

Subject: Finding of No Significant Environmental Impact and Necessary Environmental Findings for Bushmill Ethanol Inc. Installation of Anaerobic Digestion System to existing Ethanol Facility
Atwater, Minnesota
9004 Repowering Assistance Program

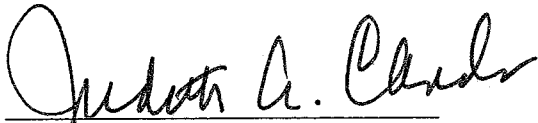
To: Project File

The attached environmental assessment for the subject proposal has been prepared and reviewed by the appropriate Rural Development official(s). After reviewing the assessment and the supporting materials attached to it, I find that the subject proposal will not significantly affect the quality of the human environment. Therefore, the preparation of an environmental impact statement is not necessary.

I also find that the assessment properly documents the proposal's status of compliance with the environmental laws and requirements listed therein.

Conditions:

- a. The applicant must provide a copy of the Industrial by-products land application permit for the project from MPCA prior to the issuance of an RD funding. If no permit(s) are required for the project for industrial by-products land application, then documentation must be submitted substantiating this claim.
- b. The applicant must provide a copy of all air quality permit(s) and permit modification(s) for the project prior to the issuance of any RD funding.
- c. The applicant must provide a copy of all water quality permit(s) and permit modification(s) for the project prior to the issuance of any RD funding. If no permit(s) or modification(s) are required for stormwater or wastewater discharge, then documentation must be submitted substantiating this claim.



JUDITH A. CANALES
Administrator
Rural Business and Cooperative Service

5/14/10

Date

USDA-Rural Development
 Form RD 1940-21
 (Rev. 6-88)

ENVIRONMENTAL ASSESSMENT FOR CLASS I ACTION

1. Description

- a. Name of Project: Bushmill Ethanol Inc. -Anaerobic Digester
- b. Project Number: 9004 Program
- c. Location: 17025 Hwy 12, NE, Atwater, Minnesota 56209 S10 T119N, R33W, Kandiyohi Co

2. Protected Resources

The following land uses or environmental resources will either be affected by the proposal or are located within the project site. (Check appropriate box for every item of the following checklist. If more than one item is checked "yes" the environmental assessment format for a Class II action must be completed, except if the action under review is either (1) an application for a Housing Preservation Grant or (2) normally a categorical exclusion that has lost its exclusion status. The reviewer should not initiate the Assessment for a Class I action when it is obvious that the assessment format for a Class II action will be required.)

	YES	NO
a. Wetlands	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Floodplains	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Wilderness (designated or proposed under the Wilderness Act)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Wild or Scenic River (proposed or designated under the Wild and Scenic Rivers Act)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Historical, Archeological Sites	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>(listed on the National Register of Historic Places or which may be eligible for listing)</i>		
f. Critical Habitat or Endangered/Threatened Species (listed or proposed)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Coastal Barrier included in Coastal Barrier Resources System	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Natural Landmark (listed on National Registry of Nature Landmark)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i. Important Farmlands	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j. Prime Forest Lands	<input type="checkbox"/>	<input checked="" type="checkbox"/>
k. Prime Rangeland	<input type="checkbox"/>	<input checked="" type="checkbox"/>
l. Approved Coastal Zone Management Area	<input type="checkbox"/>	<input checked="" type="checkbox"/>
m. Sole Source Aquifer Recharge Area	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>(designated by Environmental Protection Agency)</i>		

For an item checked "yes", I have attached as Exhibit 1 both the necessary documentation to demonstrate compliance with the Agency's requirements for the protection of the resource and a discussion setting forth the reasons why the potential impact on the resource is not considered to be significant. If item e. is checked "no", the results of the consultation process with the State Historic Preservation Officer is also attached.

3. General Impacts

I have reviewed the environmental data submitted, dated and signed by the applicant as well as any previously completed environmental impact analysis and conclude the following:

- a. The project, the project area, and the primary beneficiaries are adequately identified;
- b. No incompatible land uses will be created nor direct impacts to parks, beaches, dunes, barrier islands, or important wildlife habitats or recreational areas; and
- c. Only minimal impacts or no impacts will result to the following checked items:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Air Quality | <input checked="" type="checkbox"/> Wildlife |
| <input checked="" type="checkbox"/> Water Quality | <input checked="" type="checkbox"/> Energy |
| <input checked="" type="checkbox"/> Solid Waste Management | <input checked="" type="checkbox"/> Construction Impacts |
| <input checked="" type="checkbox"/> Transportation | <input checked="" type="checkbox"/> Secondary Impacts |
| <input checked="" type="checkbox"/> Noise | |

An analysis of an item which cannot be checked, therefore having a potential for more than minimal impacts, is attached as Exhibit _____.
(If more than one item is unchecked, the environmental assessment format for a Class II action must be completed).

4. State, Regional and/or Local Government Consultation

- Yes No This project is subject to review by State, regional, or local agencies under the requirements of Executive Order 12372, Intergovernmental Review of Federal Programs.

If "Yes" is checked, complete (a), or (b) or (c). (If negative environmental comments have been received, the environmental assessment format for a Class II action must be completed).

- a. The review period has expired and no comments were received.
- b. No negative comments of an environmental nature were received and the review period is complete, with the comments attached.
- c. Negative comments of an environmental nature have been received.

5. Controversy

- Yes No This action is controversial for environmental reasons or is the subject of an environmental complaint.
If yes, check one of the following::

- The action is the subject of isolated environmental complaints or questions have been raised which focus on a single impact. Attached as Exhibit _____ is an analysis of the complaint or questions, and no further analysis is considered necessary.

6. Cumulative Impacts

- Yes No The cumulative impacts of this action and other Rural Development actions, other federal actions, or related nonfederal actions exceed the criteria for a Class I action; or the action represents a phase or segment of a larger project, the latter which exceeds the criteria for a Class I action.

7. Need for the Project and Alternatives to it

Attached as Exhibit A is a brief statement of Rural Development's position regarding the need for the project. Also, briefly discussed are (a) the alternatives which have been considered by the applicant and Rural Development and (b) the environmental impacts of these alternatives. Alternatives include alternative locations, alternative designs, alternative projects having similar benefits, and no action.

8. Measures to Avoid or Mitigate Adverse Environmental Impacts

Yes No Mitigation measures are required. Attached as Exhibit A is a description of the site or design change that the applicant has agreed to make as well as mitigation measures that will be placed as special condition within the offer of financial assistance or subdivision approval.

9. Compliance With Highly Erodible Land and Wetland Conservation Requirements

Yes No This action is subject to the highly erodible and wetland conservation requirements contained in Exhibit M of RD Instruction 1940-G.

If "yes" is checked, complete (a), (b), (c), and (d).

a. Attached as Exhibit _____ is a completed Form SCS-CPA-026 which documents the following:

Yes No Highly erodible land is present on the farm property.

Yes No Wetland is present on the farm property.

Yes No Converted wetland is present on the farm property.

b. Yes No This action qualifies for the following exemption allowed under Exhibit M :

c. Yes No The applicant must complete the following requirements prior to approval of the action in order to retain or regain its eligibility for Agency financial assistance:

d. Yes No Under the requirements of Exhibit M, the applicant's proposed activities are eligible for Agency financial assistance.

10. Environmental Determinations

The following recommendations shall be completed and the environmental reviewer shall sign the assessment in the space provided below.

a. Based on an examination and review of the foregoing information and such supplemental information attached hereto, I recommend that the approving official determine that this project:

- will have a significant effect on the quality of the human environment and an Environmental Impact Statement must be prepared;
- will not have a significant effect on the quality of the human environment,
- will require further analysis through completion of the assessment format for a Class II action.

b. I recommend that the approving official make the following compliance determinations for the below listed environmental requirements.

Not In Compliance	In Compliance	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Clean Air Act
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Federal Water Pollution Control Act
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Safe Drinking Water Act-Section 1424(e)
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Endangered Species Act
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Coastal Barrier Resources Act
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Coastal Zone Management Act-Section 307(c)(1) and (2)
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Wild and Scenic Rivers Act
<input type="checkbox"/>	<input checked="" type="checkbox"/>	National Historic Preservation Act
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Archeological and Historic Preservation Act
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Highly Erodible Land and Wetland Conservation, Food Security Act
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Executive Order 11988, Floodplain Management
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Executive Order 11990, Protection of Wetlands
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Farmland Protection Policy Act
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Departmental Regulation 9500-3, Land Use Policy
<input type="checkbox"/>	<input checked="" type="checkbox"/>	State Office Natural Resource Management Guide

c. I have reviewed and considered the types and degrees of adverse environmental impacts identified by this assessment. I have also analyzed the proposal for its consistency with Rural Development environmental policies, particularly those related to land use, and have considered the potential benefits of the proposal. Based upon a consideration and balancing of these factors, I recommend from an environmental standpoint that the project

be approved not be approved because of the attached reasons (see Exhibit _____).

Julie Beckman
Signature of Preparer*

01/12/10
Date

Title Environmental Protection Spec.

*See Section 1940.302 for listing of officials responsible for preparing assessment.

Justin A. Clark
Signature of Concurring Official 1

5/14/10
Date

Title ADMINISTRATOR

I have reviewed this environmental assessment and supporting documentation. Following are my Positions regarding its adequacy and the recommendations reached by the preparer. For any matter in which I do not concur, my reasons are attached as Exhibit N/A

Do not
Concur Concur

- Adequate Assessment
- Environmental Impact Determination
- Compliance Determinations
- Project Recommendation

John A. Rodgers
Signature of State Environmental Coordinator 2
National Office - Acting Director PSS

5/14/2010
Date

¹ See Section 1940.316 for both the instances when a concurring official must sign the assessment and who is authorized to sign as the concurring official.
² See Section 1940.316 for instances when State Environmental Coordinator's review is required.

**EXHIBIT A – ATTACHMENTS TO
ENVIRONMENTAL ASSESSMENT FOR A CLASS I ACTION**

Project Name: Bushmill Ethanol Inc.
Renewable Biogas Production From Backset Cleanup - Installation
of 7 Million Gallon Anaerobic Digester to existing ethanol facility

Location: 17025 Hwy 12, NE, Atwater, Minnesota 56209
S10 T119N, R33W, Kandiyohi County

Program: 9004 Repowering Assistance Program \$ 1,810,000

Project Purpose: The project purpose and need is to install a 7 Million Gallon anaerobic digester process to the existing ethanol facility. The project purpose and need is to reduce costs associated with utilizing natural gas as well as replace finite, non-renewable fossil resources, and reduce associated CO₂ emissions, with sustainable, renewable biomass resources. The process will digest that portion of the "thin stillage" used as "backset water". The biogas (methane) produced from the digester will be utilized in the dryer/boiler to offset the use of natural gas. A flare will be installed to flare the biogas when it is not being used in the boiler. Based on the fuel mix and the projected methane production of 1,500 MMBtu/day, the feasibility report estimated that the proposed project will produce an approximately 35 percent offset to Bushmill's non-renewable energy consumption.

A summary of the resources evaluated is below: (Please refer to the Form RD 1940-20, attachments, and the applicant's 9004 Application for more detailed information on each of the resources evaluated).

- a. **Wetlands** – No wetlands or waterways are impacted therefore there is no effect.
- b. **Floodplains** – The proposed project and existing facility is not located within the 100- or 500-year floodplain. A FEMA 81-93 Form is not required since there is no mortgage as funding is in the form of a grant.
- c. **Wilderness** – No wilderness is present or affected therefore there is no effect. The site is an established industrial site.
- d. **Wild or Scenic Rivers** – No Wild or Scenic Rivers are present or affected, therefore there is no effect.
- e. **Historical, Archeological Sites** - RD has made a determination under Section 106 of the NHPA that there would be no adverse effects to historic or cultural sites listed on, or eligible for listing on the National Register of Historic Places. The Minnesota SHPO concurred the project would have no potential to affect historic or archeological resources in a letter dated January 7, 2010. No known tribal resources are located within this area.
- f. **Critical Habitat or Endangered/Threatened Species** – RD has made a determination under Section 7 of the Endangered Species act that the proposed project has no potential to affect endangered or threatened species or their critical habitat since the project area is located within an established industrial site and no

endangered or threatened species have been identified within either the project area or adjacent property.

- g. **Coastal Barrier** – No Coastal Barriers are present or affected, therefore there is no effect.
- h. **Natural Landmark** – No Natural Landmarks are present or affected, therefore there is no effect.
- i. **Important Farmlands** – The project will entail installation of digester tanks next to the current location of the fermentation tanks, and within an area which has already been converted to industrial use, and centrally located within the ethanol facility. No Important Farmlands are affected therefore there is no effect.
- j. **Prime Forest Lands** – No Prime Forest Lands are present or affected, therefore there is no effect.
- k. **Prime Range Lands** – No Prime Range Lands are present or affected, therefore there is no effect.
- l. **Approved Coastal Zone Management Area** – No Coastal Zone Management Areas are present or affected, therefore there is no effect.
- m. **Sole Source Aquifer Recharge Area** – No Sole Source Aquifer Recharge Areas are present or affected, therefore there is no effect.
- n. **Air Quality** – The feasibility report indicates that this project will cause little to no change in the current air emissions from the facility. The biogas will be scrubbed and burned as a replacement for 35 percent of the current natural gas consumption. This project will require an Air Quality Permit Modification from the Minnesota Pollution Control Agency (MPCA). The permit modification will determine future emission limits and the monitoring and control requirements necessary for compliance. A combination of pollution control equipment, emission controls and permit limitations will keep the criteria pollutants (Carbon Monoxide, Lead, NO_x, PM₁₀, PM, Sulfur Dioxide, VOCs) within permitted threshold levels. Any potential increases in these pollutants would pose an adverse effect (adverse impact) to air quality; however the impact would not be a significant adverse effect because any increases would be required to be within proposed air emission permit threshold levels for these pollutants. The applicant must provide a copy of all air quality permit(s) and permit modification(s) prior to the issuance of any RD funding.
- o. **Water Quality** – The feasibility report for this project purports that there will be no change in water quality related to this project. Any increases in stormwater or wastewater that the project proposes will either be handled under existing NPDES permit(s) or modification(s) of the existing NPDES permit(s). The applicant must provide a copy of all water quality permit(s) and permit modification(s) prior to the issuance of any RD funding. If no permit(s) or modification(s) are required for stormwater or wastewater discharge, then documentation must be submitted substantiating this claim.
- p. **Solid Waste Management** – The feasibility report for this project purports that there will be no change in the solid waste management, and no increase in generation or disposal of hazardous or toxic wastes. The waste solids from the digester will be added to Distiller's Dried Grains with Solubles (DDGS) which is a co-product of the distillery industries used in livestock feeds. The applicant

must provide a copy of the Industrial by-products land application permit from MPCA (if biosolids are to be land applied) prior to the issuance of an RD funding. If no permit(s) are required for industrial by-products land application, then documentation must be submitted substantiating this claim.

- q. **Transportation** – The project proposes no change to existing transportation patterns.
- r. **Noise** – The project proposes no significant impacts to noise levels.
- s. **Energy** – The feasibility report for this project purports that the project will not require additional outside utility sources to be increased, and is designed to generate biogas onsite to replace natural gas. Therefore there is no potential for impact in this area.
- t. **Environmental Justice** – The project poses no potential for adverse impact to minority or low income communities.
- u. **Construction Impacts** –The project will entail installation of digester tanks next to the current location of the fermentation tanks, and within an area which has already been converted to industrial use, and centrally located within the ethanol facility. Construction Impacts are minor.
- v. **Secondary Impacts** – The project poses no potential to significantly adversely affect air quality or other environmental resources.
- w. **Cumulative Impacts** – The project poses no reasonably foreseeable potential to significantly adversely affect air quality or other environmental resources.
- x. **Intergovernmental Review:** RD coordinated with the MPCA to obtain info on previous EAWs completed on the Ethanol Plant. RD initiated contact with the SHPO.
- y. **Project Alternatives:** Project alternatives reviewed for this grant application were restricted to the no action alternative. In the no action alternative the project would not be funded and theoretically the anaerobic digester system would not be installed. Since the goal of the project is to replace finite, non-renewable fossil resources, and reduce associated CO₂ emissions, with sustainable, renewable biomass resources, the no action alternative would not achieve this goal. The preferred alternative may propose slight increases in some of the six criteria pollutants, however these increases are expected to be within permitted thresholds, and represent a lower amount of air quality pollutants compared to the CO₂ emission reduction of the preferred alternative. Therefore, the no action alternative would have a slightly less higher potential for adverse impact to air quality compared to the preferred alternative.
- z. **Mitigation Measures:** The applicant indicates that a combination of pollution control equipment (biogas flares and biogas scrubber), emission controls and permit limitations will keep the criteria pollutants (Carbon Monoxide, Lead, NO_x, PM₁₀, PM, SO_x, VOCs) within permitted threshold levels. This mitigation is required in order to obtain the MPCA air permit (or permit modification), therefore there is no mitigation required as special condition for financial assistance. However, as noted in air quality section above “The applicant must provide a copy of all air quality permit(s) and permit modification(s) prior to the issuance of any RD funding.” And as noted in the water quality section above “The applicant must provide a copy of all water quality permit(s) and permit

modification(s) prior to the issuance of any RD funding. If no permit(s) or modification(s) are required for stormwater or wastewater discharge, then documentation must be submitted substantiating this claim.” Lastly, as noted in the solid waste management section above “The applicant must provide a copy of the Industrial by-products land application permit from MPCA (if biosolids are to be land applied) prior to the issuance of an RD funding. If no permit(s) are required for industrial by-products land application, then documentation must be submitted substantiating this claim.”

Rural Development
Environmental Justice (EJ) and Civil Rights Impact Analysis (CRIA)
Certification

1. Applicant's name and proposed project description: Bushmill Ethanol Inc. proposes to install an anaerobic digester to produce gas from biomass as replacement for natural gas.

2. Rural Development's loan/grant program/guarantee or other Agency action: RD gives Bushmills an annual payment based upon the fossil fuel replaced by renewable fuel. (Section 9004)

3. Attach a map of the proposal's area of effect identifying location or EJ populations, location of the proposal, area of impact or

Attach results of EJ analysis from the Environmental Protection Agency's (EPAs) EnviroMapper with proposed project location and impact footprint delineated.

4. Does the applicant's proposal or Agency action directly, indirectly or cumulatively affect the quality and/or level of services provided to the community?

Yes No N/A

5. Is the applicant's proposal or Agency action likely to result in a change in the current land use patterns (types of land use, development densities, etc)?

Yes No N/A

6. Does a demographic analysis indicate the applicant's proposal or Agency's action may disproportionately affect a significant minority and/or low-income populations?

Yes No N/A

If answer is no, skip to item 12. If answer is yes, continue with items 7 through 12.

7. Identify, describe, and provide location of EJ population _____

8. If a disproportionate adverse affect is expected to impact an EJ population, identify type/level of public outreach implemented. _____

9. Identify disproportionately high and adverse impacts on EJ populations. _____

10. Are adverse impacts appreciably more severe or greater in magnitude than the adverse impacts expected on non-minority/low-income populations?

Yes No N/A

11. Are alternatives and/or mitigation required to avoid impacts to EJ populations?

Yes No N/A

If yes, describe _____

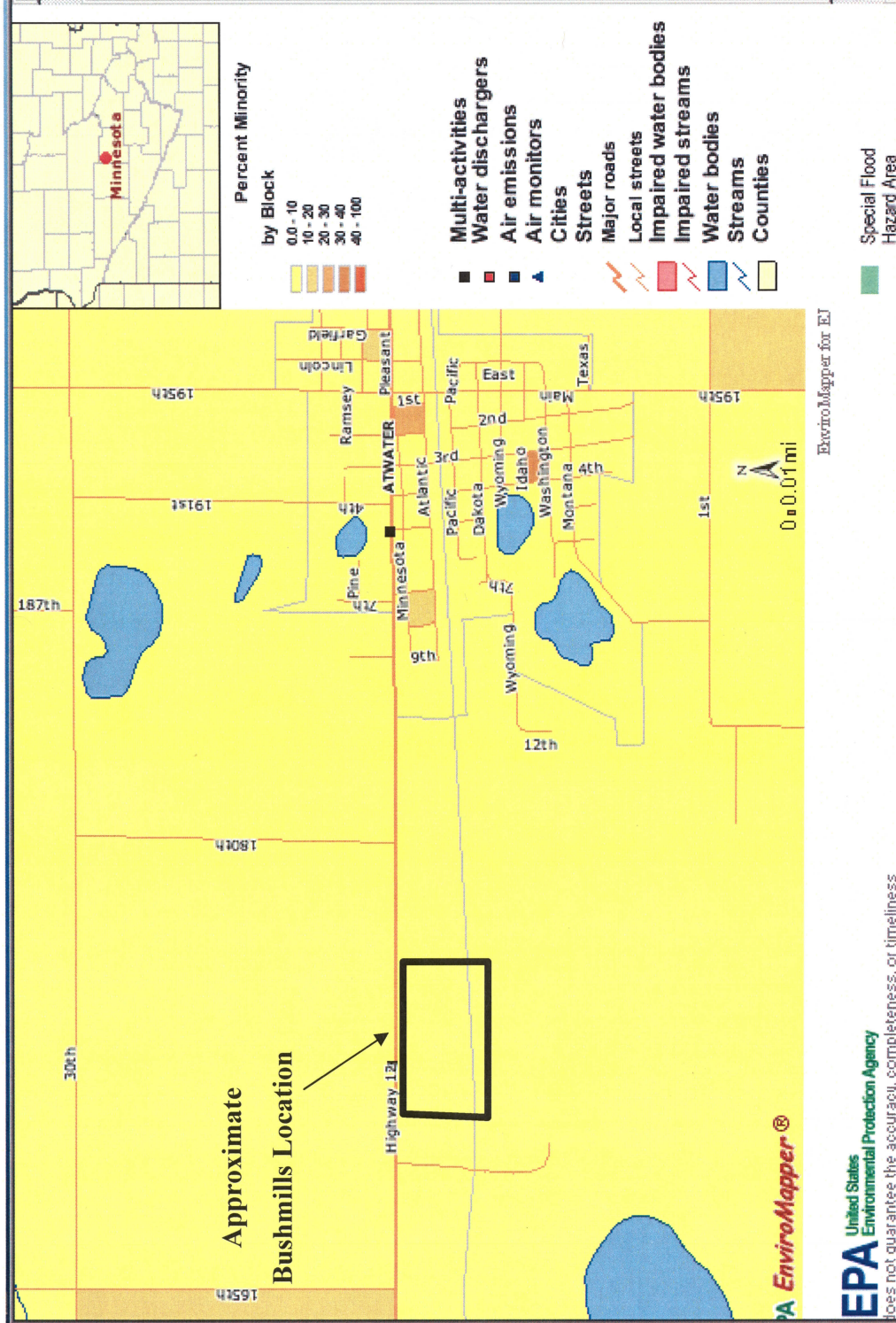
12. I certify that I have reviewed the appropriate documentation and have determined that:

- No major EJ or civil rights impact is likely to result if the proposal is implemented.
 A major EJ or civil rights impact is likely to result if the proposal is implemented.

Juliet C. Bochicchio
Name and Title of Certifying Official

01-07-2010
Date

Juliet C. Bochicchio
Environmental Protection Specialist





STATE HISTORIC PRESERVATION OFFICE

January 6, 2010

Ms. Juliet Bochicchio
USDA-RD
Mail Stop 0761
1400 Independence Ave SW
Washington, DC 20250-0700

RE: Bushmill Ethanol Inc. – Installation of Anaerobic Digester Equipment with Existing Ethanol Facility at 17025 Hwy 12 NE
T119 R33 S10 NE
Atwater, Kandiyohi County
SHPO Number: 2010-0980

Dear Ms. Bochicchio:

Thank you for the opportunity to review and comment on the above project. It has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and the Procedures of the Advisory Council on Historic Preservation (36CFR800).

Based on available information, we conclude that **no properties** listed in or eligible for listing in the National Register of Historic Places will be affected by this project

Please contact our Compliance Section at (651) 259-3455 if you have any questions regarding our review of this project.

Sincerely,

A handwritten signature in black ink that reads 'Britta L. Bloomberg'.

Britta L. Bloomberg
Deputy State Historic Preservation Officer



**United States Department of Agriculture
Rural Development**

Minnesota Historical Society
345 W. Kellogg Blvd.,
St. Paul, MN 55102-1906

DEC 08 2009

Attention: Kelly Gragg-Johnson

Subject: Section 106 Review of **Bushmill Ethanol Inc.** – Anaerobic Digester
Assisted by the U. S. Department of Agriculture, Rural Development
Atwater, MN, Kandiyohi County, S10 T119N R33W

Dear Ms. Gragg-Johnson,

The U.S. Department of Agriculture, Rural Development, is reviewing an application for Bushmill Ethanol Inc. (Bushmill) for federal funding under our repowering assistance program. The funding would allow Bushmill to install a 7 Million Gallon anaerobic digester process to the existing ethanol facility. The process will digest that portion of the “thin stillage” used as “backset water”. Estimates indicate the project will produce an approximately 35 percent offset to Bushmill’s non-renewable energy consumption.

Rural Development has made a determination of no effect for this undertaking based on the following:

- 1) The ethanol facility is an existing facility, and is less than 50 years old,
- 2) The undertaking is for installation of an anaerobic digester and associated equipment and will be located within an area that has been previously ground disturbed during the construction of the ethanol facility, and
- 3) The undertaking is centrally located within the existing ethanol facility.

36 CFR 800.4(a)

The location of the proposed undertaking and the area of potential effects (APE), as defined in 800.16(d), is shown on the enclosed USGS Quadrangle Map. The APE is defined as the site footprint. The legal description of the property is -94.81612 Longitude and 45.13895 Latitude, as shown on the enclosed USGS Quadrangle Map. The street address of the property is 17025 Hwy 12 NE, Atwater, Minnesota, 56209. The property is located at Section 10 Township 119N Range 33W.

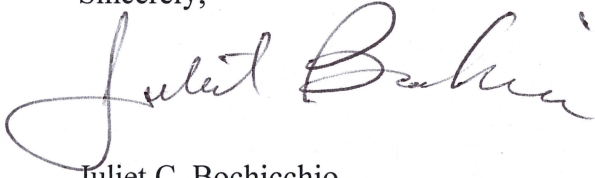
Rural Development is requesting that you respond to this letter with any comments/questions within 30 days from receipt of this letter. Please feel free to contact me with any comments or questions at juliet.bochicchio@wdc.usda.gov or at 202.205.8242. Please be sure to forward all correspondence to my attention to the address below at **Mail Stop 0761**.

1400 Independence Ave, S.W. · Washington DC 20250-0700
Web: <http://www.rurdev.usda.gov>

Committed to the future of rural communities.

“USDA is an equal opportunity provider, employer and lender.”
To file a complaint of discrimination, write USDA, Director, Office of Civil Rights,
1400 Independence Avenue, S.W., Washington, DC 20250-9410 or call (800) 795-3272 (Voice) or (202) 720-6382 (TDD).

Sincerely,

A handwritten signature in cursive script, appearing to read "Juliet Bochicchio".

Juliet C. Bochicchio
Environmental Protection Specialist

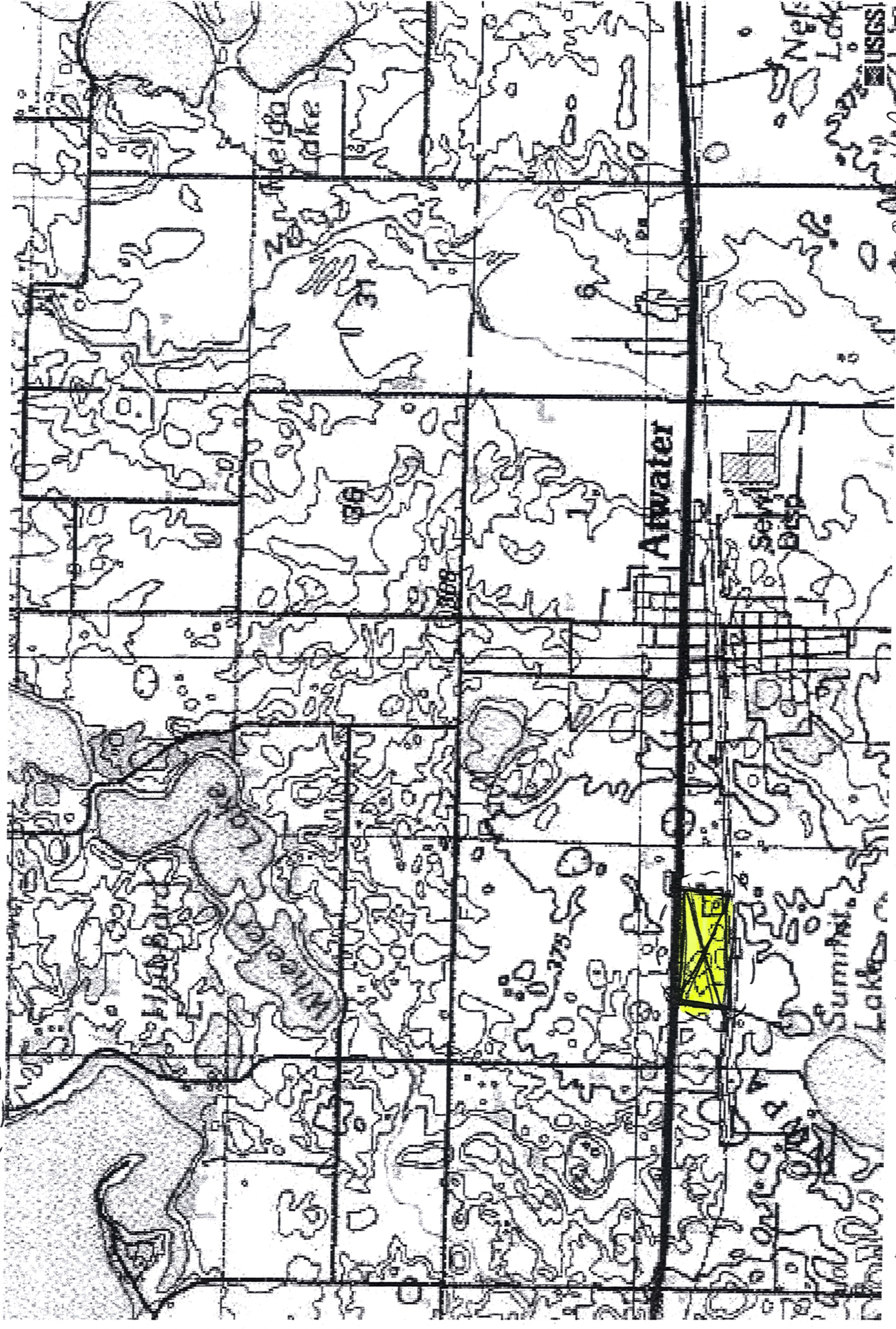
cc: Erik Osman, Bushmill Ethanol, Inc.

- Attachments:
- 1) Map of Genessee Township
 - 2) USGS Quadrangle Location Map
 - 3) Aerial Photograph with Project Location
 - 4) Aerial Photograph with Proposed Construction Footprint
 - 5) Photograph of existing facility

POTENTIAL EFFECT (APE)

✉ Project Location

3 Km W of Atwater, MN.

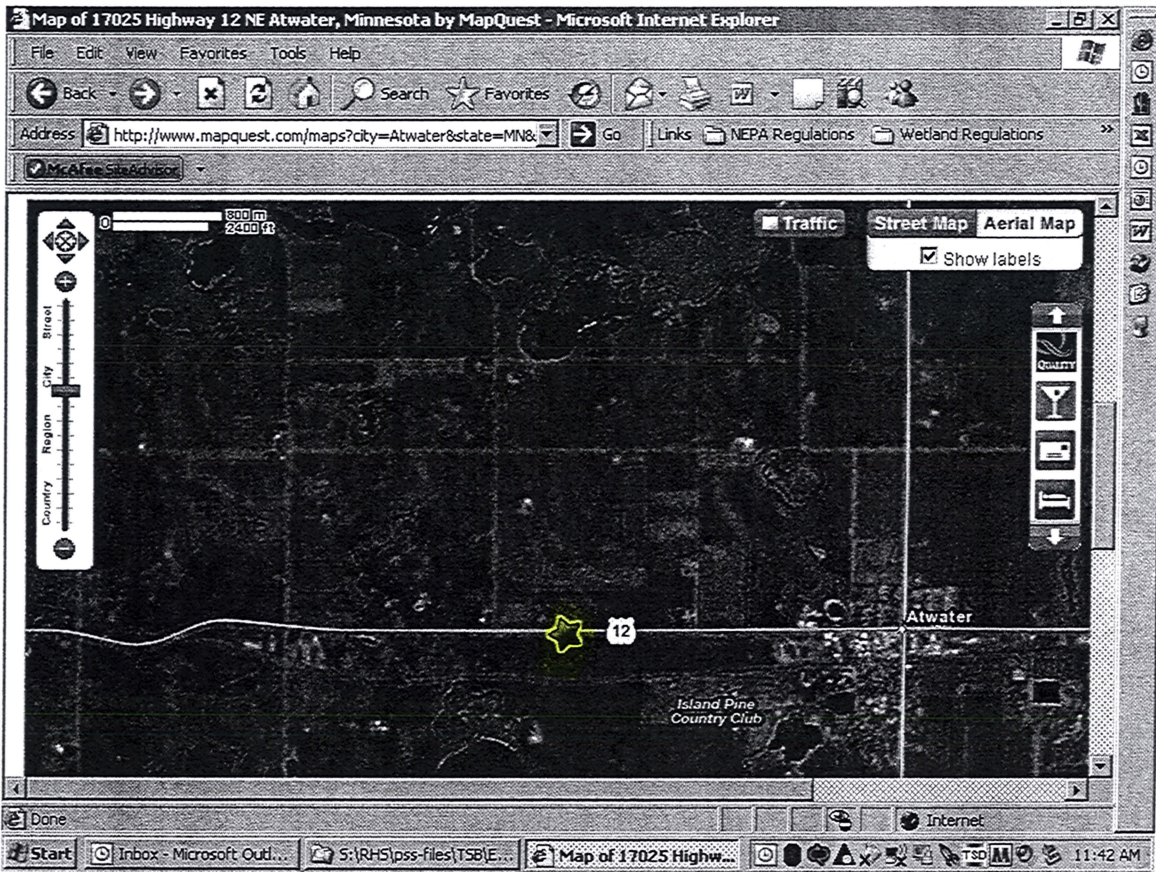


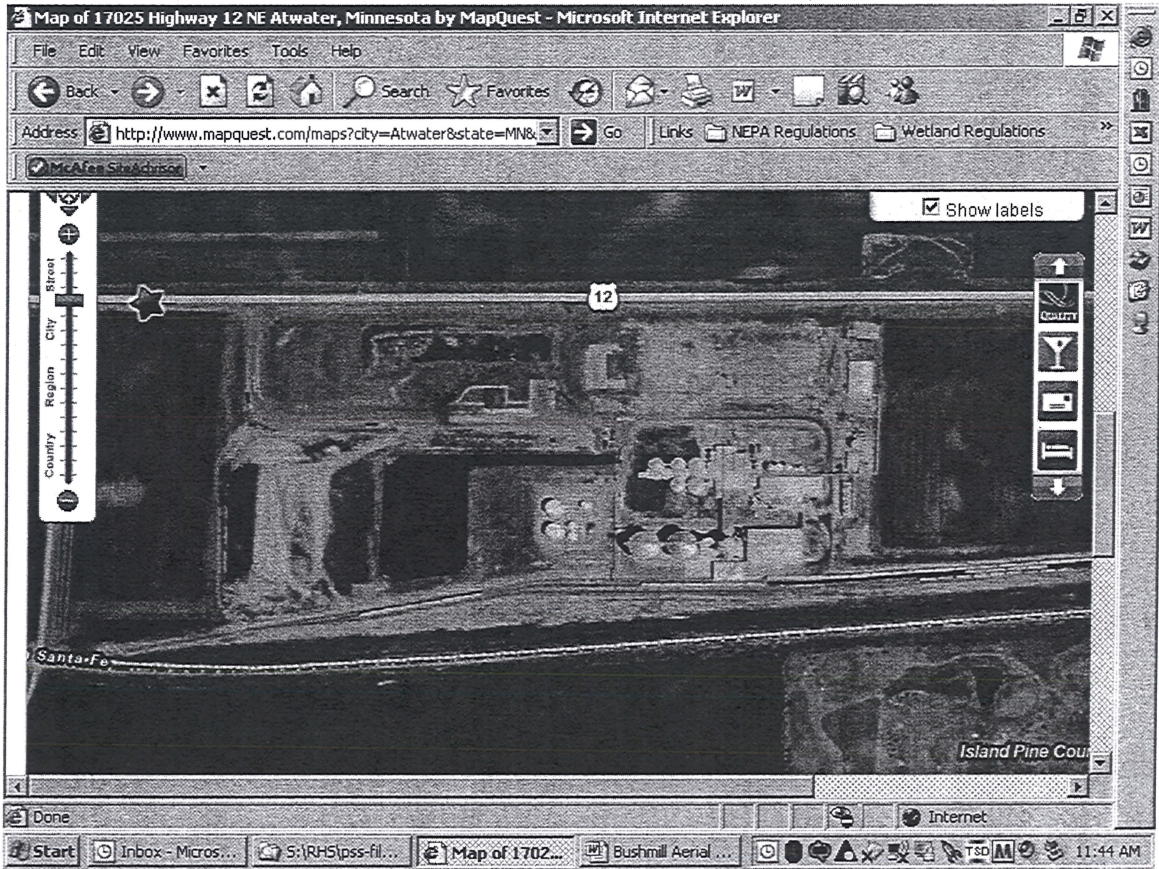
Longitude
-94.81612

Latitude
45.13895

Bush mill Ethanol Facility

uses GDA83 Map
Atwater, MN
4/20/1991





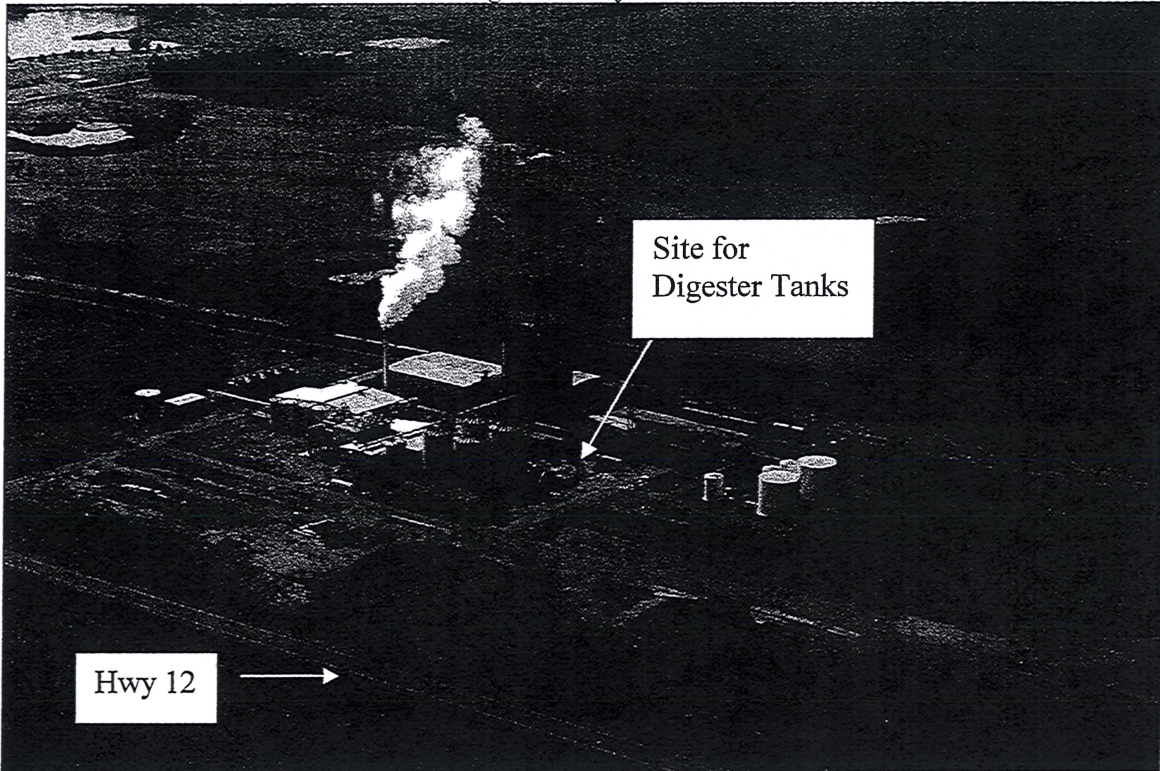
Proposed
Construction
Foot print



Bushmills
Backset Treatment Project

Figure 2 is an aerial view showing the plant just north of Highway 12. The proposed project site is located on property already owned by Bushmills. The location for the proposed seven (7) new digester tanks is also shown in Figure 2.

Figure 2 Project Site



FIRM

**FLOOD INSURANCE RATE MAP
MAP INDEX
KANDIYOHI COUNTY, MN
(UNINCORPORATED AREAS)
COMMUNITY NUMBER 270629 B**

River Mile

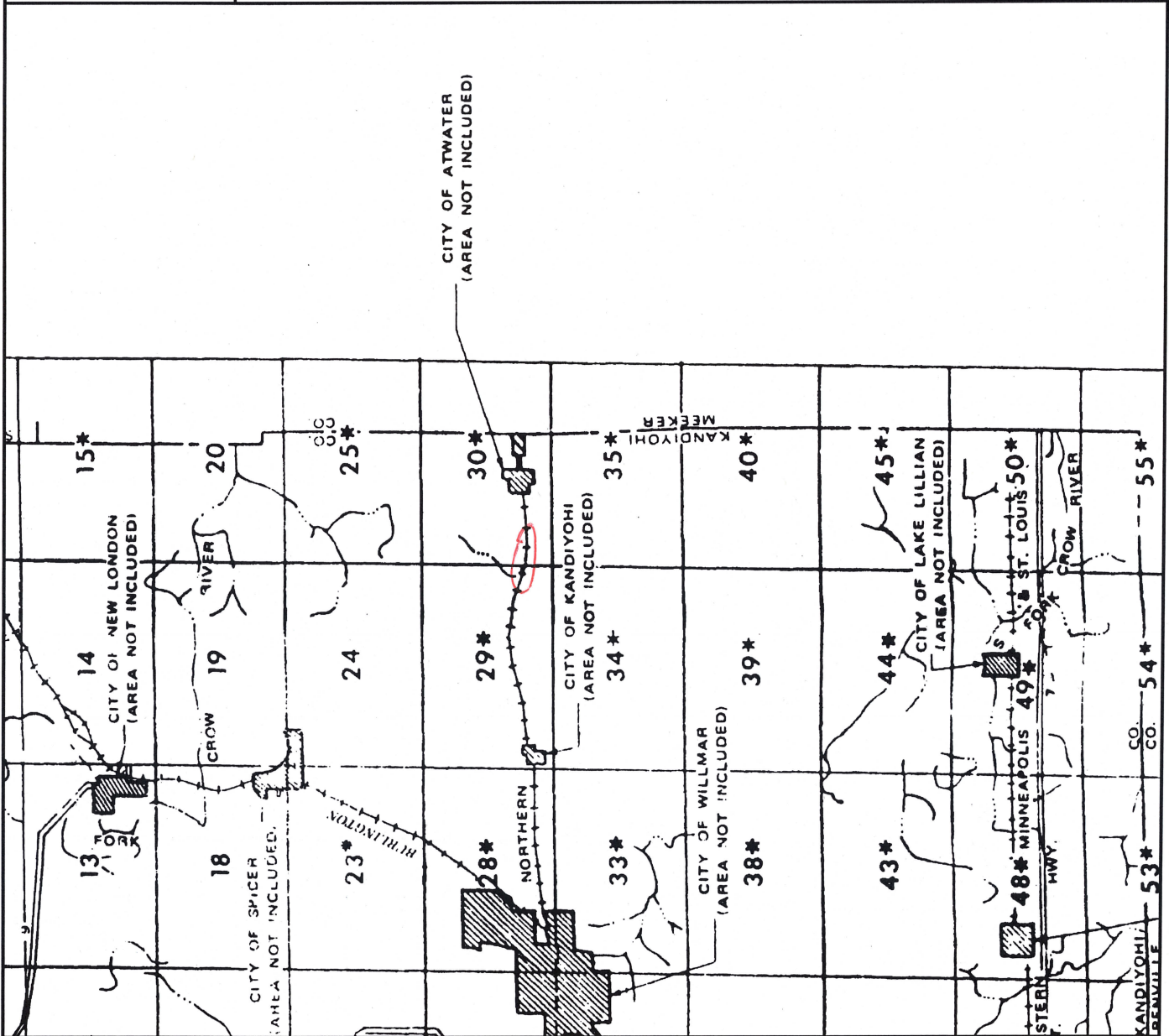
A flood insurance map
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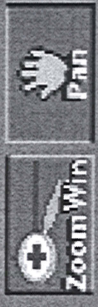
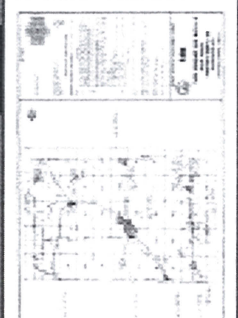
- A** Areas of 10
- AO** Areas of 10
average det
- AH** Areas of 10
base flood
- A1-A30** Areas of 10
- A99** Areas of 10
base flood
- B** Areas betw
100-year fl
drainage ar
flood (Medi
- C** Areas of mi
- D** Areas of un
- V** Areas of 1
flood hazar
- V1-V30** Areas of 1
flood hazar

01-5

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



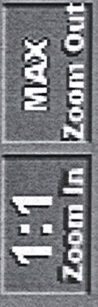
Help



Zoom Win



Zoom In



Zoom Out



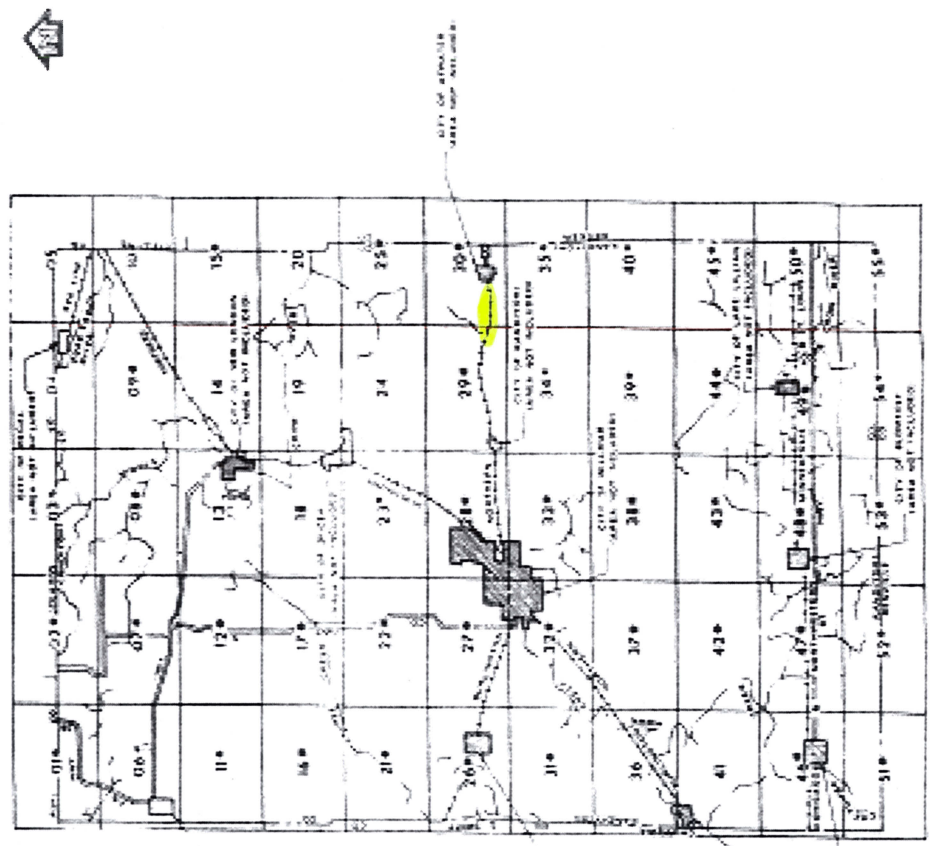
MAX



1:1



Make a FIRM



SEE TO MAP

THE ZONE

Map used for FIRM rate determination is for the FIRM rate determination area only. The FIRM rate determination area is the area shown on the map.

EXPLANATION OF ZONE DESCRIPTIONS

Zone A: Areas of the FIRM that are not included in the FIRM rate determination area.

Zone B: Areas of the FIRM that are included in the FIRM rate determination area.

Zone C: Areas of the FIRM that are not included in the FIRM rate determination area.

ZONE A


Areas of the FIRM that are not included in the FIRM rate determination area.

ZONE B

Areas of the FIRM that are included in the FIRM rate determination area.

ZONE C

Areas of the FIRM that are not included in the FIRM rate determination area.



FIRM

FLOOD INSURANCE RATE MAP 01-55


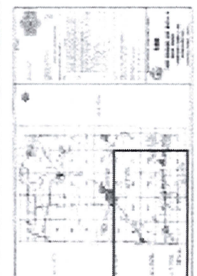
MAP INDEX

KANDIYOHI COUNTY, MN

BRIDGEPORT AREA

COMMUNITY NUMBER 37029 9

Help

Zoom Win

Zoom In

1:1 Zoom In

MAX Zoom Out

Zoom Out

Zoom Out

Make a FIRMette

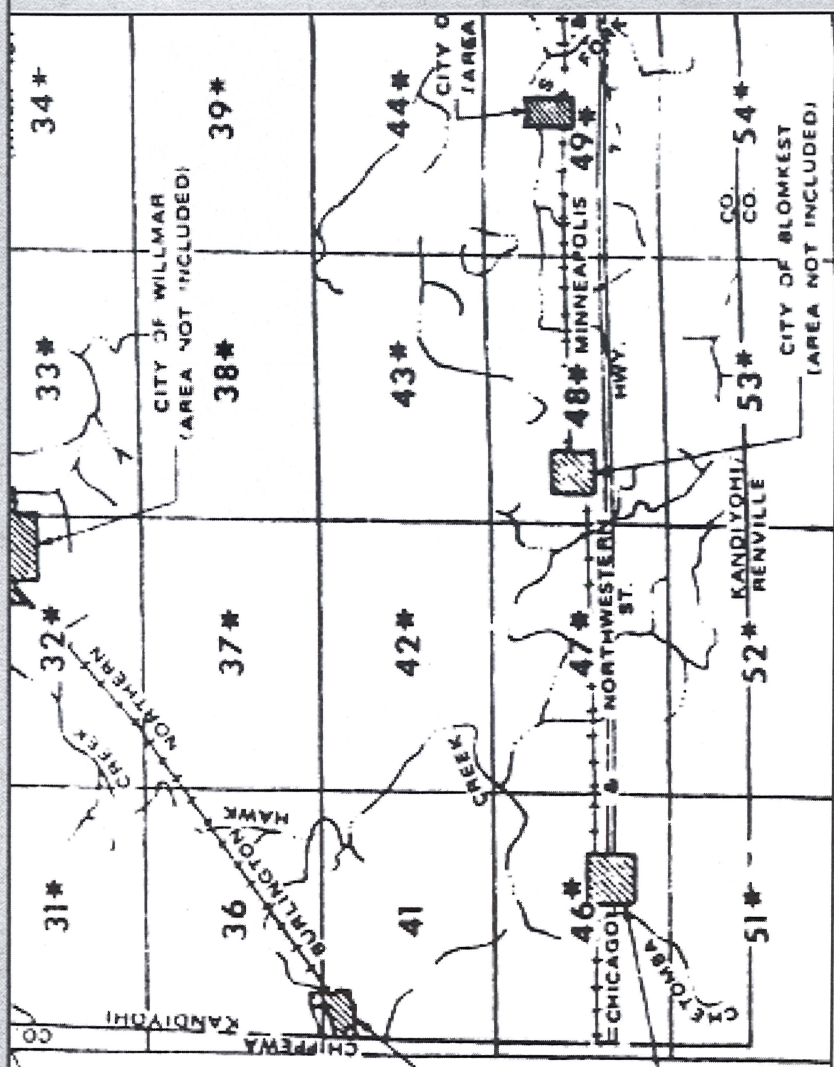
CITY OF PENNOCK (INCLUDED)



CITY OF RAYMOND (AREA NOT INCLUDED)

CITY OF PRINSBURG (AREA NOT INCLUDED)

*PANEL NOT PRINTED - AREA IN ZONE C



REQUEST FOR ENVIRONMENTAL INFORMATION

9004

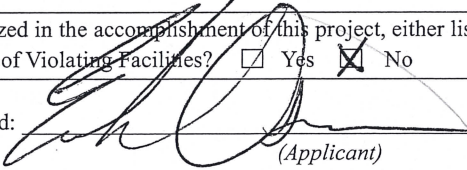
Name of Project	Bushmill = ETHANOL
Location	Atwater, MN

- Item 1a.** Has a Federal, State, or Local Environmental Impact Statement or Analysis been prepared for this project?
 Yes No Copy attached as EXHIBIT I-A.
- 1b.** If "No." provide the information requested in Instructions as EXHIBIT I.
- Item 2.** The State Historic Preservation Officer (SHOP) has been provided a detailed project description and has been requested to submit comments to the appropriate Rural Development Office. Yes No Date description submitted to SHPO _____
- Item 3.** Are any of the following land uses or environmental resources either to be affected by the proposal or located within or adjacent to the project site(s)? (Check appropriate box for every item of the following checklist).

	Yes	No	Unknown		Yes	No	Unknown
1. Industrial	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19. Dunes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Commercial	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20. Estuary	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Residential	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	21. Wetlands	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Agricultural	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22. Floodplain	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Grazing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	23. Wilderness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Mining, Quarrying	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(designated or proposed under the Wilderness Act)			
7. Forests	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	24. Wild or Scenic River	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Recreational	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(proposed or designated under the Wild and Scenic Rivers Act)			
9. Transportation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	25. Historical, Archeological Sites	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. Parks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(Listed on the National Register of Historic Places or which may be eligible for listing)			
11. Hospital	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	26. Critical Habitats	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12. Schools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(endangered /threatened species)			
13. Open spaces	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	27. Wildlife	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14. Aquifer Recharge Area	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	28. Air Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Steep Slopes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	29. Solid Waste Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16. Wildlife Refuge	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	30. Energy Supplies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Shoreline	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	31. Natural Landmark	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
18. Beaches	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(Listed on National Registry of Natural Landmarks)			
				32. Coastal Barrier Resources System	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Item 4. Are any facilities under your ownership, lease, or supervision to be utilized in the accomplishment of this project, either listed or under consideration for listing on the Environmental Protection Agency's List of Violating Facilities? Yes No

9/23/09
(Date)

Signed: 
(Applicant)

GENERAL MANAGER
(Title)

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collections is 0575-0094. The time required to complete this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

EXHIBIT I

This project consists of the installation of a 7,000,000 gallon anaerobic digester tank on the Bushmills Ethanol, Inc. existing site next to the currently installed fermentation tanks. The biogas from the digester will be utilized in the dryer/boiler to offset the use of natural gas. A flare will be installed to flare the biogas when it is not being used in the boiler.

1. Primary Beneficiaries. The primary beneficiary will be Bushmills Ethanol. The environment will also benefit from the reduction in the use of nonrenewable fuels.
2. Area Description. The project will be constructed on the existing 95 acre Bushmills site. An aerial photograph of the site is provided in the Feasibility Study.
3. Air Quality. There will be little or no change in the current air emissions from the Bushmills Ethanol site. The biogas will be scrubbed and burned as a replacement for 35% of the current natural gas consumption.
4. Water Quality. There will be no change in water quality related to this project.
5. Solid Waste Management. There will be no change in solid waste management. The waste solids from the digester will be added to the DDGS.
6. Transportation. There will be no change in the existing transportation patterns for the Bushmills Ethanol site related to this project.
7. Noise. There will be no increase in the noise level related to this project.
8. Historic/Archeological Properties. There will be no impact on any historic or archeological properties.
9. Wildlife and Endangered Species. There will be no impact on any wildlife or endangered species related to this project.
10. Energy. This project will generate renewable energy that will be used at the Bushmills facility to offset the use of natural gas.
11. Construction. All construction will be done in compliance with existing regulations and good practices.
12. Toxic Substances. There will be no toxic substances produced from this project.
13. Public Reaction. There has been no public reaction to this project.
14. Alternatives to the Proposed Project. There have been no alternatives considered having similar benefits.

15. Mitigation Measures. The mitigation measures that will be taken to reduce adverse environmental impacts include a biogas flare that would be used when the burner is down and a biogas scrubber to reduce the sulfur in the exhaust gas from the burner.
 16. Permits. The primary permit that will need to be modified is Air Emission Permit No. 06700061-003. This permit was recently modified to increase the throughput from 49 million gallons per year to 65 million gallons per year.
 17. Other Federal Actions. To the best of our knowledge, there are no other Federal actions.
 18. Environmental Assessment Worksheet. The EAW for this site that was prepared in 2004 is attached.
-

ENVIRONMENTAL ASSESSMENT WORKSHEET

Note to reviewers: The Environmental Assessment Worksheet (EAW) provides information about a project that may have the potential for significant environmental effects. This EAW was prepared by the Minnesota Pollution Control Agency (MPCA), acting as the Responsible Governmental Unit (RGU), to determine whether an Environmental Impact Statement (EIS) should be prepared. The project proposer supplied reasonably accessible data for, but did not complete the final worksheet. Comments on the EAW must be submitted to the MPCA during the 30-day comment period which begins with notice of the availability of the EAW in the *Minnesota Environmental Quality Board (EQB) Monitor*. Comments on the EAW should address the accuracy and completeness of information, potential impacts that are reasonably expected to occur that warrant further investigation, and the need for an EIS. A copy of the EAW may be obtained from the MPCA by calling (651) 296-7398. An electronic version of the completed EAW is available at the MPCA Web site <http://www.pca.state.mn.us/news/eaw/index.html#open-eaw>.

1. **Project Title:** Bushmills Ethanol Plant

2. Proposer: <u>Bushmills Ethanol</u> Contact Person <u>Andy Quinn</u> and Title <u>President of the Board</u> Address <u>P.O. Box 628, West Hwy 12</u> <u>Atwater, MN 56209</u> Phone <u>1-888-BUSHMILL or 320/974-8050</u> Fax <u>320/974-0805</u>	3. RGU: <u>Minnesota Pollution Control Agency</u> Contact Person _____ and Title _____ Address <u>520 Lafayette Road North</u> <u>St. Paul, Minnesota 55155</u> Phone _____ Fax _____
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4. **Reason for EAW Preparation:**
 EIS Mandatory Citizen RGU Proposer
 Scoping EAW Petition Discretion Volunteered
 If EAW or EIS is mandatory give EQB rule category subpart number and name: Minn. R. 4410.4300

5. **Project Location:** County Kandiyohi City/Twp Atwater
1/4 1/4 Section 10 Township 119N Range R33W

Tables, Figures, and Appendices attached to the EAW:

- County map showing the general location of the project;
- United States Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable);
- Site plan showing all significant project and natural features.
- Process Flow Diagram

6. **Description:** _____

- a. Provide a project summary of 50 words or less to be published in the *EQB Monitor*.

Bushmills Ethanol (Bushmills) plans to construct a 50 million gallon per year ethanol manufacturing plant. The plant will be located in Atwater, Kandiyohi County, Minnesota. The process employs dry milling techniques and natural fermentation. In addition to fuel grade ethanol, it will produce animal feed in the forms of dried distillers grain and solubles (DDGS), modified wet cake, and/or wet cake.

- b. Give a complete description of the proposed project and related new construction. Attach additional sheets as necessary. Emphasize construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes. Include modifications to existing equipment or industrial processes and significant demolition, removal or remodeling of existing structures. Indicate the timing and duration of construction activities.

Process Description:

Bushmills will construct a dry mill ethanol production process in Kandiyohi County, consisting of four basic steps, which are described as follows:

Starch Conversion. This process breaks down all starch available in the corn, converting it to sugar. Milled corn is blended with water backset (re-used process water) and alpha-amylase enzyme. Steam is injected into the mash flow to cook and sterilize the mash. The mash is then diluted and cooled for fermentation. Starch conversion is a continuous flow process.

The plant will process approximately 17.86 million bushels (approximately 500,000 tons) of grain (corn) per year.

Batch Fermentation. Fermentation involves the conversion of sugars (dextrins) in the mash to ethanol. The process begins by adding yeast and gluco-amylase enzyme to the mash and transferring it to one of several fermentation tanks. The enzyme breaks the dextrins down into glucose, a simple sugar, which is converted by the yeast to ethanol and carbon dioxide (CO₂). The CO₂ flows to a scrubber, which captures the entrained ethanol and then is vented to the atmosphere. After approximately 48 hours, all sugars are consumed and the entire contents of the fermenter are pumped to the beerwell. The ethanol concentration at this stage is between 11 and 14 percent by volume. The empty fermentation tank is then rinsed and cleaned for the next batch.

The proposed facility will use three fermentation vessels of 730,000-gallon capacity each and one 985,000-gallon beerwell.

Distillation/Dehydration. In this process, the ethanol is separated from the beer and purified to 200-proof (anhydrous ethanol). Beer is pumped continuously from the beerwell to the top of the stripper column. Steam is injected at the bottom of the stripper and ethanol travels up the column as a vapor. Water and remaining corn solids travel down and out of the stripper as a liquid. The ethanol vaporizes and reaches 186-proof at the top of the stripper. The 186-proof ethanol is pumped through a vaporizer/superheater and the resulting vapor flows through molecular sieve beds. The sieve material in the bed absorbs the remainder of the water and 200-proof ethanol vapor flows out of the bottom. The 200-proof ethanol is condensed and pumped through a cooler to a storage tank. The flow of 186-proof alternates from one bed to the other every eight minutes. The bed not in use is regenerated by a vacuum process. The product resulting from regeneration is 130-proof ethanol, which is condensed and pumped back to the rectifying section of the stripper column. The project would include a beer stripper, side stripper, molecular sieve bed, and one rectifier column.

By-product Processing. Stillage, a by-product of distillation, consists of the remaining solids and water coming off the bottom of the stripper column. The stillage is dried for storage and shipping. The stillage is centrifuged to yield thin stillage and solids fractions. The thin stillage becomes backset water for the cooking (starch conversion) system and fed to the evaporator. The evaporator removes water from the thin stillage to create a 32 percent dry matter syrup. Syrup is pumped to the mixing auger to be combined with the wet distillers grains (solids coming off the centrifuge). The mixture is conveyed into drum dryers. The particle emissions are controlled by cyclone separators. Fifty percent of the exhaust is recycled to the dryer inlet and the balance is vented to the atmosphere. The resulting DDGS exits the cyclone via an air lock divided by two screw conveyors. The first recycles two-thirds to three-fourths of the product back to the mixing auger and the second conveys the remainder to storage. Two multiple cyclone dryers and a thermal oxidizer/heat recovery boiler will be used at the facility. The dryers and thermal oxidizer/heat recovery boiler will exhaust into a common stack 72 inches in diameter and 125 feet above grade. A cooling cyclone will be installed. The cooling cyclone will discharge through a 48-inch diameter stack 50 feet above grade.

Additional Facilities Proposed:

◆ **Boilers:** A 125 million British Thermal Unit (BTU) per hour gas-fired thermal oxidizer/heat recovery boiler will provide steam for cooking, distilling, evaporating, and other plant uses.

◆ **Wastewater Treatment:** All process water used in producing ethanol will be treated and recycled in the plant. An on-site anaerobic bio-system wastewater treatment system allows the facility to recycle process waters and minimize the discharge of waste. No direct contact process wastewater will be discharged to the local POTW or drainage ways.

Cooling tower blowdown, reverse osmosis reject water, water softeners, and/or iron filter backwash will be treated and discharged to either the Middle Fork Crow River via an ag ditch or to a nearby golf course for irrigation. Any non-contact process wastewater discharged will be regulated by the National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Permit Program, which is administered by the MPCA.

◆ **Storage/Corn Processing Facility:** Corn will be received via a dust-controlled dump into metal grain bins. Storage will consist of three 250,000-bushel bins. From these storage bins, corn is moved into a 4,000-bushel surge bin before grinding.

◆ **Hammermills:** The facility will include two hammermills as part of the proposed project. A dust filtration system will be used to serve the mill. The stack diameter is 20 inches and the stack height would be 30 feet above grade. A grain conveyor, a DDGS dump pit/auger and an elevator will be installed as part of the proposed project.

◆ **Storage Tanks:** Five storage tanks, including two 750,000-gallon denatured ethanol storage tanks, a 165,000-gallon 190-proof tank, a 165,000-gallon denaturant tank, a 75,000-gallon denaturant tank, and a 3,000-gallon corrosion inhibitor tank will be located in the facility tank farm. The tank farm will be lined and provide secondary containment structures to protect ground and surface waters in the event of an accidental release. All tanks, except the corrosion inhibitor tank, will have internal floating roofs to control emissions.

◆ **Water Discharges:** All process water is recycled within the ethanol manufacturing process such that no process water whatsoever will be discharged from the plant site. Non-contact process water used for the cooling tower and Reverse Osmosis rejected water will be discharged to an irrigation pond and used to irrigate the adjacent Atwater golf course. Under MPCA guidelines, this approach qualifies as a beneficial use of groundwater in comparison to merely "pumping and releasing."

Excess non-contact water will overflow the irrigation pond and flow to Judicial Ditch 17 located 2 miles east of the plant. This agricultural ditch drains northward into ground water recharge and to the Crow River. As with most agricultural ditches, intermittent flow or other physical characteristics along with nutrient laden runoff limit the ability of the water body to maintain a balanced warm water community. Such waters typically only support populations composed of species able to survive and reproduce in a wide range of physical and chemical conditions, and are not generally harvested for human consumption. The proposed water discharge from the ethanol facility generally only contains the constituents of the ground water except in higher concentrations. Nutrients such as nitrogen, nitrates and phosphorous are typically not an issue. The Total Dissolved Solids concentration is mainly comprised of hardness (calcium and magnesium) with minor amounts of sodium, potassium, chloride, sulfate and silica.

◆ Water Intake: At this time, Bushmills has not determined the final location for water intake. We expect that an industrial well will be developed within the limits of the project site. The DNR Division of Waters has been contacted regarding this project. The DNR and their hydrologists will play an integral roll in developing the well testing program when the test well is constructed. It is the intent of the ethanol plant to ensure the continued availability of this valuable resource to current and future users. As such, utilizing the facility discharge to irrigate the adjacent golf course will help by eliminating or significantly reducing ground water being pumped at the golf course.

Summary of Construction Activities:

The following equipment will be used at the new facility:

Equipment	Location
Grain dump pits/augers	Inside
Truck/Rail load out	Outside
Grain bins	Outside
Surge bin	Outside
DDGS dump pit/auger	Outside
Grain Elevators	Outside
Conveyor	Outside
Unloading/Loading baghouse	Outside
Three fermenters	Outside
CO ₂ Fermentation scrubber	Inside
Rectifier Column	Inside
Beerwell	Outside
Beer Stripper	Inside
Side stripper	Inside
Two DDGS dryers	Inside
Thermal Oxidizer/Heat Recovery Boiler	Inside
Cook water tank	Inside
Hammermills	Outside
Hammermill baghouse	Outside
Cooling cyclone with fabric filter	Outside
Methanator	Outside
Molecular Sieve	Inside
Yeast tank	Inside
Slurry tank	Inside
Mixer	Inside

c. Explain the project purpose, if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The purpose of the project is to initiate ethanol manufacturing as well as increase economic development in the Atwater area.

d. Are future stages of this development including development on any outlots planned or likely to happen?

Yes No

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

Bushmills has no plans to expand the facility in the near future.

e. Is this project a subsequent stage of an earlier project? Yes No

If yes, briefly describe the past development, timeline and any past environmental review.

The proposed project site is an agricultural field currently used for crop production.

7. Project Magnitude Data

Total Project Area (acres) 95 acres or Length (miles) Unknown at this time

Number of Residential Units: Unattached NA Attached NA maximum units per building

Commercial/Industrial/Institutional Building Area (gross floor space): total square feet 67,645

Indicate area of specific uses (in square feet):

Office 3,450 Manufacturing 36,450

Retail Not Applicable Other Industrial Energy Center - 1,300

Warehouse Not Applicable Other DDGS Storage - 23,865

Industrial

Light Industrial Not Applicable Institutional Not Applicable

Other Commercial (specify) On-site storage Agricultural Not Applicable

Tanks and cooling tower - 42,200

Building height TO Stack 125' If over 2 stories, compare to heights of nearby buildings

The TO stack (thermal oxidizer/dryer) will be installed at 125 feet above grade. The height of the process

Building will be approximately 45 feet above grade and the maximum tank height about 60 feet above grade.

8. Permits and approvals required. List all known local, state and federal permits, approvals and financial assistance for the project. Include modifications of any existing permits, governmental review of plans, and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure.

Preliminary List

Unit of Government	Type of Application	Status
MPCA	Air Emissions Permit	Submitted
MPCA	NPDES - Direct Discharge	To be submitted
MPCA	Storm Water Permit - Construction	To be submitted
MPCA	AST Permit	To be submitted
State Fire Marshall	AST Permit	To be submitted
DNR	Water Appropriations	To be submitted
MnDOT	Site Entrance/Access Permit	To be submitted
Kandiyohi County/Town of Atwater	Building Permit	To be submitted
Kandiyohi County	On-site Septic System Permit	To be submitted

9. Land use. Describe current and recent past land use and development on the site and on adjacent lands. Discuss project compatibility with adjacent and nearby land uses. Indicate whether any potential conflicts

involve environmental matters. Identify any potential environmental hazards due to past site uses, such as soil contamination or abandoned storage tanks, or proximity to nearby hazardous liquid or gas pipelines.

The Bushmills Ethanol project site is located approximately 1 mile due west of the Town of Atwater in Kandiyohi County, on the south side of Highway 12. The site is currently in agricultural production. According to available information, there have been no other development or land use activities at the site. Further, no known environmental hazards exist at the site due to past site uses. Approximately half the property will remain in agricultural production upon completion of the project.

10. Cover Types. Estimate the acreage of the site with each of the following cover types before and after development:

	Before	After		Before	After
Types 1-8 wetlands	0	0	Lawn/landscaping	0	5
Wooded/forest	0	0	Impervious Surfaces	0	15
Brush/grassland	5	5	Other (describe)	0	25
Cropland	90	45	(manufacturing, office buildings, storage, water control ponds, etc.)		
TOTAL				95	95

11. Fish, Wildlife, and Ecologically Sensitive Resources.

- a. Identify fish and wildlife resources and habitats on or near the site and describe how they would be affected by the project. Describe any measures to be taken to minimize or avoid impacts.

A request to the DNR's Natural Heritage Database will be submitted to determine if any threatened, endangered, or special concern species will be affected as a result of this project. The response will be provided once received.

- b. Are any state (endangered or threatened) species, rare plant communities or other sensitive ecological resources such as native prairie habitat, colonial waterbird nesting colonies or regionally rare plant communities on or near the site? Yes No *Information not available yet (see 11).*
 If yes, describe the resource and how it would be affected by the project. Indicate if a site survey of the resources has been conducted and describe the results. If the DNR Natural Heritage and Nongame Research program has been contacted give the correspondence reference number. _____
 Describe measures to minimize or avoid adverse impacts.

As noted above, the DNR's Natural Heritage Database will be contacted regarding potential sensitive ecological resources at and in the vicinity of the project site. The response will be provided upon receipt.

- 12. Physical Impacts on Water Resources.** Will the project involve the physical or hydrologic alteration (dredging, filling, stream diversion, outfall structure, diking, and impoundment) of any surface waters such as a lake, pond, wetland, stream or drainage ditch? Yes No
 If yes, identify water resource affected. Describe alternatives considered and proposed mitigation measures to minimize impacts. Give the DNR Protected Waters Inventory (PWI) number(s) if the water resources affected are on the PWI.

The general plans for the proposed project include the development of an on-site industrial well to support ethanol manufacturing and ancillary activities (process cooling, emissions control, etc.). In addition, the site will have water discharges associated with non-contact process wastewater as well as storm water discharges. Currently, the project team is pursuing plans to divert non-contact water to a nearby golf course for irrigation to qualify as a beneficial use. Storm water controls will also be provided.

as part of facility construction and operation. However, project planning is very preliminary and therefore no outfalls or drainage paths have been finalized at this time. The DNR Division of Waters has been contacted regarding this project and will be an integral part of project development.

13. **Water Use.** Will the project involve installation or abandonment of any water wells, connection to or changes in any public water supply or appropriation of any ground or surface water (including dewatering)? Yes No
If yes, as applicable, give location and purpose of any new wells, public supply affected, changes to be made, and water quantities to be used; the source, duration, quantity and purpose of any appropriations, and unique well numbers and DNR appropriation permit numbers, if known. Identify any existing and new wells on the site map. If there are no wells known on site, explain methodology used to determine.

Plant process water will be provided by wells not yet drilled. Water use projections are based on the water quality obtained from a City of Atwater supply well. The results of this analysis indicate that a continuous supply of approximately 500 gpm is needed. Review of the Kandiyohi County Comprehensive Local Water Plan – January 2003 thru December 2012 (Water Plan) indicates that ground water resources within the County are plentiful. The two predominant aquifer systems (outwash and bedrock) appear to be capable of yielding 250 gpm or more from a single well. Review of the water level information supplied by the City of Atwater substantiates this by showing relatively little change between static and pumped water levels.

As noted previously, the DNR Division of Waters has been contacted regarding this project. The DNR and their hydrologists will play an integral role in developing the well testing program when the test well is constructed. It is the intent of the ethanol plant to ensure the continued availability of this valuable resource to current and future users. As such, utilizing the facility discharge to irrigate the adjacent golf course will help by eliminating or significantly reducing ground water being pumped at the golf course.

14. **Water-related land use management districts.** Does any part of the project involve a shoreland zoning district, a delineated 100-year flood plain, or a state or federally designated wild or scenic river land use district? Yes No
If yes, identify the district and discuss project compatibility with district land use restrictions.

15. **Water Surface Use.** Will the project change the number or type of watercraft on any water body? Yes No
If yes, indicate the current and projected watercraft usage and discuss any potential overcrowding or conflicts with other uses.

16. **Erosion and Sedimentation.** Give the acreage to be graded or excavated and the cubic yards of soil to be moved: 45 acres; *unk. cubic yards. Describe any steep slopes or highly erodible soils and identify them on the site map. Describe any erosion and sedimentation control measures to be used during and after project construction.

**unk. = unknown at this time, see below.*

The project is still early in the development stages. Although final data is not currently available, general estimates can be provided. It is expected that the total facility footprint will be no greater than 45 acres. As such, soil preparation, including grading, will affect 45 acres. The property is fairly level, and therefore it is not expected that deep excavations will be required. However, storm water controls (retention basins) and other structures will dictate the need for some excavation. Detailed grading plans will be developed and provided as part of development activities. Erosion and sedimentation will be addressed in a site specific Storm Water Pollution Prevention Plan (SWPPP) Associated with Construction. The SWPPP will be prepared in accordance with the NPDES General Storm Water Permit

and will include the BMPs including siltation fencing, check dams, retention basin, and other necessary measures to minimize potential impacts.

17. Water Quality - Surface Water Runoff:

- a. Compare the quantity and quality of site runoff before and after the project. Describe permanent controls to manage or treat runoff. Describe any storm water pollution prevention plans.

Construction Activities:

There are no steep slopes, nor is there Highly Erodible Land on the Bushmills property. The property is currently being used for row crop agriculture, so it is likely that some overland flow and runoff is already occurring. The majority of the site will remain in agricultural production, so runoff from that part of the property will not change significantly as a result of the project.

A storm water retention basin will be constructed as part of the ethanol plant project. In addition, other storm water controls and practices will be installed and in place to help mitigate storm water impacts. The creation of new impervious surfaces on the site is not expected to negatively impact water quality downstream of the property.

NPDES Storm Water Permit Associated with Industrial Activities:

In addition to obtaining a NPDES Storm Water Permit for Construction, the applicant must also obtain NPDES Storm Water Permit Associated with Industrial Activities. The facility will develop and implement a site specific storm-water management plan that includes a site evaluation, description of appropriate BMPs and as well as a self-evaluation, monitoring and reporting plan.

Bushmills will prepare the required Storm Water Pollution Prevention Plan (SW3P) in accordance with applicable regulations. Including identification of sources of possible storm water contamination on the site and implementation and maintenance of BMPs to minimize the potential for contamination. Further, the SW3P will establish schedules and criteria for routine inspections and maintenance.

The facility will be utilized to manufacture ethanol and therefore has the potential to affect storm water quality. Ethanol, natural gasoline, process products, and waste will be located at the ethanol plant. However, much of the facility is enclosed or provides secondary containment to minimize the admixture of industrial products with storm water. The greatest threat to storm water will be associated with material transfers. Other threats may include equipment failures or catastrophic weather events. Spill prevention controls will be installed as part of the initial project to minimize material transfer spills/releases. In addition, special attention will be placed in the SW3P regarding material transfer procedures, including training and inspections.

- b. Identify routes and receiving water bodies for runoff from the site, include major downstream water bodies as well as the immediate receiving waters. Estimate impact runoff on the quality of receiving waters.

As noted, the final facility layout and grading plans are not complete. The site is within the Middle Fork Crow River watershed. Several small waterbodies, including Summit and Pay Lakes are located in the vicinity of the site. The project will be developed to minimize, to the greatest extent practicable, the impacts to receiving waters. Additional information will be provided, as necessary.

The project site is approximately 95 acres in size. About 50 acres will continue in row crop production and the remaining acreage will be used for constructing the ethanol plant, driveways, parking areas, etc. Infiltration of storm water and snowmelt will be somewhat reduced to some

degree as a result of the impervious nature of the facility's infrastructure and paved areas. Although runoff would increase over the grounds of the ethanol plant, it will be captured and directed to the facility storm-water retention basin. The basin will allow solids to settle prior to release.

18. Water Quality – Wastewater.

- a. Describe sources, composition and quantities of all sanitary, municipal and industrial wastewater produced or treated at the site.

Sanitary wastes will be generated within restrooms (sinks and lavatories), kitchens (office and breakroom), and the production QA/QC lab.

Two types of industrial wastewater will be generated at the facility; process and non-contact. The design of the manufacturing plant is a zero process waste discharge. This means that no process wastewater is released. The facility incorporates a bio-methanator to accomplish the recycling of this wastewater within the process.

The other industrial wastewater generated by the site is non-contact process water. Non-contact process water will include cooling tower blowdown, reverse osmosis concentrate, water softener regeneration, and perhaps other filter blowdown (depending on on-site water quality). These discharges will be combined and released as a single flow. Currently, Bushmills is pursuing the option to direct this discharge to a nearby golf course for irrigation. The DNR Division of Waters has been contacted regarding this project and will be an integral part of project development.

- b. Describe waste treatment methods or pollution prevention efforts and give estimates of composition after treatment. Identify receiving waters, including major downstream water bodies, and estimate the discharge impact on the quality of receiving waters. If the project involves on-site sewage systems, discuss the suitability of site conditions for such systems.

The following information is preliminary and will be supplemented as more information becomes available.

Preliminary information indicates that the site will be suitable for the construction and operation of an on-site sanitary sewage system. The system will be designed in accordance with applicable regulations and installed as required under permit. A design capacity of 40 full-time employees has been estimated at this time, however this estimate will likely be refined as the project moves forward from the preliminary stages.

Excess non-contact water will overflow the irrigation pond and flow to Judicial Ditch 17 located 2 miles east of the plant. This agricultural ditch drains northward into ground water recharge and to the Crow River. As with most agricultural ditches, intermittent flow or other physical characteristics along with nutrient laden runoff limit the ability of the water body to maintain a balanced warm water community. Such waters typically only support populations composed of species able to survive and reproduce in a wide range of physical and chemical conditions, and are not generally harvested for human consumption. The proposed water discharge from the ethanol facility generally only contains the constituents of the ground water except in higher concentrations. Nutrients such as nitrogen, nitrates and phosphorous are typically not an issue. The Total Dissolved Solids concentration is mainly comprised of hardness (calcium and magnesium) with minor amounts of sodium, potassium, chloride, sulfate and silica.

- c. If wastes will be discharged into a publicly owned treatment facility, identify the facility, describe any pretreatment provisions and discuss the facility's ability to handle the volume and composition of wastes, identifying any improvements necessary.

Not applicable.

- d. If the project requires disposal of liquid animal manure, describe disposal technique and location and discuss capacity to handle the volume and composition of manure. Identify any improvements necessary. Describe any required setbacks for land disposal systems.

Not applicable.

19. Geologic hazards and soil conditions.

Information not available yet.

- a. Approximate depth (in feet) to Ground water: _____ minimum; _____ average.
Bedrock: _____ minimum; _____ average.
Describe any of the following geologic site hazards to ground water and also identify them on the site map: sinkholes, shallow limestone formations or karst conditions. Describe measures to avoid or minimize environmental problems due to any of these hazards.

The depth to bedrock in Kandiyohi County is at least 200 feet. Preliminary information does not indicate the presence of geologic hazards at the site. However, as the project moves forward on-site soil borings will be obtained to further analyze site conditions.

- b. Describe the soils on the site, giving SCS classifications, if known. Discuss soil granularity and potential for groundwater contamination from wastes or chemicals spread or spilled onto the soils. Discuss any mitigation measures to prevent such contamination.

Site soils are within the Wadenill-Sunburg-Delft Association. Soil texture for the association is a loam and infiltration ranges from good to poor. The common landform setting for soils in this associate is moraines and till plains. Slopes ranges from 2 to 35 percent. According to the Soil Survey of Kandiyohi County, the site contains four soil types: Delft loam, Grovecity loam, Wadenill-Sunburg loams, Sunburg-Wadenill complex, and Canisteo-Harps loams. Additional information will be obtained when soil borings are completed at the site.

The facility incorporates secondary containment throughout. As such, the downward movement of materials is greatly reduced. In addition, the facility must prepare a SW3P Associated with Industrial Activities as well as a Spill, Prevention, Control and Countermeasure plan in accordance with applicable regulations.

20. Solid Wastes, Hazardous Wastes, Storage Tanks.

- a. Describe types, amounts and compositions of solid or hazardous wastes, including solid animal manure, sludge and ash, produced during construction and operation. Identify method and location of disposal. For projects generating municipal solid waste, indicate if there is a source separation plan; describe how the project will be modified for recycling. If hazardous waste is generated, indicate if there is a hazardous waste minimization plan and routine hazardous waste reduction assessments.

During construction temporary office trailer will be located at the site, which will generate mostly paper wastes. It is expected that the constructed facility will generate office waste (paper products,

etc.) from the offices, control room, and lab. There may also be wastes generated as a result of process operations, such as oils, grease, and solvents from maintenance. The facility will collect and dispose of all solid wastes generated at the site in accordance with applicable requirements.

- b. Identify any toxic or hazardous materials to be used or present at the site and identify measures to be used to prevent them from contaminating groundwater. If the use of toxic or hazardous materials will lead to a regulated waste, discharge or emission, discuss any alternatives considered to minimize or eliminate the waste, discharge or emission.

Toxic or hazardous materials at the site that may lead to regulated waste primarily include maintenance items typically found within a shop. Lubricating oils, grease, hydraulic oils, as well as solvents for parts cleaning may be used at the site. The facility will be required to complete appropriate registrations and inventories if toxic or hazardous materials are used or stored at the site, including a Risk Management Plan (RMP) in accordance with 40 CFR 112 (r). In addition, hazardous waste regulations require specific inventories and documentation if thresholds quantities are generated at the site. Bushmills will comply with the applicable regulations.

- c. Indicate the number, location, size and use of any above or below ground tanks to store petroleum products or other materials, except water. Describe any emergency response containment plans.

The following aboveground storage tanks (ASTs) will be constructed at the Bushmills Ethanol plant

Tank	Description/Contents	Construction	Capacity (gallons)
Fermenter #1	Fermenter/beer	carbon steel	730,000
Fermenter #2	Fermenter/beer	carbon steel	730,000
Fermenter #3	Fermenter/beer	carbon steel	730,000
Beerwell	Beer	carbon steel	985,000
Yeast Tank	Yeast	carbon steel	6,000
Slurry Tank	Mash	carbon steel	10,000
190-Proof Tank	190-Proof Ethanol	carbon steel	165,000
200-Proof Tank	200-Proof Ethanol	carbon steel	165,000
Denaturant Tank	Natural Gasoline	carbon steel	75,000
Denatured Ethanol Tank	Denatured Ethanol	carbon steel	750,000
Denatured Ethanol Tank	Denatured Ethanol	carbon steel	750,000
Corrosion Inhibitor Tank	Corrosion Inhibitor	carbon steel	3,000

All exterior ASTs will be surrounded with a secondary containment structure with the capacity of the entire content of each tank, as well as runoff from a significant 25-year storm. Any underground piping will be designed to prevent leaks and will include a leak detection system. Product transfer areas will be located on impervious surfaces with secondary containment to minimize potential releases.

Storage tanks located within facility buildings will be designed and managed according to AST regulations. As noted previously, the facility will be required to have the appropriate SW3P, SPCC and spill prevention and emergency response plans.

21. **Traffic.** Parking spaces added: 30 Existing spaces (if project involves expansion): NA
 Estimated total average daily traffic generated: 135 Estimated maximum peak hour traffic generated (if known) and its timing: 90% between 8 and 5 pm Provide an estimate of the impact on traffic congestion affected roads and describe any traffic improvements necessary. If the project is within the Twin Cities metropolitan area, discuss its impact on the regional transportation system.

Highway 12 will be the primary transportation route utilized by trucks transporting goods to and from the facility. A MnDOT Entrance permit will be obtained to allow direct facility ingress/egress from Highway 12.

22. **Vehicle-related Air Emissions:** Estimate the effect of the project's traffic generation on air quality, including carbon monoxide levels. Discuss the effect of traffic improvements or other mitigation measures on air quality impacts. Note: If the project involves 500 or more parking spaces, consult *EAW Guidelines* about whether a detailed air quality analysis is needed.

Vehicle-related air emissions will not be significant due to low traffic volumes at the facility and in the surrounding area.

23. **Stationary Source Air Emissions:** Describe the type, sources, quantities and compositions of any emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources. Include any hazardous air pollutants (consult *EAW Guidelines* for a listing), any greenhouse gases (such as carbon dioxide, methane, and nitrous oxides), and ozone-depleting chemicals (chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons or sulfur hexafluoride). Also describe any proposed pollution prevention techniques and proposed air pollution control devices. Describe the impacts on air quality.

This EAW has been prepared in support of an air application for construction of the ethanol plant. All aspects of this item are contained within the air application. A summary is provided below, for complete documentation please refer to the Bushmills air permit application.

Grain Receiving and Handling. Grain will be received via truck and/or rail cars. The grain would then be transferred through an outside conveyor/elevator/storage bin system to a surge bin from which metered amounts of grain are discharged into a hammermill system. Fugitive particulate emissions from the unloading building, conveyors, elevators, and bins are exhausted through a negative pressure ventilation system, which continuously pulls air from these sources through a baghouse.

Grain Milling and Handling. Grain from the surge bin is fed to a hammermill located outside. A blower is used to force the milled grain from the hammermill into a cyclone that discharges into the blender. The blender mixes the milled grain with water to start the ethanol production process. The air exiting the top of the cyclone is routed into a baghouse.

Batch Fermentation. Fermentation of sugar produces ethanol and also Carbon Dioxide (CO₂) as a major by-product. Fermentation occurs in three batch fermentation tanks. The vents of the fermenters, as well as the vents from other atmospheric vessels in the fermentation and mash cooling areas, are all tied into the inlet of one direct contact water scrubber. The gas coming off the fermenters and other vessels flows up through a bed of nylon packing. Water flows down through the bed. A continuous blow-down of this water flows back into the process stream. CO₂ and other non-condensing gases leaving the scrubber are vented to the atmosphere.

Distillation/Dehydration. The beer resulting from the fermentation runs through a continuous vacuum distillation system to remove and rectify the ethanol. The vapor outlet of the distillation column is piped directly to a set of condensers that discharge liquid ethanol to the 190-proof reservoir. Any CO₂ and other non-condensable gases, which are contained in the beer, end up in the 190-proof reservoir and must be expelled to maintain a vacuum in the system. The gases are exhausted to a thermal oxidizer prior to venting to the atmosphere.

Dried Distillers Grain Drying and Handling. Distillers grain is dried in a rotary dryer system in which wet material is moved pneumatically through the dryer. The current system features recycling of 50

percent of the exhaust gases to the dryer inlet to partially replace the air input and to recover energy. This process results in an inlet air temperature of 200 to 300 degrees F lower than a standard high-excess air dryer system. The forced air and solids exiting the dryer are conveyed to cyclones used to separate the dried grain. Exhaust gases not recycled to the dryer inlet are vented. Dried distillers grain is loaded into trucks in the same building and uses the same system as grain receiving and handling.

Ethanol Storage Tanks. The product is pumped daily from the 165,000-gallon 190-proof tank to the 165,000-gallon 200-proof shift tank. Each time ethanol is transferred from shift to storage, a smaller amount of unleaded or natural gasoline is pumped from a 100,000-gallon denaturant storage tank to the 750,000-gallon denatured ethanol storage tank involved. This amount is equal to five percent of the amount of ethanol transferred. All storage tanks will be located above ground in a lined secondary containment area. Each tank has a fire valve, a level gauge, overfill protection, an emergency vent, and a pressure vacuum vent. Product is bottom loaded into tanker trucks and rail cars. Volatile Organic Compounds (VOCs) emissions from these tanks are included in the facility emission total.

Thermal Oxidizer/ Heat Recovery Boiler. The proposed site would also have a natural gas-fired thermal oxidizer/heat recovery boiler with a maximum fuel consumption rate of 125 million BTU/hour at the facility. Combustion gases from the thermal oxidizer would be vented to the heat recovery boiler. Thermal Oxidizers are state-of-the-art pollution control equipment that can be used to control air emissions and are effective at reducing odors emitted from ethanol production processes.

Fugitive & Miscellaneous Emissions. Potential fugitive emissions have been considered for all applicable processes, including but not limited to grain handling and milling, feed transfers, piping components, and on-site roads. Additional emissions (summarized here as miscellaneous) have also been quantified in the air permit application package. Such emissions include the cooling tower, emergency fire water pump, and industrial flares.

Air Emissions from the Facility:

As noted, an analysis of the potential emissions of air pollutants has been performed in conjunction with Bushmills application for an air permit. Preliminary estimates of air emissions indicate that the plant will be a synthetic minor source with respect to both the prevention of significant deterioration (PSD) and the Title V air permitting process. Bushmills is considered a minor source of air pollution because the plant will *not* emit 100 or more tons per year (TPY) of any Title V air pollutant.

Emissions for criteria air pollutants are predicted to be as follows:

Total Potential Facility Emissions

Pollutant	Proposed Emissions (TPY)
Total Particulate Matter (PM)	39.14
Particulate Matter less than ten microns (PM ₁₀)	27.10
Sulfur Dioxide (SO ₂)	37.14
Nitrogen Oxides (NO _x)	91.39
Carbon Monoxide (CO)	95.08
Volatile Organic Compounds (VOCs)	93.58
Hazardous Air Pollutants	12.53

Bushmills has applied for an air emissions permit with the MPCA. The air emission permit for the facility will contain specific operational and performance standards for each emissions unit.

In addition to the above, a screening model was completed to determine potential health risks associated with the project. The screening was completed with the use of the MPCA AERA Risk Analysis

Screening Spreadsheet (RASS). Conservative estimates of emissions were utilized in the RASS. Based on the predictions of the screening model, additional modeling will not be required and that no ceiling values were exceeded.

24. **Odors, noise and dust.** Will the project generate odors, noise or dust during construction or during operation? Yes No

If yes, describe sources, characteristics, duration, quantities or intensity and any proposed measures to mitigate adverse impacts. Also identify locations of nearby sensitive receptors and estimate impacts on them. Discuss potential impacts on human health or quality of life. (Note: fugitive dust generated by operations may be discussed at item 23 instead of here.)

Odors:

Fermentation tanks and DDGS dryers are typically the main generators of odor problems at ethanol facilities. Bushmills is proposing to use a thermal oxidizer/heat recovery boiler to control odors from the facility. The proposed thermal oxidizer will destroy approximately 97 percent of the organic compounds believed to cause odors from the facility. With this level of control, it is expected that potential impacts will be limited to the areas immediately surrounding the facility.

Fugitive odors from the site (such as process buildings) can be greatest in the summer, when housing doors may be open. Currently, thermal oxidization and scrubbing is a state-of-the-art technology used to control odors at ethanol facilities. In addition, Bushmills has developed an Odor Action Plan to immediately implement corrective action in the event a single odor complaint is received and validated.

Noise:

Noise levels at existing ethanol facilities in Minnesota have been reviewed. Drawing on that information, the applicant has determined that no noise source at the facility is expected to exceed 80 decibels at the property line, which will comply with the State noise standard. Additionally, the distance between the Bushmills property line and neighboring homes will also provide additional buffer to further dissipate noise levels further. No significant impacts to the areas immediately surrounding the facility are anticipated.

Some additional noise will be generated by increased truck traffic to and from the facility once constructed and in operation.

In the shorter term, there may be an increase in noise generated by construction equipment. Heavy equipment will be operated during daylight hours for the duration of the project. However, given the distance between the new facility and nearby residents, noise impacts are expected to be minimal as well as temporary in nature.

Dust:

Dust will be generated during the construction process. However, impacts are expected to be minimal since the project area is relatively small (compared to nearby agricultural areas). In addition, construction activities will be temporary. Construction related dust will be managed as necessary through the use of water trucks. Once the facility is constructed, dust is expected to return to pre-construction levels.

25. **Nearby resources.** Are any of the following resources on or in proximity to the site?

- a. Archaeological, historical, or architectural resources? Yes No *See below*
- b. Prime or unique farmlands or land within an agricultural preserve? Yes No *See below*
- c. Designated parks, recreation areas, or trails? Yes No *See below*
- d. Scenic views and vistas? Yes No *See below*

e. Other unique resources? Yes No

See below

If yes, describe the resource and identify any project-related impacts on the resources. Describe any measures to minimize or avoid adverse impacts.

- a. A request will be provided to the Minnesota Historical Society regarding the presence of archaeological or historical resources. Preliminary information indicates there are Indian Burial grounds located to the south of the site (not on site). Since the site is vacant and utilized as cropland, no architectural resources are known to be located within the boundaries of the site.
- b. The site is considered prime farmland of which 45 acres will be developed; the remaining 50 acres will remain agricultural.
- c. Preliminary information indicates there are no designated parks, recreation areas, or trails nearby.
- d. Preliminary information indicates there are no designated scenic views or vistas in the vicinity.
- e. Preliminary information indicates there is a designated waterfowl production area, additional information has been requested from DNR.

26. **Visual impacts.** Will the project create adverse visual impacts during construction or operation? Such as glare from intense lights, lights visible in wilderness areas and large visible plumes from cooling towers or exhaust stacks? Yes No

If yes, explain.

Exhaust from the TO stack (combined thermal oxidizer and dryers) will be emitted from a 125 foot stack. As such, the water vapor plume will be visible, depending on weather conditions, from greater distances than if the stack were shorter. However, higher stacks improve dispersion and will reduce emissions and odor potentials at the facility. In addition to the TO stack, a cooling tower will also be present at the site. At times, the condensed water vapor from the cooling tower will be visible in the vicinity of the site. However, this stack will be about 30 feet above grade.

27. **Compatibility with plans and land use regulations.** Is the project subject to an adopted local comprehensive plan, land use plan or regulation, or other applicable land use, water, or resource management plan of a local, regional, state or federal agency? Yes No

If yes, describe the plan, discuss its compatibility with the project and explain how any conflicts will be resolved. If no, explain.

28. **Impact on infrastructure and public services.** Will new or expanded utilities, roads, other infrastructure or public services be required to serve the project? Yes No

If yes, describe the new or additional infrastructure or services needed. (Note: any infrastructure that is a connected action with respect to the project must be assessed in the EAW; see *EAW Guidelines* for details.)

Electric and natural gas utilities would need to be expanded to allow for service in this undeveloped area. In addition, the existing township roads may require upgrading if they are deemed inadequate for truck traffic.

29. **Cumulative impacts.** Minn. R. 4410.1700, subp. 7, item B requires that the RGU consider the "cumulative potential effects of related or anticipated future projects" when determining the need for an environmental impact statement. Identify any past, present or reasonably foreseeable future projects that may interact with the project described in this EAW in such a way as to cause cumulative impacts. Describe the nature of the cumulative impacts and summarize any other available information relevant to

determining whether there is potential for significant environmental effects due to cumulative impacts (or discuss each cumulative impact under appropriate item(s) elsewhere on this form)

At this time, there are no other projects related to the construction or operation of this facility.

30. Other Potential Environmental Impacts. If the project may cause any adverse environmental impacts not addressed by items 1 to 28, identify and discuss them here, along with any proposed mitigation.

At this time, there are no other environmental impacts to address.

31. Summary of issues. List any impacts and issues identified above that may require further investigation before the project is begun. Discuss any alternatives or mitigative measures that have been or may be considered for these impacts and issues, including those that have been or may be ordered as permit conditions.

As noted, the information provided within this EAW is preliminary. As such, there are some issues noted above that will require additional information prior to the initiation of construction activities, including but not limited to, NPDES discharges, SWPPP development and completion, and water intake development.

RGU CERTIFICATION.

I hereby certify that:

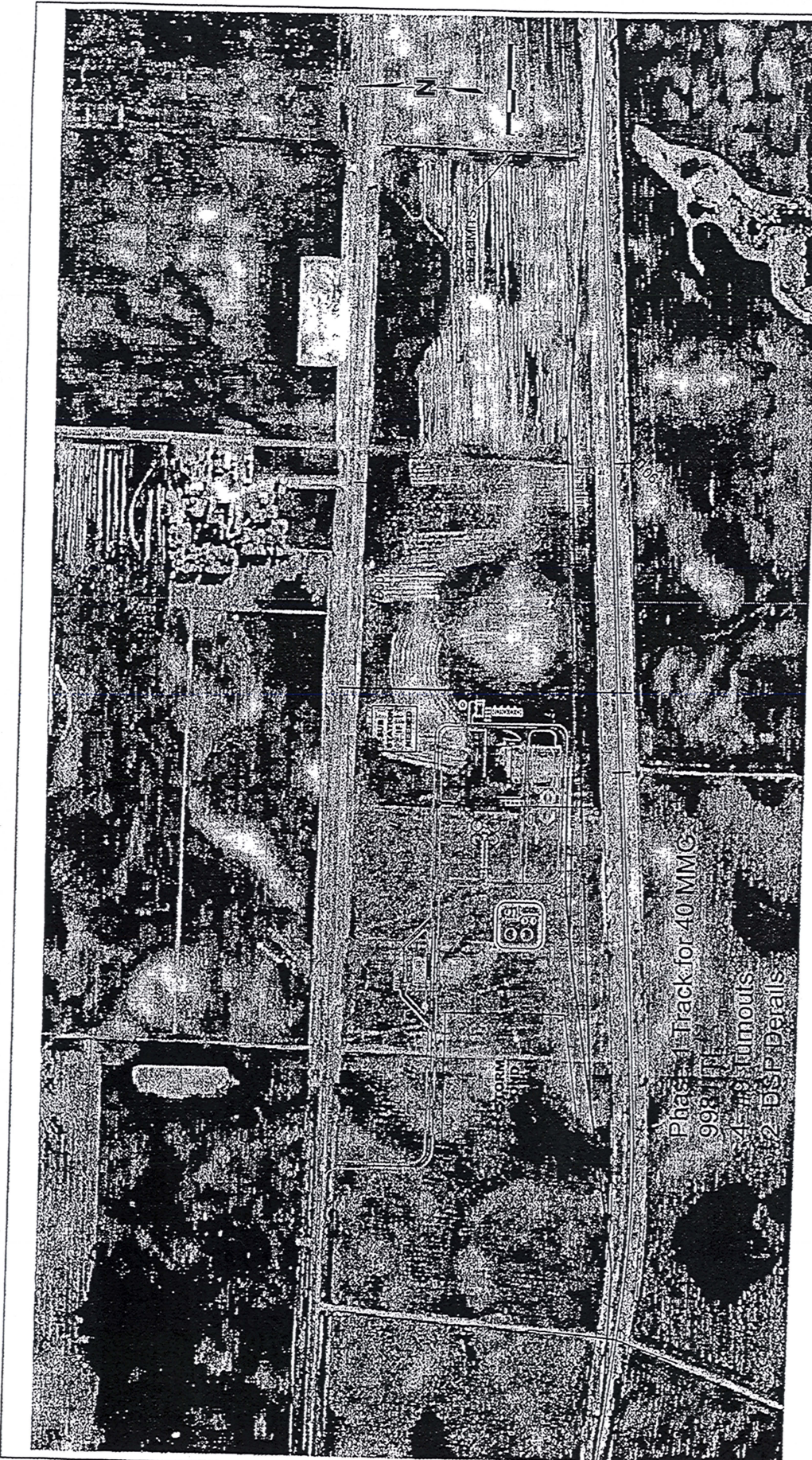
- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minn. R. 4410.0200, subps. 9b and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Name and Title of Signer:

**Beth G. Lockwood, Supervisor, Environmental Review Unit
Operations and Environmental Review Section
Regional Environmental Management Division**

Date:

The format of the Environmental Assessment Worksheet was prepared by the staff of the Environmental Quality Board at Minnesota Planning. For additional information, worksheets or for *EAW Guidelines*, contact: Environmental Quality Board, 658 Cedar St., St. Paul, MN 55155, 651-296-8253, or at their Web site <http://www.mnplan.state.mn.us>.



Phase 1 Track for 40' MMC
 99' RT
 4' - 8' Turnouts
 2' BSP Details

PRELIMINARY-FOR PERMITTING ONLY
 27 FEB 04

<small>THIS DRAWING IS THE PROPERTY OF ANTIOCH ENGINEERING, INC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. ANY REUSE OR MODIFICATION OF THIS DRAWING WITHOUT THE WRITTEN CONSENT OF ANTIOCH ENGINEERING, INC. IS STRICTLY PROHIBITED. ANTIOCH ENGINEERING, INC. IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THIS DRAWING.</small>		<small>PROJECT</small> Spur Track for Ethanol Plant <small>DATE</small> 27 FEB 04 <small>SCALE</small> 1" = 40'		<small>CLIENT</small> BUSHMILLS ETHANOL ATWATER, MN <small>CONTACT</small> 1 <small>PHONE</small> 612-234-2217	
<small>DESIGNER</small> ANTIOCH <small>DATE</small> 2/25/04 <small>SCALE</small> 1" = 40'		<small>PROJECT NO.</small> 04-001 <small>DATE</small> 2/25/04 <small>SCALE</small> 1" = 40'		<small>PROJECT NO.</small> 04-001 <small>DATE</small> 2/25/04 <small>SCALE</small> 1" = 40'	
<small>DATE</small> 2/25/04 <small>SCALE</small> 1" = 40'		<small>DESCRIPTION</small> CONCEPTUAL LAYOUT CONCEPTUAL LAYOUT CONCEPTUAL LAYOUT		<small>DATE</small> 2/25/04 <small>SCALE</small> 1" = 40'	

MEMORANDUM

TO: Bill Roddy, ICM, Inc.

FROM: Jessica Bailey, Air Resource Specialists, Inc.

SUBJECT: AERA – Risk Analysis Screening Spreadsheet (RASS) for the Proposed
Bushmills Ethanol Plant Site, Minnesota

DATE: February 29, 2004

Bill:

As you know, I have been working to complete certain activities associated with the proposed Bushmills Ethanol Plant site. I have completed the AERA Risk Analysis Screening Spreadsheet (RASS) as you requested. It is my understanding that the RASS must be submitted in conjunction with the air permit application you have prepared.

I have utilized the air emission calculations developed for the plant site. However, I have also introduced some conservative assumptions to offer the agency a worst-case approach and provide the project with the greatest flexibility. The methodology and assumptions are summarized in the following text.

As you know, the RASS is available at the Minnesota Pollution Control Agency (MPCA) website. It is a downloadable tool that allows one to estimate potential project impacts. The emissions data developed for the project was input to determine if additional modeling will be necessary. At this time, it appears that no additional modeling will be required (see RASS Summary Tab). Of course, the final decision is in the hands of the MPCA. When you review the data, please note that input values start with Stack #2 (see RASS Emissions Tab). This is due to the fact that the spreadsheet did not allow an automatic lookup for dispersion factors for Stack #1. Nine (9) stacks were included in the RASS for screening purposes and are listed in the following table.

Stack ID.	Stack Description	Height (m)	Annual Operating Hours
Stack #1	<i>Skipped entry</i>		
Stack #2	Unloading Baghouse	9.144	3017
Stack #3	Milling Baghouse	9.144	3017
Stack #4	Type II Cooling Cyclone	15.24	8472
Stack #5	Fermentation (CO2) Scrubber	13.716	8472
Stack #6	Dryer Stack (TO2 and Dryers)	38.1	8472
Stack #7	Loadout Flare	10.9728	69.44
Stack #8	Biomethanator Flare	3.3528	8760
Stack #9	Diesel IC Engine	2.4384	500
Stack #10	Cooling Tower	8.5344	8760

The annual operating hours for each stack were developed to obtain conservative hourly emission estimates. Stacks 2 and 3 are associated with grain receiving. As such, it was assumed that each operate 10 hours per day, 6 days a week, 52 weeks per year or 3,120 hours. Hourly operations were further adjusted to include expected facility operations at 353 days per year, which is approximately 96.7% of a full year. As such, the total annual operating hours was input as 3,017 for both Stacks 2 and 3. Stacks 4 through 6 utilize the total, expected annual operations of 8,472 hours, which is based on 353 days per year. Stacks 7 and 9 are based on the estimated hours of operation noted in the emissions calculations, 69.44 hours and 500 respectively. Stacks 8 and 10 are assumed to operate 24 hours a day, 365 days per year regardless of turnarounds or facility shutdowns.

As noted, these estimates were developed to maintain conservatism with respect to the worst-case hourly emissions. This is accomplished since the emissions are not evenly annualized by dividing by 8,760 hours. Further conservatism is introduced because the annual emissions are based on 8,760 hours of operation. In addition to the above, the RASS requests the distance to the nearest receptor or property line. In an effort to maintain project flexibility, since the final site design has not been finalized, I utilized 100 feet or 30.48 meters for all stacks. Additionally, the cooling tower information was input as a single stack, which will result in higher emissions than if four (4) separate stacks were utilized.

If you should have any questions or would like to discuss these matters further, please let me know. As you know, I can be reached during the day on either at 631/682-7885 or by e-mail at jbailey@air-resource.com. If you prefer you can contact me in the evenings at my home office at 631/698-0097.

Thank you,

Jessica

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2/29/2004
0
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Bushmills Corn Cooperative
Atwater, Minnesota
0

Screening Date:
 AQ Facility ID No.:
 AQ File No.:
 Facility Name:
 Facility Location:
 User Title:

Criteria Pollutant Screen					
Chemical	Fraction of 1 hr std	Fraction of 3-hr std	Fraction of 24 hr std	Fraction of qtrly std	Fraction of annual std
SO2	1.903	1.415	1.692		0.702
PM10			7.699		1.535
PM2.5			0.000		0.000
NOX					1.379
CO	0.252				
Pb				0.000	

Air Toxics Screen									
Total Inhalation Screening Hazard Indices and Cancer Risks			Total Indirect Pathway Screening Hazard Indices and Cancer Risks				Total Multipathway Screening Hazard Indices and Cancer Risks		
Acute	Subchronic Noncancer	Chronic Noncancer	Farmer Noncancer	Farmer Cancer	Resident Noncancer	Resident Cancer	Farmer Noncancer	Farmer Cancer	Resident Cancer
2.2E+02	1.3E+01	8.5E+01	7.1E-04	1.2E-04	0.0E+00	3.6E+06	8.5E+01	2.4E-04	8.5E+01
									1.2E-04

No. of screens allowed on this page

Screening Date:	2/29/2004
AQ Facility ID No.:	0
AQ File No.:	0
Facility Name:	Bushmills Corn Cooperative
Facility Location:	Atwater, Minnesota
User Title:	0

Fraction of VOCs assessed	0.148
Fraction of HAPs assessed	1.002

Total Criteria Pollutant Emissions (tpy)	247.459
Total HAP Emissions (tpy)	11.510
Total VOC Emissions (tpy)	77.748

	Ceiling Values Exceeded?
Benzene	no
Carbon disulfide	no
Cellosolve Acetate	no
Chloroform	no
2-ethoxyethanol	no
Ethylbenzene	no
Ethyl chloride	no
2-methoxyethanol	no
Trichloroethylene	no
Arsenic	no
Carbon tetrachloride	no
Mercury	no
Propylene oxide	no