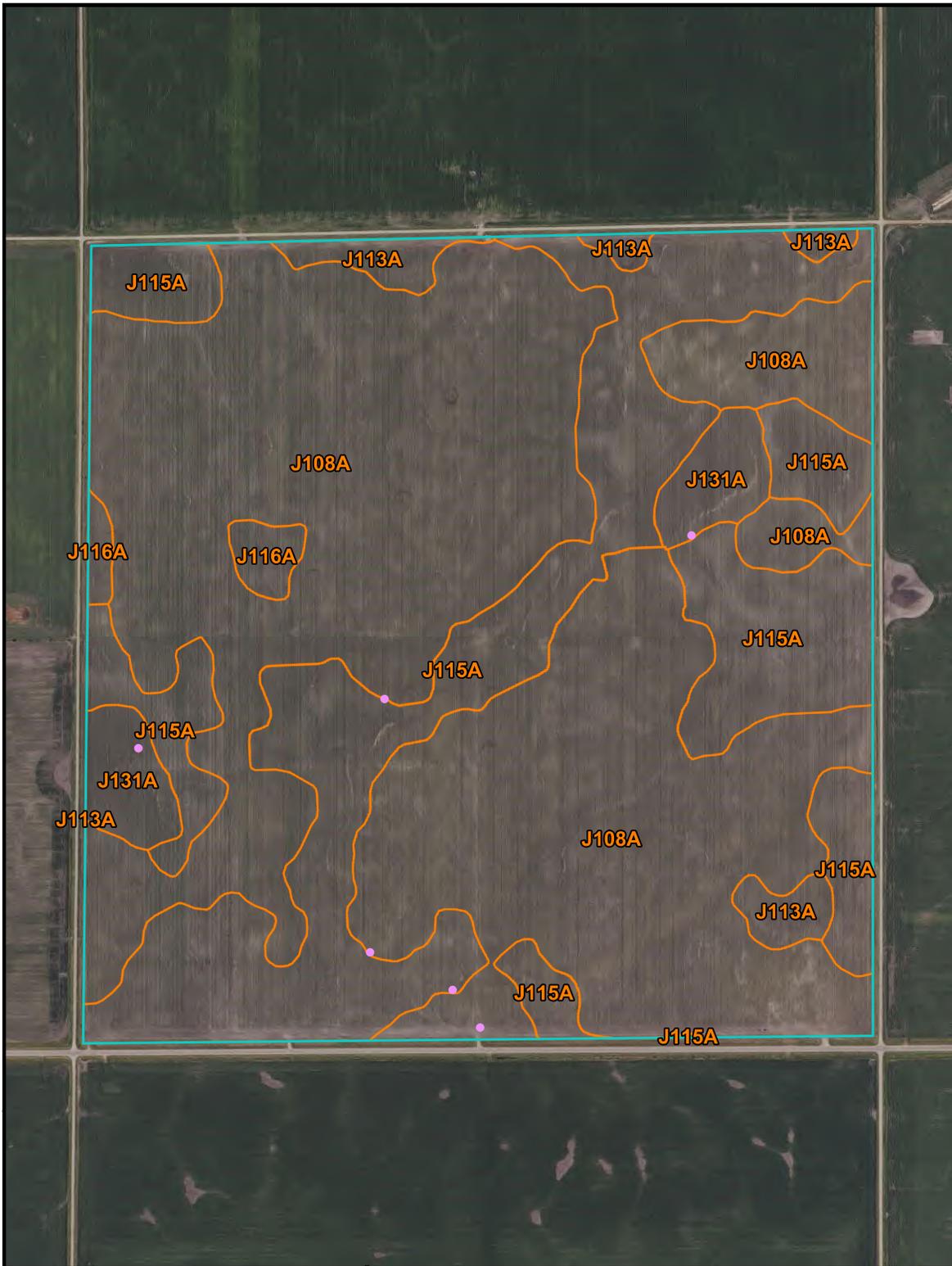
- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- |||| Lake/Stream/Ditch Buffer
- Tile Intake

**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Do	Dovray clay, poorly drained	17.7	5.9%
Dv	Dovray clay, very poorly drained	37.6	12.4%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	25.9	8.6%
Ho	Hegne clay	4.0	1.3%
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	143.8	47.6%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	3.8	1.2%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	14.3	4.7%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	5.3	1.7%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	49.6	16.4%
<b>Totals for Area of Interest</b>		<b>302.0</b>	<b>100.0%</b>

Section 36 - T124N - R44W  
Baker Township - Stevens County



USDA Soils Map - Manure App.  
West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake



**ENVIRONMENTAL  
SCIENTIFIC**

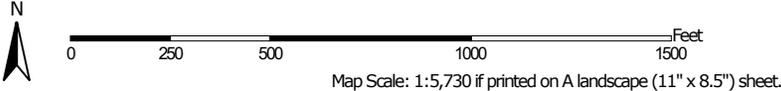
## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J108A	Aazdahl-Balaton clay loams, 0 to 2 percent slopes	380.6	62.3%
J113A	Flom-Aazdahl-Hamerly complex, 0 to 2 percent slopes	14.1	2.3%
J115A	Flom-Hamerly complex, 0 to 2 percent slopes	189.8	31.0%
J116A	Flom-Quam silty clay loams, 0 to 1 percent slopes, occasionally ponded	6.8	1.1%
J131A	Quam silty clay loam, 0 to 1 percent slopes, occasionally ponded	20.0	3.3%
<b>Totals for Area of Interest</b>		<b>611.3</b>	<b>100.0%</b>

Section 06 - T122N - R42W  
 Fairfield Township - Swift County



USDA Soils Map - Manure Application  
 West River Dairy Expansion



- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- Lake/Stream/Ditch Buffer
- Tile Intake

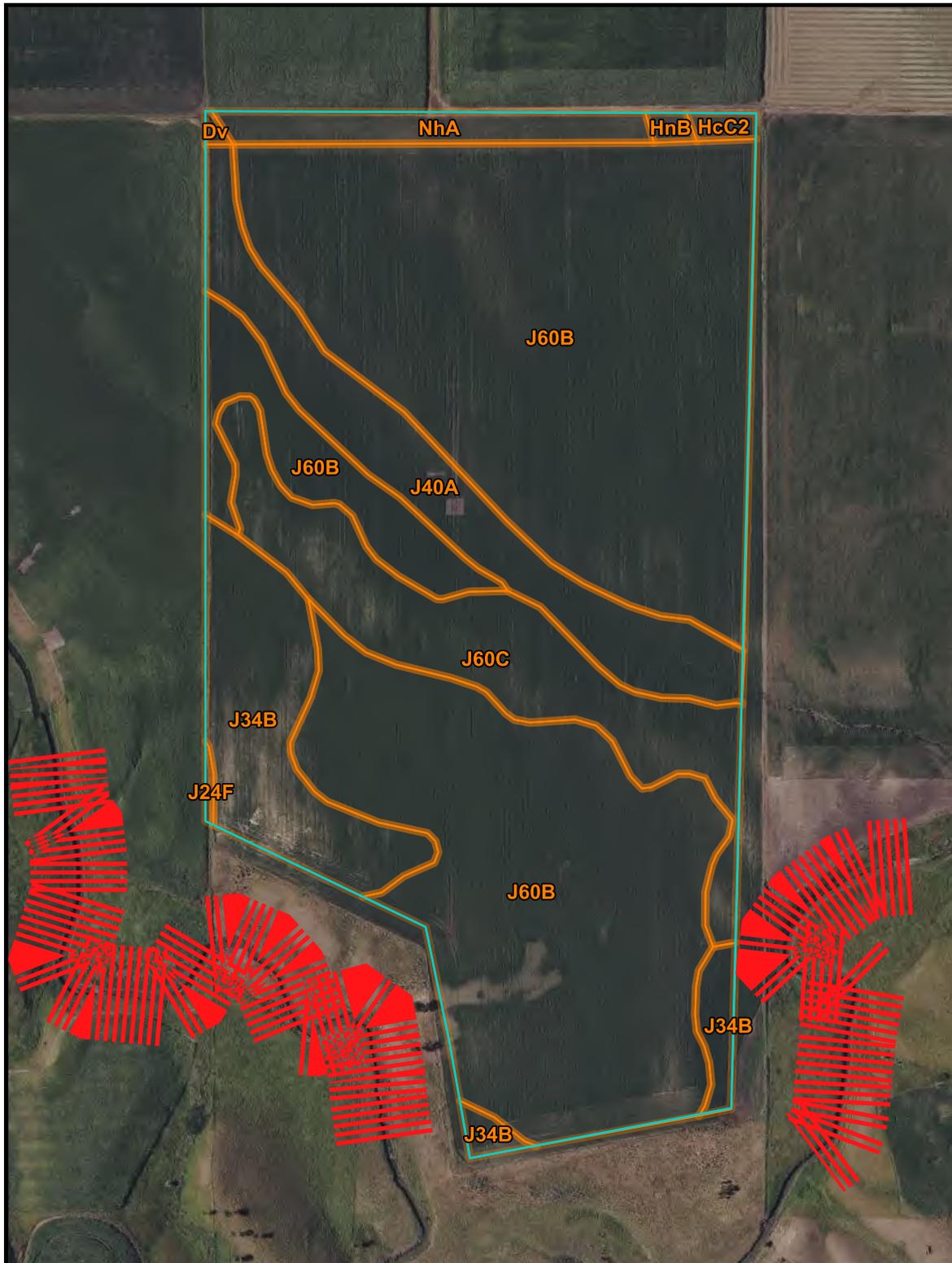
**ENVIRONMENTAL  
 SCIENTIFIC**

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	0.2	0.2%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	0.2	0.3%
<b>Subtotals for Soil Survey Area</b>		<b>0.4</b>	<b>0.5%</b>
<b>Totals for Area of Interest</b>		<b>85.9</b>	<b>100.0%</b>

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J1A	Parnell silty clay loam, occasionally ponded, 0 to 1 percent slopes	2.6	3.1%
J23A	Lamoure silty clay loam, 0 to 2 percent slopes, occasionally flooded	5.0	5.8%
J25A	Rauville silty clay loam, 0 to 2 percent slopes, frequently flooded	0.0	0.0%
J40A	Foxlake silty clay, 0 to 2 percent slopes	7.5	8.8%
J60B	Hattie-Audubon complex, 1 to 4 percent slopes	50.6	59.0%
J60C	Hattie-Audubon complex, 4 to 10 percent slopes	19.6	22.8%
<b>Subtotals for Soil Survey Area</b>		<b>85.4</b>	<b>99.5%</b>
<b>Totals for Area of Interest</b>		<b>85.9</b>	<b>100.0%</b>

Section 01 - T122N - R43W  
 Hegbert Township - Swift County



USDA Soils Map - Manure App.  
 West River Dairy Expansion

- Approximate Field Boundary
- Soil Map Unit
- MDH Identified Well & Buffer
- ▨▨▨▨ Lake/Stream/Ditch Buffer
- Tile Intake



Map Scale: 1:4,400 if printed on A portrait (8.5" x 11") sheet.

**ENVIRONMENTAL  
 SCIENTIFIC**



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Dv	Dovray clay, very poorly drained	0.1	0.1%
HcC2	Hattie clay, 6 to 12 percent slopes, eroded	0.2	0.3%
HnB	Hattie-Nutley clays, 2 to 6 percent slopes	0.2	0.2%
NhA	Nutley-Hattie clays, 0 to 2 percent slopes	1.7	2.7%
<b>Subtotals for Soil Survey Area</b>		<b>2.2</b>	<b>3.4%</b>
<b>Totals for Area of Interest</b>		<b>64.1</b>	<b>100.0%</b>

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
J24F	Langhei loam, 12 to 40 percent slopes	0.1	0.1%
J34B	Byrne-Buse complex, 2 to 6 percent slopes	6.2	9.7%
J40A	Foxlake silty clay, 0 to 2 percent slopes	5.8	9.0%
J60B	Hattie-Audubon complex, 1 to 4 percent slopes	42.6	66.5%
J60C	Hattie-Audubon complex, 4 to 10 percent slopes	7.2	11.2%
<b>Subtotals for Soil Survey Area</b>		<b>61.9</b>	<b>96.6%</b>
<b>Totals for Area of Interest</b>		<b>64.1</b>	<b>100.0%</b>

# Attachment 11

DNR Water Appropriation Permits



Minnesota Department of Natural Resources  
500 Lafayette Rd Box 25  
St. Paul, MN 55155

April 2, 2025

Ben Hernandez  
Riverview, LLP  
26406 470<sup>th</sup> Ave.  
Morris, MN 56267

Dear Ben,

The Minnesota Department of Natural Resources (DNR) has reviewed the preliminary information associated with your desire to obtain a water appropriation permit authorizing the water use from well Unique ID 740629 (which is currently permitted to APEC, LLC(APEC)). It is DNR's understanding that you intend to submit a water appropriation application to support a potential expansion of the West River Dairy. This letter does not constitute an approval of water use for the West River Dairy expansion, but rather it describes DNR's findings regarding the need for an aquifer test in association with well 740629.

As described in the groundwater technical review dated January 13, 2025 (Rose, 2025), an aquifer test will **not** be required as part of an application for a water appropriation permit to use well 740629 for the proposed appropriation so long as the following are correct:

- Pumping will occur from only well Unique ID 740629;
- No more than 226 million gallons per year is to be used from the well at a rate not to exceed 1,000 gallons per minute; and
- Pumping is subject to restrictions, up to and including cessation of pumping, dependent on flow conditions in the Pomme de Terre River. Any restrictions on a permit issued to Riverview Dairy may be modified in future depending on the results of an updated flow study in the Pomme de Terre.

The list above only describes prerequisites that must be met to waive the aquifer test requirement associated with well 740629 and does not address any potential aquifer test(s) that may be required for any proposed new wells. Once DNR receives an application for a permit, we will determine whether any additional permit conditions are necessary based on the specifics of the proposal. We will discuss any potential conditions with you prior to making a final decision.

Sincerely,

Katie Smith Digitally signed  
by Katie Smith  
Date: 2025.04.02  
12:19:09 -05'00'

Katie Smith  
Director, Ecological and Water Resources Division

CC: Jess Richards, DNR  
Melissa Kuskie, DNR  
Erik Anthonisen, DNR  
Joshua Prososki, DNR  
Nathan Kestner, DNR  
Dana Vanderbosch, MPCA  
Chuck Peterson, MPCA  
Dan Card, MPCA  
Brian Timerson, MPCA

*Equal Opportunity Employer*



26406 470<sup>th</sup> Avenue,  
Morris, MN 56267  
(320) 392-5609

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May 2, 2025

Minnesota Department of Natural Resources  
1509 First Ave N  
Fergus Falls, MN 56537

**Re: West River Dairy Expansion**

Please find enclosed a permit application for a new permit to authorize the appropriation and use of water for Riverview's proposed West River Dairy expansion.

As discussed in prior meetings between Riverview and DNR, a pre-existing Water Appropriation Permit currently exists in connection with Installation #1 (Permit Number 2008-0230) (the "Existing Permit").

We submit the enclosed application with the understanding that this new application will not be deemed to waive in any way any legal or equitable rights or remedies that Riverview has under the Existing Permit.

Riverview disputes the DNR's legal authority to terminate the Existing Permit and is in no way agreeing to or acquiescing in any such termination with the submission of this permit application.

Our understanding is that the DNR will temporarily maintain the status quo with respect to the Existing Permit to allow Riverview to submit this application for a new water appropriation permit and for the DNR to review it and act upon it.

Thank you,

Riverview, LLP

**MINNESOTA DEPARTMENT OF HEALTH**  
**WELL AND BORING RECORD**  
*Minnesota Statutes, Chapter 1031*

740629

WELL/BORING LOCATION  
 County Name **Stevens**

Township Name **Horton**    Township No. **123N**    Range No. **42W**    Section No. **17**    Fraction **SW 1/4 SE SE 1/4**

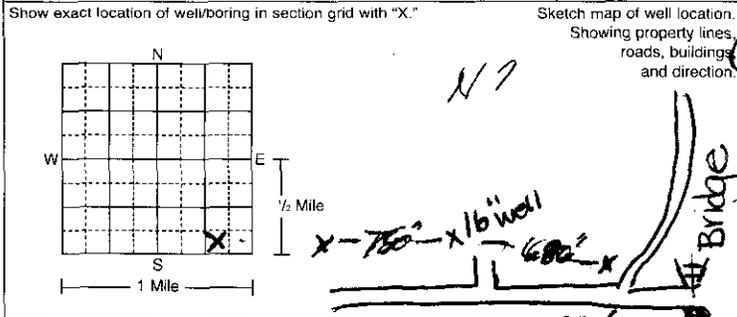
WELL/BORING DEPTH (completed) **54** ft.    DATE WORK COMPLETED **3/8/07**

GPS LOCATION: Latitude \_\_\_\_\_ degrees \_\_\_\_\_ minutes \_\_\_\_\_ seconds  
 Longitude \_\_\_\_\_ degrees \_\_\_\_\_ minutes \_\_\_\_\_ seconds

DRILLING METHOD  
 Cable Tool     Driven     Dug  
 Auger     Rotary     Jetted

House Number, Street Name, City, and Zip Code of Well Location or Fire Number  
**Co Rd 58 & 500th AVE, Morris MN**

DRILLING FLUID **Bentonite**    WELL HYDROFRACTURED?  Yes  No



USE  Domestic     Monitoring     Heating/Cooling  
 Noncommunity PWS     Environ. Bore Hole     Industry/Commercial  
 Community PWS     Irrigation     Remedial  
 Elevator     Dewatering

CASING MATERIAL    Drive Shoe?  Yes  No    HOLE DIAM.  
 Steel     Threaded     Welded  
 Plastic

CASING Diameter **16** in. to **38** ft.    Weight \_\_\_\_\_ lbs./ft.    Specifications \_\_\_\_\_  
**22** in. to **54** ft.

PROPERTY OWNER'S NAME/COMPANY NAME  
**Dennis Wulf**

SCREEN Make **Johnson**    OPEN HOLE From \_\_\_\_\_ ft. To \_\_\_\_\_ ft.

Property owner's mailing address if different than well location address indicated above.  
**45594 325th ST  
 Hancock MN 56224**

Type **stainless steel**    Diam. **16" IPS**  
 Slot/Gauze **100**    Length **16**  
 Set between **38** ft. and **54** ft.    FITTINGS **Inline**

STATIC WATER LEVEL **12' 4"** ft.  Below  Above land surface    Date measured **3-14-07**

WELL/BORING OWNER'S NAME/COMPANY NAME  
**APEC**

PUMPING LEVEL (below land surface) **18' 8 3/4"** ft. after **2** hrs. pumping **1062.92** g.p.m.

Well/boring owner's mailing address if different than property owner's address indicated above.  
**227 So Co Rd 22  
 Morris MN 56267**

WELL HEAD COMPLETION  
 Pileless Adapter Manufacturer \_\_\_\_\_ Model \_\_\_\_\_  
 Casing Protection \_\_\_\_\_  12 in. above grade  
 At-grade (Environmental Well and Boring ONLY)

GROUTING INFORMATION  
 Well grouted?  Yes  No  
 Grout materials  Neat cement  Bentonite  Concrete  Other \_\_\_\_\_  
**Quick Grout** From **0** To **28** ft. **32** Yds.  Bags  
**Red Flint** From **28** To **54** ft. **40** Yds.  Bags

GEOLOGICAL MATERIALS	COLOR	HARDNESS OF MATERIAL	FROM	TO
loam	blk	M	0	2
clay	tan	M	2	6
sand	tan	coarse	6	28
sand	blk/blu	coarse	28	54
rock	white	M	54	56

NEAREST KNOWN SOURCE OF CONTAMINATION  
 \_\_\_\_\_ feet \_\_\_\_\_ direction \_\_\_\_\_ type  
 Well disinfected upon completion?  Yes  No

PUMP  Not installed    Date installed \_\_\_\_\_  
 Manufacturer's name \_\_\_\_\_  
 Model Number \_\_\_\_\_ HP \_\_\_\_\_ Volts \_\_\_\_\_  
 Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ g.p.m.  
 Type  Submersible  L.S. Turbine  Reciprocating  Jet

ABANDONED WELLS  
 Does property have any not in use and not sealed well(s)?  Yes  No

VARIANCE  
 Was a variance granted from the MDH for this well?  Yes  No    TN# \_\_\_\_\_

WELL CONTRACTOR CERTIFICATION  
 This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

REMARKS, ELEVATION, SOURCE OF DATA, etc.  
 Use a second sheet, if needed.



**Steffl Drilling & Pump**    1551  
 Licensee Business Name    Lic. or Reg. No.  
 Authorized Representative Signature *Mark Steffl*    Date **3/14/07**

MINN. DEPT OF HEALTH COPY    740629

Name of Driller **John G Dahl**    3/12/07



MINNESOTA DEPARTMENT OF NATURAL RESOURCES

Amended  
Water Appropriation Permit

**Permit Number**  
**2008-0230**

Pursuant to Minnesota Statutes, Chapter 103G, and on the basis of statements and information contained in the permit application, letters, maps, and plans submitted by the applicant and other supporting data, all of which are made part hereof by reference, **PERMISSION IS HEREBY GRANTED** to the applicant to perform actions as authorized below. This permit supersedes the original permit and all previous amendments.

<b>Project Name:</b> N/A	<b>County:</b> Stevens	<b>Watershed:</b> Pomme de Terre River	<b>Resource:</b> Groundwater	
<b>Purpose of Permit:</b> Petroleum-Chemical Processing/Ethanol, Livestock Watering		<b>Authorized Action:</b> Withdrawal of up to 226.0 million gallons of water per year for petroleum-chemical processing/ethanol and withdrawal of up to 226.0 million gallons of water per year for livestock watering.		
<b>Permittee:</b> APEC, LLC CONTACT: MILLER, MICK, (320) 585-7901 227 S. CO RD 22 MORRIS, MN 56267 (320) 585-7904		<b>Authorized Agent:</b> ANTHONY EKREN 26406 470TH AVE MORRIS, MN 56267 (320) 392-6742 anthony.ekren@riverviewllp.com		
<b>To Appropriate From:</b> Well: 16.0 inches diameter, 54.0 feet depth, 1000 gpm, unique number 740629 Point(s) of Taking UTM zone 15N, 268634m east, 5037879m north SWSE of Section 17, T123N, R42W				
<b>Authorized Issuer:</b> Emily Siira	<b>Title:</b> Area Hydrologist	<b>Issued Date:</b> 06/03/2014	<b>Effective Date:</b> 06/03/2014	<b>Expiration Date:</b> Long-Term Appropriation

This permit is granted **subject to** the following **CONDITIONS**:

**LIMITATIONS:** (a) Any violation of the terms and provisions of this permit and any appropriation of the waters of the state in excess of that authorized hereon shall constitute a violation of Minnesota Statutes, Chapter 103G. (b) This permit shall not be construed as establishing any priority of appropriation of waters of the state. (c) This permit is permissive only. No liability shall be imposed upon or incurred by the State of Minnesota or any of its employees, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the Permittee relating to any matter hereunder. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the Permittee, for any damage or injury resulting from any such act or omission, or as estopping or limiting any legal claim or right of action of the state against the Permittee, for violation of or failure to comply with the provisions of the permit or applicable provisions of law. (d) In all cases where the doing by the Permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the Permittee, before proceeding therewith, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights, and interests necessary therefore. (e) This permit shall not release the Permittee from any other permit requirements or liability or obligation imposed by Minnesota Statutes, Federal Law, or local ordinances relating thereto and shall remain in force subject to all conditions and limitations now or hereafter imposed by law. (f) Unless explicitly specified, this permit does not authorize any alterations of the beds or banks of any public (protected) waters or wetlands. A separate permit must be obtained from the Department of Natural Resources prior to any such alteration.

**WATER USE REPORTING:** (a) FLOW METER The Permittee shall equip each installation for appropriating or using water

## **CONDITIONS** *(Continued from previous page)*

with a flow meter, unless another method of measuring the quantity of water appropriated to within ten (10) percent of actual amount withdrawn is approved by the Department. (b) **REPORTS** Monthly records of the amount of water appropriated or used shall be recorded for each installation. Such readings and the total amount of water appropriated or used shall be reported annually to the Director of DNR Ecological and Water Resources, on or before February 15 of the following year, via the MNDNR Permitting and Reporting System (MPARS) at [www.mndnr.gov/mpars/signin](http://www.mndnr.gov/mpars/signin). Any processing fee required by law or rule shall be submitted with the records whether or not any water was appropriated during the year. Failure to report shall be sufficient cause for terminating the permit 30 days following written notice. (c) **TRANSFER OR ASSIGNMENT** Any transfer or assignment of rights, or sale of property involved hereunder shall be reported within 90 days thereafter to the Director of DNR Ecological and Water Resources. Such notice shall be made by the transferee (i.e., new owner) and shall state the intention to continue the appropriation as stated in the permit. This permit shall not be transferred or assigned except with the written consent of the Commissioner. (d) **MODIFICATION** The Permittee must notify the Commissioner in writing of any proposed changes to the existing permit. This permit shall not be modified without first obtaining the written permission from the Commissioner.

**COMMISSIONER'S AUTHORITY:** (a) The Commissioner may inspect any installation utilized for the appropriation or use of water. The Permittee shall grant access to the site at all reasonable times and shall supply such information concerning such installation as the Commissioner may require. (b) The Commissioner may, as he/she deems necessary, require the Permittee to install gages and/or observation wells to monitor the impact of the Permittee's appropriation on the water resource and require the Permittee to pay necessary costs of installation and maintenance. (c) The Commissioner may restrict, suspend, amend, or cancel this permit in accordance with applicable laws and rules for any cause for the protection of public interests, or for violation of the provisions of this permit.

**PUBLIC RECORD:** All data, facts, plans, maps, applications, annual water use reports, and any additional information submitted as part of this permit, and this permit itself are part of the public record and are available for public inspection at the offices of DNR Ecological and Water Resources. The information contained therein may be used by the Division as it deems necessary. The submission of false data, statements, reports, or any such additional information, at any time shall be deemed as just grounds for revocation of this permit.

**MONITORING REQUIREMENTS:** Minnesota Statutes 103G.282 authorizes the Department of Natural Resources to require permittees to install and maintain monitoring equipment to evaluate water resource impacts from permitted appropriations. You may be required to modify or install automated measuring devices and keep records for each installation. The frequency of measurements and other requirements will be based on quantity of water appropriated, source of water, potential connections to other water resources, nature of concern, and other relevant factors.

**DROUGHT PLANNING:** In accordance with M.S. 103G.293, all permits must be consistent with the drought response plan detailed in the Statewide Drought Plan at [http://files.dnr.state.mn.us/natural\\_resources/climate/drought/drought\\_plan\\_matrix.pdf](http://files.dnr.state.mn.us/natural_resources/climate/drought/drought_plan_matrix.pdf).

**WELL SEALING:** The permittee shall notify the Minnesota Department of Health prior to sealing, removing, covering, plugging or filling the well(s) from which the authorized appropriation was made. The well(s) must be sealed by a licensed well driller and in accordance with the procedures required under Minnesota Statutes 103I and Minnesota Rules 4725 as administered by the Minnesota Department of Health.

**WATER USE CONFLICT:** If notified by the DNR that a water use conflict is suspected and probable from your appropriation, based on confirmation of a formal well interference complaint or a preliminary hydrologic assessment, all appropriation authorized by this permit must cease immediately until the interference is resolved. The permittee may be required to obtain additional data to support the technical analysis, such as domestic well information within a radius of one and one-half miles of the production well. The permittee and impacted party may engage in a negotiated settlement process and there may be modifications made to this permit in support of conflict resolution.

**WATER CONSERVATION:** All practical and feasible water conservation methods and practices must be employed to promote sound water management and use the least amount of water necessary, such as reuse and recycling water, water-saving devices, and water storage.

**DISCHARGE AUTHORIZATION:** This permit is valid only in conjunction with all required discharge authorizations from local, state, or federal government units.

**FEE:** In accordance with M.S. 103G.301, fees for all projects appropriating in excess of 100 million gallons per year must be assessed to recover the reasonable costs for environmental review and permitting. This permit is only valid if all fees are current.

**CONDITIONS** *(Continued from previous page)*

**WELL OPERATION PLAN:** The Well Operation Plan is still in effect on this split use permit as defined in the original permit issued December 8, 2008. The plan is based on the flow rates in the Pomme de Terre River.

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cc: Tostenson, Janae, Contact; Apec, LLC  
Tony Anderson, Conservation Officer, Morris  
Bill Kleindl, County, Stevens  
Matt Solemsaas, SWCD, Stevens SWCD

# Minnesota Department of Natural Resources

Ecological and Water Resources • 1509 1<sup>st</sup> Ave N • Fergus Falls MN 56537

218-739-7576

218-739-7601 Fax



June 12, 2014

Anthony Ekren  
Riverview LLP  
26406 470th Ave  
Morris, MN 56267

Mick Miller and Janae Tostenson  
APEC, LLC  
227 South County Road 22  
Morris, MN 56267

Re: Amended Appropriation Permit 2008-0230 Follow-up Letter

Dear Mr. Ekren, Mr. Miller and Ms. Tostenson,

Last week you received the amended permit 2008-0320 from DNR after we received the agreement between APEC, LLC and Riverview LLP. This follow-up letter is to reiterate conditions on the original permit issued in 2008, which were incorporated in the amended permit.

Please read all the conditions on the enclosed 2008 permit detailing the monitoring required in the two observation wells and the river gage discharge as part of the well operation plan. The water levels from the observation wells must be submitted electronically on a monthly basis or upon request to the Ground Water Level Monitoring coordinator at [gwlevelcoor.dnr@state.mn.us](mailto:gwlevelcoor.dnr@state.mn.us). An Excel spreadsheet template for recording and reporting water levels can be obtained from the DNR's Ground Water Coordinator at [gwlevelcoor.dnr@state.mn.us](mailto:gwlevelcoor.dnr@state.mn.us) or can be found as the Ground Water Level Monitoring Spreadsheet on the DNR's website at [http://www.dnr.state.mn.us/waters/watermgmt\\_section/appropriations/permits.html](http://www.dnr.state.mn.us/waters/watermgmt_section/appropriations/permits.html). This form must be used to report ground water levels. We expect you begin monitoring prior to the date you begin using the production wells to provide pre-pumping data.

If you have questions about these conditions please contact me at [janell.miersch@state.mn.us](mailto:janell.miersch@state.mn.us) or (218) 739-7576 extension 253.

Sincerely,

A handwritten signature in black ink that reads 'Janell Miersch'.

Janell Miersch  
Groundwater Appropriation Hydrologist

Encl: Original 2008 Permit #2008-0230

Ec: Matt Solemsaas, Stevens County SWCD  
Bill Kleindl, Stevens County

Tony Anderson, DNR Conservation Officer  
Barry Stratton, Southern District Manager



## Minnesota Department of Natural Resources

WATERS  
1509 1<sup>st</sup> Avenue North  
Fergus Falls, MN 56537  
(218) 739-7576  
July 10, 2008

APEC, LLC  
Barry Morgan  
227 South County Road 22  
Morris, MN 56267

Dear Mr. Morgan:

### WATER APPROPRIATION PERMIT 2008-0230, ETHANOL PRODUCTION, STEVENS COUNTY

Please find enclosed permit 2008-0230 authorizing an annual appropriation of 452 million gallons of water on an annual basis for the production of up to 110 million gallons of de-natured ethanol.

Please note Additional Conditions 2 and 3, which require monitoring of observation wells, monitoring of the Pomme de Terre River and implementation of a Well Field Operation Plan.

I also want to make you aware of Additional Condition Number 1, which requires the Department of Natural Resources (DNR) to track the amount of time that staff spend on your project and to bill you as outlined in Minnesota Statute 103G.301, Subd. 2,(b).

As a condition of this permit you are required to install a meter to record monthly and total volumes of water appropriated annually within 10% accuracy. A Water Use Report will be sent to you each January for reporting the amounts for the previous year. The report must be submitted with a processing fee by February 15 each year. The report and fee must be submitted as long as the permit is active, even if no water is used. Failure to submit the Water Use Report and fee can result in the termination of your permit. Do not send the report and fee until notified. The annual report of water use fee rate schedule is located on the back of this letter for your convenience.

If you have any questions, please feel free to contact me at (218) 739-7576 ext 232.

Sincerely,

A handwritten signature in cursive script that reads "Julie Aadland".

Julie Aadland  
Area Hydrologist  
JA/ck

#### Enclosures

cc: Robert J. Bezek, Regional Hydrologist  
Dean Beck, Glenwood Area Fisheries Supervisor  
Kevin Kotts, Glenwood Area Wildlife Manager  
Matt Solemsaas, Stevens County SWCD  
Jim Thoreen, Stevens County Zoning  
Tony Anderson, Conservation Officer  
Eric Norton, USCOE  
Central Office Appropriation Permits  
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(f) Unless explicitly specified, this permit does not authorize any alterations of the beds or banks of any public (protected) waters or wetlands. A separate permit must be obtained from the Department of Natural Resources prior to any such alteration.

**3. PERMITTEE'S RESPONSIBILITIES:**

**(a) FLOW METER.**

The Permittee shall equip each installation for appropriating or using water with a flow meter, unless another method of measuring the quantity of water appropriated to within ten (10) percent of actual amount withdrawn is approved by the Department.

**(b) REPORTS.**

Monthly records of the amount of water appropriated or used shall be recorded for each installation. Such readings and the total amount of water appropriated or used shall be reported annually to the Director of DNR Waters, on or before February 15 of the following year, upon forms supplied by the Division. Any processing fee required by law or rule shall be submitted with the records whether or not any water was appropriated during the year. Failure to report shall be sufficient cause for terminating the permit 30 days following written notice.

**(c) TRANSFER OR ASSIGNMENT.**

Any transfer or assignment of rights, or sale of property involved hereunder shall be reported within 90 days thereafter to the Director of DNR Waters. Such notice shall be made by the transferee (i.e., new owner) and shall state the intention to continue the appropriation as stated in the permit. This permit shall not be transferred or assigned except with the written consent of the Commissioner.

**(d) MODIFICATION.**

The Permittee must notify the Commissioner in writing of any proposed changes to the existing permit. This permit shall not be modified without first obtaining the written permission from the Commissioner.

**4. COMMISSIONER'S AUTHORITY:**

(a) The Commissioner may inspect any installation utilized for the appropriation or use of water. The Permittee shall grant access to the site at all reasonable times and shall supply such information concerning such installation as the Commissioner may require.

(b) The Commissioner may, as he/she deems necessary, require the Permittee to install gages and/or observation wells to monitor the impact of the Permittee's appropriation on the water resource and require the Permittee to pay necessary costs of installation and maintenance.

(c) The Commissioner may restrict, suspend, amend, or cancel this permit in accordance with applicable laws and rules for any cause for the protection of public interests, or for violation of the provisions of this permit.

**5. PUBLIC RECORD:**

All data, facts, plans, maps, applications, annual water use reports, and any additional information submitted as part of this permit, and this permit itself are part of the public record and are available for public inspection at the offices of DNR Waters. The information contained therein may be used by the Division as it deems necessary. The submission of false data, statements, reports, or any such additional information, at any time shall be deemed as just grounds for revocation of this permit.

**6. WETLAND CONSERVATION ACT:**

Where the work authorized by this permit involves the draining or filling of wetlands not subject to DNR regulations, the permittee shall not initiate any appropriation under this permit until the permittee has obtained official approval from the responsible governmental unit as required by the Minnesota Wetland Conservation Act. If wetland monitoring shows long term sustained water level drawdown, additional investigation may be required to assess wetland impact.

**7. WELL SEALING:**

The permittee shall notify the Minnesota Department of Health prior to sealing, removing, covering, plugging or filling the well(s) from which the authorized appropriation was made. The well(s) must be sealed by a licensed well driller and in accordance with the procedures required under Minnesota Statutes 1031 and Minnesota Rules 4725 as administered by the Minnesota Department of Health.

**8. INTERFERENCE:**

If notified by the Department that well interference is suspected and probable from your appropriation, based on confirmation of a formal well interference complaint, all appropriation authorized by this permit must cease immediately until the interference is resolved. The permittee may be required to obtain domestic well information within a radius of one and one half miles of the production well should well interference problems develop.

**9. CONSERVATION:**

All practical and feasible water conservation methods and practices must be employed to promote sound water management and use the least amount of water necessary, such as reuse and recycling water, saving devices, and water storage.

**10. DISCHARGE AUTHORIZATION:**

This permit is valid only in conjunction with all required discharge authorizations.

**11. LEASE AGREEMENTS:**

This permit is only valid as long as a lease agreement is in effect for the land covered under this permit. The permittee shall submit to the division of Waters agreements and report termination of the same.

**ADDITIONAL CONDITIONS**

**1. FEES:**

In accordance with M.S. 103G.301, fees for all projects appropriating in excess of 100 million gallons per year must be assessed to recover the reasonable costs for environmental review and permitting. This permit is only valid if all fees are current.

**2. OBSERVATION WELL MONITORING:**

The permittee is required to measure water levels, with an accuracy of 0.01 foot, in the west observation well (unique number 740628) and the east observation well (unique number 740627). Water levels shall be measured monthly, and recorded as depth to water from the top of the well casing. Monitoring reports shall be submitted electronically on a quarterly basis to [julie.eedland@dnr.state.mn.us](mailto:julie.eedland@dnr.state.mn.us) and [carla.koski@dnr.state.mn.us](mailto:carla.koski@dnr.state.mn.us) located in the DNR office in Fergus Falls and [michael.macdonald@dnr.state.mn.us](mailto:michael.macdonald@dnr.state.mn.us) located in the DNR office in St. Paul.

**3. RIVER MONITORING REQUIREMENTS AND WELL OPERATION PLAN:**

The discharge at the USGS River gage at Appleton, Station #05294000 shall be monitored daily. The web address for real time data is: [http://waterdata.usgs.gov/mn/nwis/uv/?site\\_no=05294000&agency\\_cd=USGS](http://waterdata.usgs.gov/mn/nwis/uv/?site_no=05294000&agency_cd=USGS). This data shall be used to operate the wells in accordance with the following Well Operation Plan.

**Additional Condition No. 3 continued:**

<b>Well Field Operation Plan</b>		
<b>Pomme de Terre River Flow at Appleton Gauge<sup>a</sup></b>	<b>South Well Field Pumping Permit #2008-0230</b>	<b>North Well Field Pumping<sup>b</sup> Permit #2008-0231</b>
Greater than 31 cfs	Total demand distributed between two well fields.	Total demand distributed between two well fields.
Less than or equal to 31 cfs and greater than 22 cfs	Total pumping rate less than or equal to 450 gpm.	Total pumping rate equal to facility demand (at an average of 860 gpm) less South Well Field pumping up to 450 gpm.
Less than or equal to 22 cfs and greater than 15 cfs	Total pumping rate less than or equal to 300 gpm.	Total pumping rate equal to facility demand (at an average of 860 gpm) less South Well Field pumping up to 300 gpm.
Less than or equal to 15 cfs	0	Pumping rate equivalent to Facility demand (at an average of 860 gpm).

<sup>a</sup>Average daily flow for a period of 120 hours.

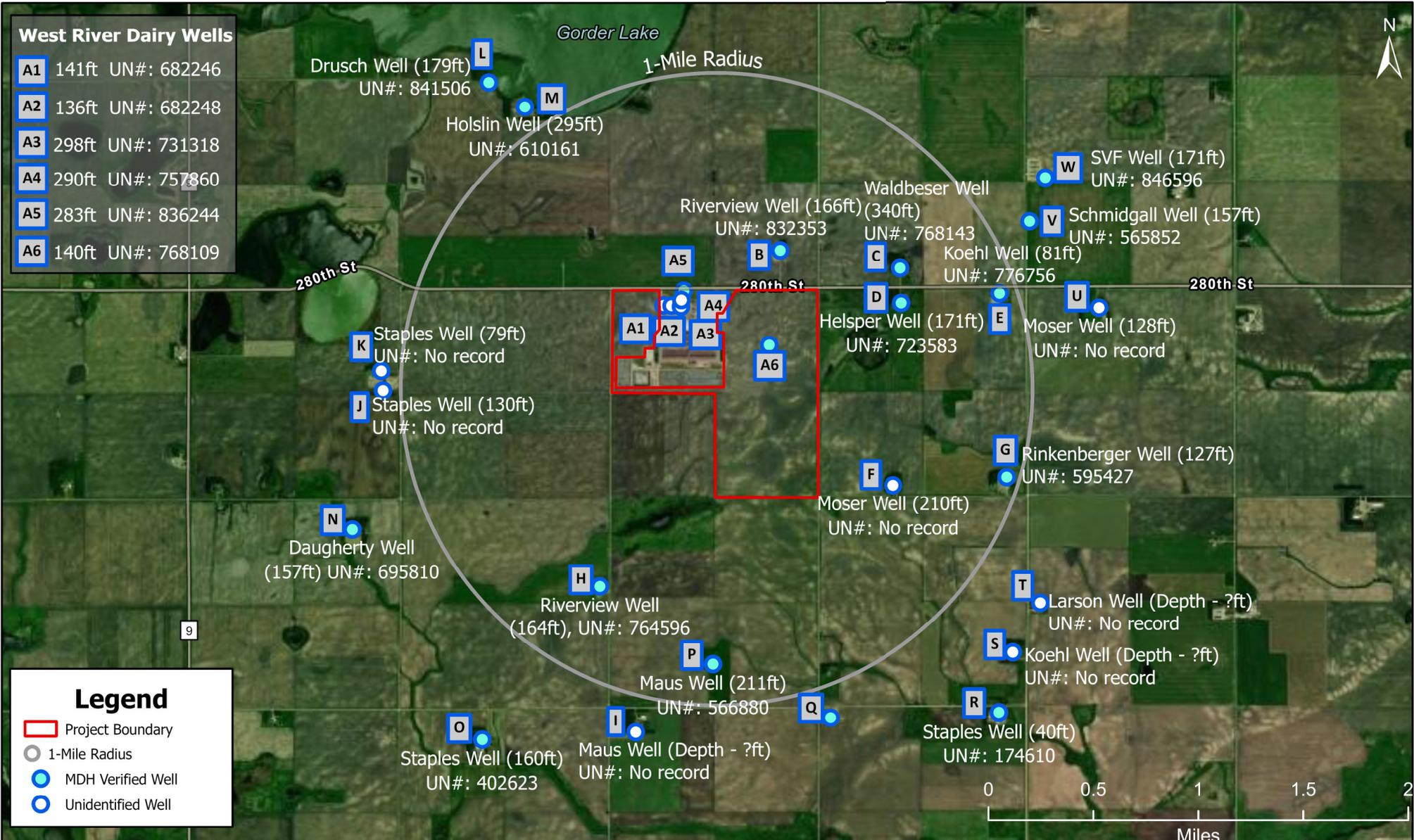
<sup>b</sup>Well interference triggers are always in effect

ec: Robert J. Bezek, Regional Hydrologist  
 Dean Beck, Glenwood Area Fisheries Supervisor  
 Kevin Kotts, Glenwood Area Wildlife Manager  
 Matt Solemsaas, Stevens County SWCD  
 Jim Thoreen, Stevens County Zoning  
 Tony Anderson, Conservation Officer  
 Eric Norton, USCOE  
 Central Office Appropriation Permits  
 Central Office SWUDS

# Attachment 12

MDH Well Index Map

**Attachment 12**



MDH Well Index Map	A1-5	C	G	K	O	S	V
West River Dairy Expansion Synnes Township	<b>Riverview, LLP West River Dairy</b> 52751 280th Street Morris, MN 56267	<b>Matt Waldbeser</b> 51606 280th Street Morris, MN 56267	<b>Joe Rinkenberger</b> 51096 290th Street Morris, MN 56267	<b>Bryce Benson</b> 28435 540th Avenue Morris, MN 56267	<b>Stan Staples</b> 53697 300th Street Morris, MN 56267	<b>Marty Koehl</b> 29779 510th Avenue Morris, MN 56267	<b>Loren Schmidgall</b> Morris, MN 56267
	<b>A6 Riverview, LLP Irrigation Well</b> 52751 280th Street Morris, MN 56267	<b>D John Helsper</b> 51605 280th Street Morris, MN 56267	<b>H Riverview, LLP</b> 29433 530th Avenue Morris, MN 56267	<b>L Karen Drusch</b> 53798 270th Street Alberta, MN 56207	<b>P Clifford Maus</b> Morris, MN 56267	<b>T Randy Larson</b> 29546 510th Avenue Morris, MN 56267	<b>W Spring Valley Farms</b> 27520 510th Avenue Morris, MN 56267
	<b>B Riverview, LLP</b> 52109 280th Street Morris, MN 56267	<b>E Lucas Koehl</b> 51125 280th Street Morris, MN 56267	<b>I Dorothy Maus</b> 52869 300th Street Morris, MN 56267	<b>M Maurice Holslin</b> 53370 270th Street Alberta, MN 56207	<b>Q Larry Pitch</b> 51875 300th Street Morris, MN 56267	<b>U Travis Moser</b> 50743 280th Street Morris, MN 56267	
	<b>F Jon Moser</b> 51626 290th Street Morris, MN 56267		<b>J Ron Staples</b> 28437 540th Avenue Morris, MN 56267	<b>N Erik Daugherty</b> 29147 540th Avenue Morris, MN 56267	<b>R Scott Staples</b> 51115 300th Street Morris, MN 56267		