

ENVIRONMENTAL ANALYSIS AND DECISION ON THE NEED FOR AN ENVIRONMENTAL IMPACT STATEMENT (EIS)

Department of Natural Resources (DNR)

Form 1600-1 Rev. 3-87	Region or Bureau South Central Region
	Type List Designation II

NOTE TO REVIEWERS: This document is a DNR environmental analysis that evaluates probable environmental effects and decides on the need for an EIS. The attached analysis includes a description of the proposal and the affected environment. The DNR has re	Contact Person: Russ Anderson
viewed the attachments and, upon certification, accepts responsibility for their scope and content to fulfill requirements in s. NR 150.22, Wis. Adm. Code. Your comments should address completeness, accuracy or the EIS decision. For your comments to be	
considered, they must be received by the contact person before 4:30 p.m., <u>October 14</u> , 2003.	
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Applicant: United Wisconsin Grain Producers, LLC

Address: P.O. Box 247 Friesland, WI 53935

Title of Proposal: United Wisconsin Grain Producers Ethanol Production Facility

Location: County - Columbia City/Town/Village Town of Randolph, WI

Township Range Section (s) Land located in part of the NW 1/4 section 27, T13N, R12E (Randolph Township) in Columbia County, Wisconsin

PROJECT SUMMARY

For purposes of this document, "UWGP" means United Wisconsin Grain Producers, LLC; "Town" means the Town of Randolph; "DNR" means the Wisconsin Department of Natural Resources.

1. General Description (brief overview)

The proposed project site lies in the township of Randolph near the village of Friesland in south central Wisconsin (Columbia County) on the Northeast corner of STH 33 and CTH EF. For location maps see Attachment 3, plat map; Attachment 5, Columbia County map; and the aerial photograph found on Page 14.

United Wisconsin Grain Producers (UWGP) officially organized as a Wisconsin limited liability company (LLC) on November 2, 2001, with the intention of planning, constructing, and operating a corn-based ethanol and feed plant in south central Wisconsin that benefits local investors, farmers and the community. UWGP was formed by a group of Wisconsin farmers and local investors. The group currently has approximately 750 farmer/investors. 212 of the owners live in Columbia County primarily around Randolph/Friesland, 114 of the owners live in Dodge County, 375 owners live in the surrounding counties and 44 owners live outside of Wisconsin.

UWGP intends to process 14.3 million bushels of corn annually and produce 40 million gallons per year of denatured fuel-grade ethanol, 128,574 tons/year of Dried Distillers Grain with Soluble (DDGS) and 120,000 tons/year of Carbon Dioxide. Currently, a 40-mgy plant is operating in Monroe, Wisconsin, a 20-mgy plant began production in July near Utica, WI and another, 15-mgy plant is operating in Stanley, Wisconsin. UWGP will construct this facility on a 115-acre site with rail access, in Columbia County, Wisconsin. The site is not zoned and is currently agricultural land.

From the information proposed in the air pollution control permit application, it is estimated that the facility could have up to the following level of air emissions: 76.2 tons per year (TPY) of particulate matter, 0.7 TPY sulfur dioxide, 97.5 TPY nitrogen oxides, 90.9 TPY volatile organic compounds (VOCs), and 97.3 TPY carbon monoxide. In addition, emissions of any known federal hazardous air pollutants (HAPs) are estimated to be less than 10 TPY for any one HAP, and less than 25 TPY for all HAPs combined. All of these emissions estimates result in the facility being considered a synthetic minor source. Sources of emissions into the air are combustion equipment (boilers and the rotary kiln dryer (Dryer), storage tanks, process vent stacks, cyclone separators (devices for whirling air) and bag filters.

The facility proposes to have eight main air emissions stacks, which does not include other stacks that may be for servicing insignificant emissions sources or miscellaneous ventilation equipment. It is proposed that two of the stacks rise to a height of 36 feet above grade, two are 45 feet, one is 85 feet, and the one dryer stack is 125 feet above grade to achieve greater air dispersion. The stack for the rotary kiln dryer will be 125 feet tall and is the discharge point for emissions from the dryer and boilers. The nitrogen oxides come from the combustion equipment and the VOC's come from the storage tanks and process vents. The PM comes from the bag filters and dryer stack.

Sanitary wastewater discharges are proposed for conveyance to an on-site septic system designed to handle all potable water for the plant. The specific methods for handling proposed discharges of cooling tower blow down and boiler blow down will be a discharge via an on-site swale through approximately one-mile of dug ditch and general drainage way, eventually to areas marked as "North Branch Duck Creek". The discharge is contingent upon meeting DNR effluent standards and/or monitoring requirements, which would be contained in their WPDES discharge permit.

Industrial storm water handling will be one of containment and control. Containment at UWGP's site will occur through the use of dikes, drains and elevated roads. Control at UWGP will come through routine monitoring and testing through flow control valves and sand bagged culverts.

It is anticipated that UWGP will begin grading in October, with plant construction commencing in or around November 2003. Plant start-up is slated for March 2005.

Process Description

The dry mill ethanol production process consists of the basic steps described as follows:

1. Grain Handling & Milling

Whole corn and other products would be delivered to or shipped from the facility either by rail or over the road transportation systems. The whole corn and distillers grain enter and exit the facility through the grain handling section of the plant, which consists of receiving bins, material transfer equipment, conveyors, elevators, storage bins, weigh scales and associated buildings and equipment.

1. 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 to form a mash, which is transferred to a retention vessel to allow time for the water and enzyme to soak into the grain particles. Steam is injected into the flow of mash to raise the temperature and pressure in the vessel to cook and sterilize the mash. The mash is then diluted and cooled for fermentation. Starch conversion is a continuous flow process.

1. Batch Fermentation

Fermentation involves the conversion of sugars (dextrin) in the mash to ethanol. The process begins by adding yeast and gluco-amylase enzyme to the mash and transferring it to a fermentation tank. The enzyme breaks the dextrin down into glucose, a simple sugar, which is converted by the yeast to ethanol and carbon dioxide (CO₂).

The ethanol goes into solution with the mash to make beer. The CO₂ flows to a scrubber that captures the ethanol vapor and is recovered. After approximately 48 hours, all sugars are consumed and the entire contents of the fermenter are pumped to the beer well. The ethanol concentration at this stage is about 12 percent by volume. The empty fermentation tank is then rinsed and cleaned for the next batch.

1. 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 beer well 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 water from the stripper with the ethanol works its way down and out the bottom. The 186 proof ethanol is pumped through a vaporizer/super heater and the resulting vapor flows through one of three molecular sieve beds. The sieve material in the bed adsorbs 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 periodically alternates from one bed to the other. The bed not in use is regenerated by vacuum. The product from regeneration is 130 proof ethanol that is condensed and pumped back to the rectifying section of the stripper column.

1. 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 shipped primarily to cattle feeders. Processing begins with the whole stillage being centrifuged to yield thin stillage and solid fractions. The thin stillage becomes backset water for the cook (starch conversion) system and fed to the evaporator. The evaporator removes the water from the thin stillage to create 38 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 where it is dried. Cyclone separators control the particle emissions. Fifty percent of the exhaust is recycled to the dryer inlet and the balance is vented to the atmosphere. The resulting Distillers Dried Grains with Syrup (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.

2. Purpose and Need (include history and background as appropriate)

The purpose of this project is to produce ethanol for blending into Wisconsin motor fuel supplies.

The agriculture sector will be the primary economic beneficiary of this project because low-value starch in corn will be extracted and sold as ethanol and carbon dioxide. Value added to corn at the local levels is one of the driving factors of this project. The fat and protein from the corn kernel remaining after ethanol production will be sold as a high-value animal feed, primarily to Wisconsin's dairy industry.

Currently, Wisconsin dairies pay transportation costs for similar products to be shipped from other states. Local production of distillers grains will reduce the cost to local users and the net amount of fuel required for that transportation. According to ProExporter Network, an average of 370 million bushels of corn are produced annually in the state, 92 million of which are within a 50-mile radius of Friesland. This corn is currently fed to livestock, processed into corn flour or exported out of state.

According to ProExporter Network, approximately 186 million bushels of corn is exported from Wisconsin annually. UWGP anticipates that the majority of its corn will be purchased from Wisconsin producers. The corn used by UWGP could potentially reduce the export quantity, keeping both the corn and jobs associated with its processing in the state, specifically the Columbia County region.

It is expected that the production of the high-protein co-product Distillers Grain will have an impact on the local livestock sector. UWGP estimates that the market potential for Distillers Grain in Wisconsin is 2.2 million tons per year. Hogs, turkeys and chickens are potential consumers of Distillers Grains although it has been more readily accepted in beef and dairy cattle feed rations of late. The direct competitors to Distillers Grain in the high protein supplement market are corn gluten feed (CGF), dry brewer's grain and mill feeds.

This blending of ethanol is expected to result in a number of environmental benefits. The production of ethanol reduces greenhouse gases by producing energy from field crops instead of hydrocarbons extracted beneath the earth's surface. Energy grown, processed and recycled above the earth's surface does not provide a net increase in greenhouse gas emissions.

The Clean Air Act Amendments of 1990 ("The Act") created the reformulated gasoline program (RFG) to improve air quality by reducing emissions from automobiles in cities across the country that exceed public health standards for smog, also known as ground-level ozone. The Act requires refiners distributing gasoline in the nine severe ozone non-attainment areas to reduce volatile organic compounds (VOC) and toxic emissions by 15% (27% and 20%, respectively, in phase 2 RFG which began January 1, 2000). A key component of this program is the addition of oxygenates such as ethanol and MTBE, which provide clean octane and replace cancer-causing aromatics. Refiners have chosen to use MTBE in approximately 85% of RFG, while ethanol is used in about 11% of RFG, primarily in the greater Chicago/Milwaukee RFG area.

Ethanol provides an alternative to MTBE or Methyl Tertiary Butyl Ether, which has a contaminating effect on water. As a consequence of the growing concerns regarding MTBE water contamination, there is interest in moving to prohibit or significantly reduce MTBE use. A Blue Ribbon Panel formed by the EPA concluded that MTBE use should be "reduced or eliminated." California, Iowa, South Dakota, Arizona and Minnesota have enacted MTBE controls. Many other states and the U.S. Congress are considering legislation to impose MTBE controls.

The advantage of MTBE over ethanol is in controlling the final product's volatility. Neat ethanol has a very low vapor pressure (a measure of the propensity to evaporate). When ethanol is blended into gasoline at usual ratios (five to ten percent), the resulting blend will have an increase in its vapor pressure. In conventional gasoline, this may result in increased evaporative VOC emissions. In the RFG, the increased volatility must be controlled. Controlling ethanol-blended RFG's volatility increases the cost of production slightly.

Ethanol blending is expected to reduce price pressure at the consumer gas pump while reducing carbon monoxide and other tail pipe emissions statewide and in the non-attainment areas of Milwaukee and Chicago.

1. Authorities and Approvals (list local, state and federal permits or approvals required)

Construction and operating environmental permits and approvals needed by UWGP from the DNR include: An air quality permit; a WPDES (Wisconsin Pollutant Discharge Elimination System) permit for cooling tower bleed-off, boiler blow-down and Reverse Osmosis water to a dug ditch on north end of property; a high-capacity well permit; an industrial storm water discharge permit, and storage tank registrations.

The discharge of cooling tower blowdown, boiler blowdown and reverse osmosis waters enter directly to the dug ditch on the

north end of property and would require a WPDES permit(s) to protect Duck Creek water quality and groundwater. A specific WPDES permit issued for discharges to Duck Creek required a 30-day public notice period for public input. An informational hearing was also held on September 11 2003.

Process waste waters will be treated through a "methanator", an anaerobic treatment system and effluent recycled back through the production plant with an intended zero discharge. During times of "methanator" upsets, performance problems or malfunctions that preclude recycling effluent, several days storage tankage for the effluent is planned and if full, the production facility will shut-down. Sludge from the "methanator" will be sold as seed sludge to other facilities. Any sludge intended to be land-spread would require a WPDES permit from the DNR. Sanitary wastes will be sewerred and go to the on-site Septic System.

Construction permits from the State will be required and construction plans, specifications and drawings will be reviewed in advance by the State of Wisconsin. Project engineers from ICM, Inc. and Fagen, Incorporated, have given updated fire safety information to the village of Friesland Fire department. UWGP officials met with the Friesland fire department on April 23, 2003. The purpose of this meeting was one of introduction, knowledge sharing and gaining an understanding of the process for submitting plans for review. All other permits will be based on meeting state and OSHA laws and regulations.

The DNR has advised UWGP that any plant expansion would require issuance of a separate set of permits.

1. Estimated Cost and Funding Source

The estimated cost of this project is \$57.5 million. Forty-five percent of funds are from local investors. 212 of the owners live in Columbia County around Cambria/Friesland 114 of the owners live in Dodge County, 375 owners live in the surrounding counties, and 44 owners live outside of Wisconsin. Over 80% of the owners of the project own or rent farmland. \$500,000 of grants has been applied for from the Department of Transportation and the Commerce Department. Approximately 55% of funds are from commercial banks.

PROPOSED PHYSICAL CHANGES (More fully describe the proposal)

1. Manipulation of Terrestrial Resources (include relevant quantities - sq. ft., cu. yard., etc.)

The UWGP site will be graded and reworked to allow plant construction. Soil from the site will be used. No soil will be imported.

Initial development will require approximately 20 acres of the 115-acre site. The remaining area will be rented out as cropland or used as green space and a landscape buffer area. The rough grading of the site and rail spur construction will require approximately 120,000 cubic yards of topsoil and native soil materials to be excavated and moved to fill areas within the site. A paved, rectangular road around the perimeter of the plant site will service the site.

Landscaping and Plantings

The greenspace and landscape buffer area will be established in upland native vegetation once the site grading is completed. The areas to be planted include the spoil pile greenspace on the far west side of the UWGP property and the southern boundary adjacent to the railroad spur. The planting area covers approximately five acres, the approximate area of disturbed ground that will remain as green space. The planting will include the following species and seeding rates per acre:

- Little Bluestem (*Andropogon scoparius*)-- 3 lbs./acre
- Side Oats Grama (*Bouteloa curtipendula*)-- 2 lbs./acre
- Canada Wild Rye (*Elymus canadensis*)-- 2.5 lbs./acre
- Annual Rye—(*Lolium multiflorum*) 2.5 lbs./acre
- Bergamot (*Monarda fistulosa*)-- 2 oz./acre
- Ox Eye sunflower (*Heliopsis helianthoides*)-- 5 oz./acre

- Yellow Coneflower (*Ratibida pinnata*)-- 3 oz./acre
- Black Eyed Susan (*Rudbeckia hirta*)-- 3 oz./acre
- Purple Prairie Clover (*Petalostemum purpureum*)-- 2 oz./acre

The wetter drainageways will be planted in native vegetation with the following species and seeding rate per acre:

- Big Bluestem (*Andropogon gerardii*)-- 2lbs/acre
- Indiangrass (*Sorghastrum nutans*)-- 2 lbs/acre
- Switchgrass (*Panicum virgatum*)-- 8 oz/acre
- Canada Wild Rye (*Elymus canadensis*)-- 2.5 lbs/acre
- Annual Rye—(*Lolium multiflorum*) 2.5lbs/acre
- Marsh Aster (*Aster simplex*)-- 0.1 oz/acre
- White Wild Indigo (*Baptisia alba*)-- 1.0 oz/acre
- Yellow Cone Flower (*Ratibida pinnata*)-- 0.25 oz/acre
- Black-eyed Susan (*Rudbeckia hirta*)-- 0.1 oz/acre
- Bergamot (*Monarda fistulosa*)-- 0.1 oz/acre
- Round-headed Bush-clover (*Lespedeza capitata*)-- 1.0 oz/acre

1. Manipulation of Aquatic Resources (include relevant quantities - cfs., acre feet, MGD, etc.)

1) Wastewater

Approximately 750 gallons per day (GPD) of domestic sanitary wastewater will be generated and discharged to the on-site septic sanitary sewer system. An estimated 50,400 GPD of reverse osmosis blow down, 108,000 GPD of boiler/cooling tower blow down, equaling 158,400 GPD of cooling tower bleed off is proposed for discharge directly to the dug ditch on the north end of the property.

Any discharge to the dug ditch on the north end of the property will be monitored for flow (GPD) and any water quality testing parameters. It would need to meet appropriate effluent limitations in order to receive the required WPDES permit or permits. The industrial process design is intended for a "zero discharge" of process wastewater (water used for washing and cleaning facility production equipment and areas). No process water will be discharged from the facility to the dug ditch, and the facility will shut down if necessary (see Section 3).

Discharges of cooling tower waters, boiler blow down and reverse osmosis waters would be based on treatment choices and water quality considerations. UWGP is working with water treatment companies that provide typical chemicals used in cooling tower water treatment. Typical industrial cooling tower water treatment chemical Material Safety Data Sheets (MSDS's) give health, environmental and safety information. Below is a list of the type of information that the MSDS's supply and actual MSDS's are provided at the end of this report (see Attachment 7). Water treatment additives that are used will need to meet limits with any WPDES permit limitations and whole effluent toxicity testing requirements.

MSDS Information on Chemical Additives:

- Chemical product and company identification
- Composition- information on ingredients
- Hazard identification
- First Aid measures
- Fire fighting measures
- Accidental release measures
- Handling and storage
- Exposure control - personal protection
- Physical and chemical properties
- Stability and reactivity
- Toxicological information
- Ecological information
- Disposal considerations
- Transport information
- Regulatory information
- Other information

2) Storm water

Storm water runoff quality and quantity are typically affected whenever property is developed. Soil erosion during construction and storm water runoff from buildings, streets, parking lots and other structures after construction have a negative impact on receiving waters by increasing the introduction of pollutants. Additionally, increased impervious areas such as buildings, streets, and parking lots increases runoff rates and the quantity of storm water runoff reaching receiving waters. To address these concerns and lessen the impacts, storm water runoff will be controlled during and after construction.

During site preparation by UWGP, all land disturbing construction activities will be managed in conformance with the erosion control plan prepared in consultation with the DNR. UWGP will remain in compliance with the construction site storm water discharge permit for grading up-slope of the dug ditch. During construction of the UWGP plant, all disturbed soil will be managed properly through the use and maintenance of appropriate erosion control measures, including silt fence, stone ditch checks, aggregate construction entrance of vehicles, and sediment traps. Permanent storm water control measures will be installed and maintained by UWGP, including stone weepers within drainage ways, vegetated drainage ways, an on-site "wet bottom" storm water retention basin, and permanent vegetation or other stabilization of all disturbed areas. Temporary and permanent erosion control and storm water management measures will minimize the discharge of sediment to adjacent properties, public streets, and waterways. The retention basin is designed to provide long-term water quality benefits by intercepting storm water runoff from UWGP site, allowing the capture of sediment and other pollutants before storm water release to the dug ditch. The UWGP site will drain to the retention basin and the basin will safely convey the 100-year statistical storm event for Columbia County for the final build-out area of the 40-acre building site. The surface area of the pond would be 1.56 acres at the high-water mark.

The UWGP plant requires coverage under an industrial storm water discharge permit. The DNR's conferring of coverage under an industrial storm water discharge permit will be contingent upon UWGP conforming to Subchapter II of NR 216, *Industrial Storm Water Discharge Permits*, and adequately addressing potential contamination of storm water runoff from the facility during operation. Storm water contact with manufacturing processes and equipment, raw materials, waste products and by-products, and final products is expected to be minimal. Most activity, equipment, and materials will be contained within enclosed structures and, therefore, not in contact with storm water. All tank farms will be within a dike designed to contain storm water runoff or a spill volume of 1.25 times the largest tank capacity. Additionally, all tank farms have welded-in-place steel roofs and will lie within a protective berm designed to handle spilled product per standards set by the American Society of Testing Materials (ASTM). The bottom of the bermed area will be lined with stone and an impermeable plastic liner. Discharges from the dike area will be regulated via a manually operated valve. All maintenance of equipment will take place in a covered, indoor work area. The DNR is currently working with UWGP on industrial storm water discharge issues.

3) Groundwater

UWGP plans on constructing a high capacity well. The well and reservoir will be constructed and located in accordance with Chapter NR 812, Wisconsin Administrative Code. Chapter NR 812 is the regulatory standard for private and high-capacity wells. Chapter NR 812 contains well construction and pump installation requirements and well setback requirements. Chapter NR 812 requires that a high-capacity well approval be obtained for all wells with a production capacity of 70-gallons per minute (GPM). The approval process assesses the potential impacts to municipal wells and the approval may limit pumping or place other limitations on a high capacity well to prevent adverse impacts to nearby municipal wells.

The well will provide both domestic potable water and process water. If cooling tower and blow down discharge waters (described above) are conveyed to a dug ditch via the retention pond, there is potential for groundwater contamination. It may be necessary to determine to what extent the storm water retention pond is naturally lined. Construction of the pond in the natural clay at the site could meet the NR 213 code requirements and be defined as a sealed lagoon. If there is not enough clay due to additives in the blowdown water, the lagoon will have to be lined to protect groundwater in the area.

Water Regulation

No water regulation permits per Chapter 30 State Statutes permits are required for this site.

1. Buildings, Treatment Units, Roads and Other Structures (include size of facilities, road miles, etc.)

Site development will include the following:

Additional turning lane will be added on CTH EF for plant entrance to facilitate additional vehicular traffic. WisDOT has rescinded all current access to property from STH 33, and has denied any further access to property from STH 33.

A new road will be constructed from CTH EF into UWGP's site. A portion of the road, approximately a mile, will be dedicated to the township for public use.

UWGP may also construct an elevated water tank, approximately 250 thousand gallons, to provide for on-site water usage and also help with fire protection for the village of Friesland and the Town of Randolph.

For the portion of land that UWGP proposes to use:

- A 125-foot high dryer stack.
- A paved rectangular plant site roadway loop (approximately 3,500 feet)
- Seven parallel rail spurs requiring approximately 8,033 lineal feet of track.
- Approximately 50,000 square feet of enclosed structures; 7,500 square feet of storage bins; 25,000 square feet of above ground storage tanks.
- One 30,000-gallon horizontal ammonia storage vessel.
- Supporting structural steel for distillation columns.
- Miscellaneous pipe racks
- Cooling tower.
- Ethanol loading facilities for truck and rail shipments.
- Miscellaneous grain handling equipment including legs, screeners, conveyors and dust control equipment.

******Please refer to Attachments #2 (Site Plan-Overall Plant Layout) for more detail.*

8. Emissions and Discharges (include relevant characteristics and quantities)

The proposed project will result in air emissions. The grain handling and milling, and ethanol manufacturing activities will generate particulate matter (PM) emissions, which can have respiratory effects on humans. The particulate matter emissions from the grain handling and milling operations will be controlled using fabric filter bag-houses. The articulate matter emissions generated in the ethanol manufacturing processes will be controlled using water scrubbers.

The ethanol production and processing will generate volatile organic compounds (VOC), which are precursors in photochemical reactions to form ozone in the lower atmosphere. High levels of ozone can be an irritant to the lungs, especially for the young and old. VOC emissions generated from the ethanol production and processing will be controlled using water scrubbers.

Natural gas combustion in the boilers and the dryer will generate emissions of sulfur dioxide, nitrogen oxides and carbon monoxide. Long range transport of sulfur dioxide and nitrogen oxides emissions have been connected to acid deposition. On a local basis, sulfur dioxide and nitrogen oxides may cause respiratory irritations. Carbon monoxide, at a high concentration, can cause asphyxiation. It is not expected that ambient air standards for these pollutants will be exceeded. Ambient air standards are definitions of the characteristics of ambient air quality which, in terms of present day knowledge, need to be maintained in order to protect the public health and welfare and our environment from adverse effects of air pollution.

Based on the information submitted in the air pollution control construction permit application, the facility total potential to emit, in tons per year (TPY), for these pollutants is estimated to be:

Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	VOC	Carbon Monoxide
76.2 TPY	0.7 TPY	97.5 TPY	90.9 TPY	97.3 TPY

The Clean Air Act regulates any facility with the potential to emit over 100 tons per year of any criteria pollutant as a "major" source. As shown above, the facility does not have the potential to emit more than this threshold, therefore, this facility is regulated as a minor source by the Air Program.

Ethanol itself is not a hazardous pollutant regulated by the federal government. The production of ethanol will generate

by-products that are federal hazardous pollutants (such as acetaldehyde, ethyl acetate, methanol and hexane). However, these pollutants will exist as minor impurities in the ethanol product, and previous tests done at other similar ethanol plants showed that more than 99% of VOC emissions were ethanol. The emissions of any one of these pollutants are expected to be insignificant.

Some of the pollutants identified above may result in odors from the facility. In addition, it is believed that this facility is likely to have some amount of odors associated with it most of the time. However, odors are regulated as a nuisance, not as a health concern,

1) REFUSE AND SOLID WASTE

Refuse will consist of typical office and lunchroom trash, and small amounts of common materials from routine operations and maintenance. As much as possible, the material will be kept separated for recycling. There will be no on site disposal of refuse. All refuse will be transported off site by a licensed vendor for proper disposal.

The facility will generate very little, if any, industrial solid waste. The solid residue from the production process is dried and sold as Distillers Grain. The use of reverse osmosis for well water treatment will eliminate generation of solid waste from water treatment residues. Major raw materials and finished products are handled in bulk. Regarding pollution control systems, the thermal oxidizer produces very little solid residue, the liquid from wet scrubbers is recycled to process, and the material collected in dry material handling baghouses is returned to process. Any solid residue that is generated will be transported off site by a licensed vendor for proper disposal.

The only definitive air-quality related conclusion that can be drawn from the above information is that dispersion of emissions, especially those from a 125-foot dry stack, will occur. The extent to which these emissions will occur will depend upon local meteorological conditions at any given time.

9. Other Changes

There will be a new _ mile road built from County EF into the site. The road will be built by UWGP and then turned over to Randolph Township. The road will be named Tessman Road.

Currently, the Town of Randolph has no local zoning and is not regulated by County zoning. The Town has recently signed on with the County to become Smart Growth compliant. The County anticipates this process will take approximately 4 years.

The following measures are planned to accommodate increased traffic:

- A turning lane will be added to County Road EF from STH 33 to Tessman Road.
- The Tessman road will have a stop sign. By-pass lanes will be added to the west side of County Road EF to facilitate additional traffic.
- Columbia County Highway Department has given the approval for the above mentioned changes. See attachment #11 .
- Seven parallel rail spurs requiring approximately 8,033 lineal feet of track will also be constructed.

Aesthetic change will occur as the site moves from a purely agriculture use to agri-industrial.

10. Identify the maps, plans and other descriptive material attached

Attachment #1	USGS Topographic Map
#2	Site Development Plan – Overall Plant Layout
#3	Plat Map
#4	NRCS County Wetlands Map
#5	County Map
#6	Correspondence from State Historical Society
#7	Material Safety Data Sheets (MSDS)
#8	DNR Watch List Review
#9	DNR Air Dispersion Analysis
#10	Ethanol and the Local Community
#11	Chapter TRANS 233, Wisconsin Administrative Code Letter
#12	Navigability Determination in Section 27, Town of Randolph, Columbia County
#13	Soil Map: Township of Randolph
#14	NHI Review memo
#15	Safety Management Plan

AFFECTED ENVIRONMENT (Describe existing features that may be affected by proposal)

Information Based On (check all that apply):

Literature/correspondence (specify major sources)

Badger State Ethanol, Monroe, WI environmental assessment
Applied Ecological Services, Inc.
Archeological & Consulting Services, Inc.
State Historical Society of Wisconsin
Wisconsin DNR
National Park Service
U.S. Fish & Wildlife Service
U.S. Army Corps of Engineers
Soil Survey of Columbia County, Wisconsin

AUS Consultants and SJH & Company

[X] Personal Contacts (list in item 28)

Field Analysis By: [] Author [X] Other (list in item 28)

Past Experience With Site By: [X] Other (list in item 28)

1. Physical Environment (*topography - soils - water - air*)

1) Air

There are currently no major industries except agriculture operating in the Town of Randolph. However, the county is currently attaining and maintaining all National Ambient Air Quality Standards (NAAQS). NAAQS are definitions of the characteristics of ambient air quality which, in terms of present day knowledge, need to be maintained to protect the health, safety and welfare of individuals and our environment.

2) Water

Surface Waters

The nearest surface water resource is approximately 1 mile from the UWGP site. A dug ditch starts at the northwest corner of the UWGP site and empties into the North Branch of Duck Creek, 1 mile away. Any discharge to the dug ditch on the north end of the property will be monitored for flow (GPD) and any water quality testing parameters. It would need to meet appropriate effluent limitations in order to receive the required WPDES permit or permits.

Groundwater

The nearest municipal wells are Friesland well #1 and Friesland well #2. Both wells are at least 1.3 miles from the proposed high capacity well. The Friesland municipal wells are constructed to obtain water from the sandstone aquifer. The Friesland municipal wells all have a design capacity of between 300 and 800 gallons per minute (GPM) from these formations. There is one high-capacity well located in Section 27 that belongs to Jung Seed Genetics, which is their irrigation well. Based on the preliminary modeling the site will support a high-capacity well in excess of 500 gallons per minute.

3) Scenic/Visual

The UWGP site is located in a low population rural setting on agricultural land. The area is not zoned. 1 mile to the north is the village of Friesland. On the South side of Friesland are many large warehouses. To the south of the site is STH 33. To the west is a farmhouse that is part of the 115-acre site. To the east is the mainline Union Pacific railroad.

4) Topography & Soils

The area can be described as rolling to hilly. In general, elevations are higher in the eastern portion of the project area and decline to the north and west. The soils on the property have been planted to corn. Tree rows and fence lines bordering the property contain no wetland communities. A soils map can be found in Attachment 13.

A series of soil types are found in the project area:

Approximate Percent on Site

Plano Silt Loam (PnB) 2% to 6% slopes

60%

Well drained and moderately well drained silty soil. This soil is formed in 40 to 60 inches of silty sediment and the underlying sandy loam till. This soil is on silt covered till plains.

Joy Silt Loam (JoA) 0% to 4% slopes 15%

This soils is on low terraces bordering basins, in swales within areas of Plano soils, and on valley floors along drainageways.

Plano Silt Loam (PnA) 0% to 2% slopes 4%

Large irregularly shaped areas of this soil are in broad slight depressions in the till plain.

Griswold Silt Loam (GrB2) 6% to 12% slopes, eroded 5%

This soil is commonly in long, somewhat narrow areas on the crests of rises and on recessional moraines on the till plain.

Ossian Silt Loam (OsA) 0% to 3% slopes 10%

Larger areas of this soil are in broad depressions. Smaller areas are on valley floors along drainageways.

Ripon Silt Loam (ReB) 2% to 6% slopes 6%

This soil is in irregularly shaped areas on rises and on crests along ridges on the till plain.

5) Spills

The bulk storage tanks are specially designed with double floors, with sensors between the floors to detect any leaks. There are also “weep holes” as a backup for the sensors, allowing a direct visual check of the integrity of the bottom of the tanks. Finally, the tanks are placed on elevated concrete pads and are located within contained and inspected areas. The probability of an undetected leak is negligible. In addition to the physical design of the facility to prevent the escape of spilled material, various permits and plans are required by regulatory agencies. A Spill Prevention, Control, and Countermeasures (SPCC) plan must be developed for any petroleum products, including the denaturant used at the facility, gasoline. The SPCC plan must be signed by a registered engineer, and must be kept current. Regarding storm water, the facility must develop and submit to the DNR a Storm water Pollution Prevention Plan, which includes every bulk storage tank and every route for potential pollution of storm water. The facility must also obtain from the DNR a Storm water Permit, which addresses routine handling of storm water. In addition to these regulatory requirements, the facility will develop and implement a comprehensive program for periodic inspection of production and bulk storage areas.

1. Biological Environment *(dominant aquatic and terrestrial plant and animal species and habitats including threatened/endangered species; wetland amounts, types and hydraulic value)*

1) Land Cover

The UWGP property land cover is currently corn. Agricultural weeds are found along the ditch and tree lines leading to and from the construction site.

2) Waterways/wetlands

There are no significant water resources near the site. Dan Hunt, Water Management Specialist from the State of Wisconsin Department of Natural Resources visited the site in November of 2002 and determined that the waterway located in the NW _ of Section 27 is located on both sides of a railroad track that separates two parcels of land. This waterway flows west and enters into a much larger ditch in section 28. Dan also determined that the waterway does not have a defined bed and bank nor does it have stream history. He also stated that it appears that this is a grassed swale in an agricultural field. See Attachment #12. Water will eventually discharge through agricultural ditches to Duck Creek, approximately a mile away

A review of the NRCS County Wetlands map, Attachment 4, shows that there are no wetlands associated with the proposed ethanol site.

1. Wildlife

The proposed ethanol plant is located in an area that is in close proximity to Horicon Marsh. A question was posed as to how the plant may affect waterfowl movement. Due to the extensive agricultural area that can be used by the large number of geese for foraging, which use Horicon Marsh in the spring and fall, there should be no impacts that would have an adverse impact to waterfowl. The only impact that would occur is that waterfowl would no longer use the site where the plant will be built.

4) Endangered Resources

State endangered resources: A review of the Natural Heritage Inventory conducted by DNR indicates no known occurrence records in the vicinity of the project for any federal or state endangered, threatened or special concern species, nor for any natural communities (see attachment 14).

13. Cultural Environment

1) Land use (dominant features and uses including zoning if applicable)

The current land use is agricultural. The project area is not zoned. The tract has one small hill that will be graded into a well-drained, accessible site. The site location is in proximity to CTH EF, which runs north/south and STH 33, which runs east/west and is not located next to major population centers. Adjacent land uses include agriculture and industrial warehouses. Residential land uses are present within 3/4 mile southeast and 1 mile north of site.

2) Archaeological/Historical

On August 27th and 28th, 2003, personnel from Archaeological Consulting and Services, Inc. (ACS) conducted an archaeological survey of a proposed development site in Randolph Township, Columbia County, Wisconsin. The State Historical Society reviewed the findings by ACS. See Attachment #6.

According to the Report of Investigations prepared by ACS, a literature and records search was conducted. In addition, the project area, including the proposed storm water retention pond area, was subjected to a pedestrian survey and the excavation of 45 shovel test units. The survey yielded no Native American artifacts and no previously reported sites of that nature have been found in or near the project area. Euro-American materials were limited to surface finds of recent age. Several apparently 20th century Euro-American buildings are located in the project area. No additional research is recommended for the project area as no sites were encountered which might be eligible for inclusion on the National Register of Historic Places.

14. Other Special Resources (e.g., State Natural Areas, prime agricultural lands)

The site currently supports prime agricultural lands.

ENVIRONMENTAL CONSEQUENCES (probable adverse and beneficial impacts including indirect and secondary impacts)

15. Physical Consequences (include visual if applicable)

1) Air Impacts

See the detailed description of emissions in Question 8 of this document. Some level of odor may occur. There is an odor abatement/response requirement that will be implemented by the facility and monitored by the DNR in the event that there are odors. The impact of the air pollutants emitted from the facility is expected to increase ambient levels, but stay within standards. The maximum 24-hour impact of suspended particulate emissions under 10 microns in size is expected to increase the ambient concentration from a background of 49.8 to up to 95.1 micrograms per cubic meter under worst case meteorological conditions. The increase from total suspended (all sizes) particulate emissions will go from a background of 69.3 to 114.6 micrograms per cubic meter. The smaller sized particles have the most health impact. The standard for both types of suspended particulate is 150 micrograms per cubic meter. The maximum annual impact of Nitrogen oxides emitted from the facility is expected to go from a background level of 17.9 to 38.1 micrograms per cubic meter. The standard is 100 micrograms per cubic meter.

It is possible that some odors may occur as a result of the plant. If present, the strength of odors near the plant will depend on local meteorological conditions that will impact dispersion of the odor. The facility will include a 125 - foot stack to vent the drum dryers used to dry the distillers grains. The height of the stack improves dispersion of odors, but will have a significant visual impact.

A Thermal Oxidizer driven boiler system will provide steam energy. A thermal oxidizer will be used to reduce emissions from the exhaust gases from both Dryer A and Dryer B. The energy required to complete thermal oxidization will then be used to drive a waste heat boiler that will produce 100 percent (100%) of the steam requirements of the ethanol plant. The Thermal Oxidizer waste heat boiler combination is designed to operate in conjunction with, or independent of, the drying system. This will allow for plant startups and shutdowns without affecting either dryer operations or steam production capabilities.

The total of all grain dryer exhaust is introduced into the Thermal Oxidizer / Waste Heat Recovery Boiler system, where it is then subjected to thermal oxidation, which oxidizes at least 98% of the volatile organic compounds (VOCs), and at least 90% of the particulate matter to water and carbon dioxide. This is accomplished while using the energy needed to generate the required process steam efficiently and reliably. Measures to avoid or minimize impact will occur through maintenance and operation of the equipment within its operating range and in compliance with all applicable air pollution control regulations as identified in the facility's air pollution control permit. Risks of equipment failure are slim. However, in the event of equipment failure the malfunction, prevention and

abatement plan and the operations manual would guide the action steps ultimately taken.

2) Water Impacts

As discussed in Question 6, above, approximately 750 gallons per day (GPD) of domestic sanitary wastewater will be generated and discharged to the on-site septic sanitary sewer system. An estimated 50,400 GPD of reverse osmosis water, 108,000 GPD of boiler/cooling tower blow down, equaling 158,400 GPD of cooling tower bleed off is proposed for discharge either directly to the dug ditch on the north end of the property.

Discharges of cooling tower waters, boiler blow down and reverse osmosis waters will be based on treatment choices and water quality considerations. UWGP is working with water treatment companies that provide typical chemicals used in cooling tower water treatment. Water treatment additives that are used will need to meet limits with any WPDES permit limitations and whole effluent toxicity testing requirements.

Any discharge from the storm water detention basin would be monitored for flow (GPD) and any water quality testing parameters as required in the WPDES permit. No process water will be discharged from the facility. (see Question 3, above).

Also discussed in Question 6 of this document is information on UWGP's required coverage under an industrial storm water discharge permit. The DNR's conferring of coverage under an industrial storm water discharge permit will be contingent upon UWGP conforming to Subchapter II of NR 216, *Industrial Storm Water Discharge Permits*, and adequately addressing potential contamination of storm water runoff from the facility during operation. Storm water contact with manufacturing processes and equipment, raw materials, waste products and by-products, and final products is expected to be minimal. Most activity, equipment, and materials will be contained within enclosed structures and, therefore, not in contact with storm water. All tank farms will be within a dike designed to contain storm water runoff or a spill volume of 1.25 times the largest tank capacity.

Ground water

Water requirements for a 40 million-gallon per year plant are approximately 300 gallons per minute. That is approximately 432,000 gallons per day.

3) Scenic/Visual Impacts

Scenic and visual impacts are unavoidable. The view will be blocked from the majority of the population of Friesland by the warehouses already present and the topography of the land. Some of the landowners in the immediate area are also owners in the project. The 125 -foot emissions stack will be visible from some distance.

The site is located one mile south of the village of Friesland.. Trees and shrubs will be planted to improve site aesthetics. Landscaping plans for the site are not yet finalized.

4) Topography/Soils Impacts

The existing rolling topography will be graded and leveled where necessary to accommodate the proposed plant. On-site excavated material will be used as fill.

1. Consequences (include impacts to threatened/endangered species)

1) Land Cover Impacts

The UWGP plant will affect the land cover by changing it from seasonal agricultural cover to a industrial development. In addition, there will be a green space planting and wet-prairie plantings in the vegetated drainageways as well as a storm water retention pond. Proposed landscaping plans are comprised of trees, shrubs and grass cover.

2) Waterway and Wetland Impacts

Duck Creek will receive storm water and cooling water discharges from the project site. To reduce impacts of storm water, UWGP will install and maintain the storm water controls discussed in Question 6 of this document. Cooling water includes a water treatment additive, which will require this discharge to meet the limits in the WPDES permit.

The plant site will be leveled and consequently the physical location of the present waterways will be altered.

3) Endangered Resources Impacts

A review of the Natural Heritage Inventory database showed that there are no threatened, endangered, or special concern species or natural areas associated with the ethanol site (see Attachment 14).

17. Cultural Impacts

1) Land Use (include indirect and secondary impacts)

The UWGP site will directly affect local land use by taking it from prime agricultural to industrial use. Although Randolph township is currently un-zoned it is in the process of writing a smart growth plan for the township. Town officials have indicated they see the project area fitting well into their smart growth plans because of the land's proximity to rail, electrical lines and good roads on two sides of the project site.

2) Traffic

The potential increase of truck traffic on STH 33 and CTH EF as a result of the ethanol facility is discussed below.

There will be an estimated 60 trucks a days bringing corn into the plant 260 days of the year. Corn producers have historically delivery their corn to Milwaukee or to the Illinois river.

Either train or trucks will deliver denaturant. If all denaturant is delivered by truck it will add 1 truck per day to present traffic. Much of the Distillers grain and ethanol will be shipped out by rail. The most efficient operating truck is a truck that is loaded going into a delivery point and then reloaded for a "backhaul". The ethanol plant creates a situation where corn is delivered to the plant and then the truck is reloaded with Distillers Grain for the return trip or a backhaul. UWGP estimates the increased truck traffic associated with distillers grain and ethanol will be 12 trucks per day. Lastly 32 employees will be entering the site per day.

To evaluate the potential traffic impact of the proposed plant, it is necessary to evaluate such potential impact in comparison with current traffic levels. The Wisconsin Department of Transportation studies have shown there is an estimated 3600 vehicles per day on STH 33 and 760 vehicles per day on county EF.

The traffic associated with the project represent 105 vehicles per day. Consideration should be given to decreased trucking miles associated with corn producers delivering corn to a close ethanol plant verses delivering corn to markets further miles away.

Currently, there are approximately 10 trains a day traveling on the tracks adjacent to the site of the proposed plant. Anticipated production at the plant will mean an additional 30-42 cars a week will be added to existing train travel. Seven sidings will be added on UWGP property to accommodate the added rail car shipments.

Traffic Safety Plan

Town, county and the state DOT officials will be implementing the following traffic safety plan to deal with the increase in traffic.

- The entrance road will be from county road EF in place of the present field driveway.
- Turning lanes will be built on County EF.
- The access road will have a stop sign
- There will not be an access road onto STH 33

UWGP has provided in its operational design measures to avoid a scenario whereby the dryers fail and a considerable quantity of wet grains needs to be hauled off site. If critical equipment fails and is not repairable within a designated time period, then the facility is subject to the normal shut down sequence. Therefore, there should not be an increase in traffic through mass hauling of wet grains if the dryers should fail.

ICM, Inc., designers of the plant, have not noted problems with roads icing up in winter due to boiler blow downs. If this were to occur, appropriate measures would be taken by UWGP.

On a larger scale, UWGP anticipates that the majority of its corn will be purchased from Wisconsin producers. The corn used by UWGP could potentially reduce the export quantity, keeping both the corn and jobs associated with its processing in the state, specifically the Columbia County region. Local production of distillers grains will reduce the cost to local users and the net amount of fuel required for that transportation.

3) Social/Economic Impacts (include ethnic and cultural groups, and zoning if applicable)

While the Town of Randolph is participating in the comprehensive planning efforts, the fact that there is no zoning makes it difficult to predict how all the lands in the township will be used in the future. Due to the fact that Randolph has no zoning means that certain industry may be attracted there to minimize the amount of local controls that must be met. Determining whether the selected site is a good fit for an ethanol plant is a local issue. The DNR's review of the site indicated that there are no significant environmental concerns that would require a more in depth review of the site or surrounding area, based on standards found in regulation and code. The DNR does not anticipate that there will be adverse environmental issues associated with obtaining DNR permits.

Adverse social impacts will include increased noise, some odor, and changes in the aesthetic quality of the project area. No adverse impact is anticipated to occur disproportionately to any particular ethnic or cultural group.

Potential socio-economic benefits of the project, in addition to the larger agricultural-sector benefits already discussed in Question 2 of this document, include:

Local Community Benefits (see Ethanol and the Local Community, Attachment 10, prepared for UWGP by AUS Consultants)

According to a study by AUS Consultants and SJH & Company a 40 MGY ethanol plant will generate the following economic benefits to the local community.

- Expand the economic base of the local economy by 110.2 million
- Generate an additional 19.6 million of household income.
- Generate at least 1.2 million in new tax revenue for the state and local governments.
- The plant will offer an additional market for local farmers, feed users, local feed companies, and elevators

UWGP has stated they expect the following to occur.

- UWGP intends to use local products and services whenever possible, both during and after plant construction .
- Excellent employment opportunity: Over 50 percent (50%) of Columbia County workers are presently employed outside the county. UWGP will offer 30 to 35 high quality jobs to area residents.
- \$7.5 to \$10 million dollars of taxable property will generate approximately \$150,000 in real estate taxes.
- Better corn prices for area farmers because of more advantageous basis. (\$0.05 - \$0.15/bushel)
- Up to forty-one (34) skilled and semi-skilled full-time jobs and 65 temporary construction jobs become available
- Local equipment supply and service companies may be awarded contracts associated with the project.

4) Archaeological/Historical

No impact is anticipated. See discussion in Question 13B of this document and Attachment #6 -Correspondence from State Historical Society.

18. Other Special Resources (e.g., State Natural Areas, prime agricultural lands)

There will be approximately 40-acreas of prime agricultural lands taken out of crop production.

19. Summary of Adverse Impacts That Cannot Be Avoided (more fully discussed in 15 through 18)

Some level of odor cannot be avoided. The impact of the air pollutants emitted from the facility is expected to increase ambient levels, but stay within standards.

There will be temporary noise due to construction. The facility will also have noise associated with its operation from motors, pumps and fans, as well as noise from trucks and trains. The impact of this noise will depend on the distance from the facility. Ambient noise is not regulated by the state, but by local governments. Traffic may increase but the roadway will be upgraded to handle additional capacity by the construction of a turning lane on STH 33. All impacts are not entirely avoided.

ALTERNATIVES (no action - enlarge - reduce - modify - other locations and/or methods)

20. Identify, describe and discuss feasible alternatives to the proposed action and their impacts. Give particular attention to alternatives that might avoid some or all of the adverse environmental effects.

Alternative 1: No project. A decision not to proceed with the UWGP project would preclude the introduction of new air emissions, odor, traffic and noise to this area, and would remove the potential risks of spills or releases of the particular substances that this type of industry utilizes. The visual impact, particularly of the tall stack, would be avoided.

Due to the fact that the site has good roads, rail and electrical infrastructure, it is possible that if UWGP does not locate at this site, another business or industry may do so.

A no-build decision also would preclude the potential economic benefits UWGP has stated that this plant should provide to Wisconsin's agricultural sector (especially the corn producers) in the Columbia County region and the local community. The opportunities to reduce corn exports from the state, which UWGP expects this plant to offer, also would be precluded. The capability of this site for ethanol production and the environmental benefits it provides at a larger scale would not be realized.

Alternative 2: Modified Project: A smaller operation could not provide the economies of scale needed to make a business such as UWGP a viable entity. UWGP would prefer to process more than 14.3 million

bushels of corn annually to meet the demand for ethanol. However, increased production has the potential of putting UWGP into the category of a major source of air emissions. In general, emissions such as volatile organic compounds will rise or decrease in proportion to the size of the facility.

All new technology in regards to avoiding some the adverse environmental effects will be considered. The proposed 125-foot stack with the incorporated thermal oxidization of odors associated with drying of the distillers grain is the best available technology at present to reduce odors.

Alternative 3: Another site altogether (non-Friesland/Randolph area): The town of Randolph was chosen for this project for several reasons. First, the area is well serviced by rail transportation, which is critical to this type of operation. The UP rail system is networked to allow products to be economically marketed anywhere in the United States. The Union Pacific Railroad (UP) provides rail service at the site. Tracks in the area are in excellent condition with trains moving through at an estimated 55-miles per hour (mph). Union Pacific Railroad has offered attractive rates to serve the facility.

Second, the site's access to electrical and natural gas infrastructure. The site has access to two electrical suppliers and it is 1 mile to a natural gas pipeline.

Third, the site is located at the intersection of STH 33 and County Road EF. Trucks traveling to the site will only have to travel 1/8 mile on CTH EF to access the site.

Fourth, Randolph's proximity to dairy farms around Green Bay also influenced the selection. Dried distiller's grain (one of the co-products of ethanol production) has become a popular source of high-quality protein feed for dairy cattle. Eastern Wisconsin offers a number of dairy operations serving as potential consumers of this product. Local sales will minimize transportation costs and would be expected to reduce odor because drying of the product would not be necessary.

In addition, the site is located in a rural, low population center. The site is 1 mile from the village of Friesland. Many residents of the village of Friesland and the township of Randolph are owners of the project.

EVALUATION OF PROJECT SIGNIFICANCE (Complete each item)

21. Significance of Environmental Effects

- a. **Would the proposed project or related activities substantially change the quality of the environment (physical, biological, socio-economic)? Explain.**

Based upon the information provided to DNR as discussed in this document, and the environmental requirements UWGP must meet to receive all necessary permits (including the wastewater permits), this proposed project is not expected to substantially change the quality of the physical or biological environment. The project is anticipated to improve the agricultural sector's socio-economic environment.

- b. **Discuss the significance of short-term and long-term environmental effects of the proposed project including secondary effects; particularly to geographically scarce resources such as historic or cultural resources, scenic and recreational resources, prime agricultural lands, threatened or endangered species or ecologically sensitive areas. (The reversibility of an action affects the extent or degree of impact)**

Locally, residents will experience some adverse odor and noise impacts over the long term. Some decrease in air quality is anticipated as a result of this project. Measures to avoid or minimize impact will occur through

maintenance and operation of the equipment within its operating range and in compliance with all applicable air pollution control regulations as identified in the facility's air pollution control permit.

Locally, prime agricultural land at this site will be lost. However, it is anticipated that in the long-term higher values for corn may help regional farmers remain economically viable and reduce loss of agricultural land to subdivision and development.

It is not expected that the increased demand and price for corn, in and of itself, will cause landowners to withdraw from federal set-aside conservation programs such as the Conservation Reserve Program (CRP). Other economic factors such as exports, drought, demand for other crops and the cost of fertilizer play much higher roles in determining the amount of land placed in corn and withdrawn from the CRP Program.

Studies performed for this project indicate that ecologically sensitive areas were not present directly on the site. Environmental effects on historic and cultural resources are not expected, based on the findings from the archeological survey. No threatened or endangered species are expected to be impacted by the project. See Attachment #6 - Correspondence from the State Historical Society.

1. Significance of Cumulative Effects.

From the regulatory standpoint, the Town of Randolph currently does not have any significant air quality issues. The county is attaining and maintaining all existing national ambient air quality standards. This proposed facility would, of course, add to the amount of air pollution in the area. However, air dispersion modeling efforts (attachment #9) indicate that the emissions, as estimated based on information submitted in the permit application, would still result in compliance with all NAAQS. The DNR also prepared a watch list, which assessed the impact of acrolein and acetaldehyde emissions (Attachment 8). Questions concerning the DNR Air Permit Review or the above mentioned attachments should be directed to Don Faith, Air Permit Engineer, 267-3135, 101 S. Webster St. AM/7, Madison, WI 53702.

23. Significance of Risk

a. Explain the significance of any unknowns that create substantial uncertainty in predicting effects on the quality of the environment. What additional studies or analyses would eliminate or reduce these unknowns? Explain why these studies were not done.

The DNR will require that UWGP develop a system that meets the water quality requirements placed in the WPDES permit issued to UWGP prior to discharge. UWGP is at some risk, if necessary standards for allowing discharges to the dug ditch cannot be achieved.

Temperature limits will be addressed when the department finalizes thermal standards. The volume of discharge and or lake freezing concerns expressed by some is a civil matter - and will involve riparian rights. The hydraulic impacts would seem to be minimal during dry or wet weather flows - but the continued concern with farm runoff/flooding may indicate farm management practice problems. This stream will be placed on a higher priority for a stream classification review - something that will be most likely looked at over the next 3 years - non-point pollution sources such as farm practices can be looked at during this review.

The proposed UWGP plant does include a Thermo Oxidation system on the dryer exhaust to reduce odors and other pollutants where most existing plants outside of Wisconsin do not include this. Odor impacts are expected to be lower than those from existing plants without a thermo oxidation system.

With respect to air discharges, unknowns are minimal. All air emissions and discharges have been identified, quantified and determined to be within acceptable limits.

Regarding potential traffic concerns about hauling wet grains should equipment (dryers) fail: The operational design provides that if the facility is producing Distillers Dried Grain and a critical equipment item fails and is not repairable within a designated time period, then the facility is subject to the normal shut down sequence. Therefore, there should not be an increase in traffic hauling wet grains if the dryers should fail.

Below is a list of studies/plans/reports prepared for this project:

- DNR Air Permit Review (Attachment 8)

- DNR Air Dispersion Analysis (Attachment 9)
- Waterway Delineation of the UWGP Site
- An Archeological Survey of the Proposed Development Site
- Limited Phase I Environmental Assessments

a. Explain the environmental significance of reasonably anticipated operating problems such as malfunctions, spills, fires, or other hazards (particularly those relating to health or safety). Consider reasonable detection and emergency response, and discuss the potential for these hazards.

DNR staff has been in contact with Minnesota-based plants to learn about operations. The Monroe and Stanley ethanol plants have been in operation for more than one year. Equipment will be monitored daily and maintained consistently per the operations manual.

Tank Farm

Ethanol is water-soluble and, therefore, ethanol fires can be extinguished by dilution with water. More commonly, fire would use A-FFF foam. The risk of fire is an issue that should be handled between the plant operators and the local fire department(s).

The Bureau of Alcohol, Tobacco and Firearms (ATF) requires that ethanol be denatured after processing and before shipment. UWGP will blend gasoline with ethanol to accomplish a five percent (5%) gasoline solution before storage or shipment. Therefore, a 60,000-gallon gasoline denaturant storage tank will be located within the bermed tank farm.

UWGP is required by federal law to develop Spill Prevention Control and Countermeasure (SPCC) Plan. The requirements for this plan will include a layout of the tank farm showing tanks, dikes, piping and access points. The containment area around the tanks must, under Wisconsin Department of Commerce rules, have enough capacity to hold 125% of the volume of the largest tank within the bermed area.

The tank farm will utilize a manual discharge valve and best management practices for discharging ordinary rainwater from the dike area. The tank farm is located outside of the perimeter road and away from buildings or other structures.

Plant Perimeter Road

The perimeter road of the plant will be one foot higher than the interior elevations and, therefore, acts as an earthen barrier to catastrophic failure of tanks within the main plant site.

Drainage ditches inside the perimeter road discharge to the storm water retention pond through under-road culverts. Qualified plant personnel who will be on hand around the clock could block these culverts with gate-type valves if necessary to prevent discharge. The risk associated with such discharge is very low and would likely happen only as a result of a catastrophic event.

Chemical Leaks and Spills

Fifty percent (50%) caustic soda solutions will be received by bulk truck. The caustic is diluted for use in plant clean-in-place (CIP) systems. Three tanks within the Process Building store the various caustic solutions.

Except for the distillers grain storage and load-out buildings, the buildings are connected via an underground wet well system. Therefore, any spill of chemical, wash down water and associated floor drop is centrally collected in an underground wet well in the process building. Contents of the wet well are pumped to the beer well for reprocessing via the distribution column.

Ethanol load-out facilities also use a separate collection system where product that could be spilled by accident or equipment failure drains by gravity to a sump located within the bermed area of the tank farm, and pumps back to the beer well for reprocessing into the distillation column. Additionally, the loading facilities will include features typically used by the gasoline transport industry to reduce the risk of spill or leakage.

The SPCC plan will include a list of emergency phone numbers for reporting, response and general assistance. This will include local emergency responders, trained UWGP staff and private contractors who may be used to contain or clean up a spill. Also, the SPCC plan will list equipment and personnel on-site that can be used to contain and clean up a spill. State law requires that spills be reported to local authorities and the DNR.

Spills of base materials while in transit to the UWGP facility, whether by truck or by rail will be reported immediately and responded to by local responders. Because of the potential volume of materials lost, DNR wardens or other state spill response personnel are likely to respond to evaluate threats to surface water. Spills of finished product or other liquid products shipped off-site by truck or rail will also be reported immediately and responded to by local police and fire personnel. DNR conservation wardens and environmental staff will respond to evaluate threats to soil, surface water and groundwater. DNR field personnel, if necessary, will oversee clean-up activities. In a major release of ethanol or other petroleum product to surface water, US EPA would supplement state and local response actions with federal support and resources in the emergency response and containment phase.

Central Alarming

The plant uses a central computer or distributed control system (DCS) with battery backup. Nearly four hundred (400) different points are monitored or controlled within the plants and its ancillary systems. Alarms alert plant operations to a condition that needs attention. The same computer system programmed by the same people has been successfully used in other ethanol plants.

Power Failure

In the event of a power failure, an emergency shutdown would occur resulting in no energy for control or transfer of material. Only minor power backup systems are planned to keep the plant heated and lights on in the event of a power failure. The DCS system has a battery backup to allow for the orderly shutdown of programs.

Product moving throughout the plant either stops moving or by gravity is sent to the lowest point. Valves default to the safe position to avoid pressure build-up. Start-up procedures are outlined in the standard operating procedures.

Pump Seal Failure

Discharges are contained and forwarded to the process recycle systems (wastewater treatment plant) or, if organic, routed back to the bio-methanator for recycling.

24. Significance of Precedent

a. Would a decision on this proposal influence future decisions or foreclose options that may additionally affect the quality of the environment? Explain the significance.

No significant precedent is expected. We do not think this will have an affect on future proposals except as described below.

Based on UWGP's proposed air permit and estimated emissions, this facility would be a minor source under the Air Management Program. As such, it would not be required to be included in any evaluation of future sources looking to locate in the same area, i.e., the existence of emissions from this source would not impede future industrial growth as it relates to air pollution.

Infrastructure will be in place and will preclude other land uses and configurations for the site. Development outside of the boundary of the facility's erosion control and storm water management plan may require additional construction site storm water permits under NR216.

The proposed high-capacity well is not likely to have a significant impact on groundwater resources in this area. The sandstones are very good aquifers. Friesland has 2 municipal wells. The Friesland municipal wells all have a design capacity of between 300 and 800 gallons per minute from these formations.

The high capacity well program looks at potential draw downs on municipal wells only. The DNR does not have

the statutory authority to look at impacts to private wells and surface water. Private well impacts are a civil issue between the users of the groundwater resource.

The shallow depths of sandpoint wells and the limitations of shallow well pumps make driven point wells are more likely to be impacted by aquifer draw down than drilled wells. The bedrock wells in the area have static water levels that are deeper than 50 feet. There are no well construction reports in our records in section 27 for driven point wells. It is possible that there is water in the sand and gravel above the bedrock and that there are driven point wells screened in that zone.

The decision to issue the approval was based on whether or not the high capacity well will cause 10 or more feet of draw down on any municipal wells after 30 days of pumping at the approved rate (300 gpm). Calculations conducted by the high capacity engineers indicate that the nearest public utility well will have less than a 3-foot draw down after 30 days of pumping. Based on this information a high capacity approval was issued on March 26, 2003.

There is another high capacity approval in the same section for Jung Farms. That approval is a 1977 approval for a 1,200-gpm well.

a. Describe any conflicts the proposal has with plans or policy of local, state or federal agencies that provide for the protection of the environment. Explain the significance.

This proposal presents no known conflict with plans or policy of local, state or federal agencies. Federal law encourages the development of the ethanol industry. UWGP designers are working to comply with all applicable laws and regulations.

25. Discuss the effects on the quality of the environment, including socio-economic effects, that are (or are likely to be) highly controversial, and summarize the controversy.

The most controversial issue the DNR and project applicants are aware of is that of potential odors and traffic generated from plant operations. The plant will be located in the middle of section 27 in Randolph Township. There are four house located in section 27 one of the houses will be owned by UWGP. The level of citizen concern heightens in proportion to where people live. This highest concern comes from those near to the plant. A series of steps will be in place to address an odor complaint if brought forward and traffic turn lanes are planned to be added to county EF.

Other citizen concerns relate to threat of fire and changes to the rural community. Fire is addressed in the safety management plan (Attachment 15) for the site and is also related to the SPCC plan.

1. Explain other factors that should be considered in determining the significance of the proposal.

The UWGP plant used the dry mill design as opposed to a wet mill design. Dry milling is significantly different from wet milling and the two should not be confused.

Wet milling plants are generally much larger and more costly. Wet mills have significantly more environmental impact due to the use of water to "steep" the corn before grinding, hence the name "wet mill". The steeping creates water treatment issues for the facility due to the quantities and the addition of sulfur dioxide during the steeping process. Well-known wet milling companies are ADM, Cargill and CPC.

SUMMARY OF ISSUE IDENTIFICATION ACTIVITIES

27. Summarize citizen and agency involvement activities (completed and proposed).

UWGP held an informational meeting in November of 2002 at the Randolph town hall to give information about the project to residents of the surrounding area. Information and presentation was given to the Friesland fire department on April 23, 2003. UWGP held 60 public informational/equity meetings in Columbia and the surrounding counties from June 9 to July 23, 2003.

Village of Friesland and Township of Randolph citizens and public officials toured the Monroe ethanol plant during the month of February 2003.

Public hearings were held in Cambria for the WDNR air permit and the Wastewater discharge permit on July 8, 2003 and September 11, 2003, respectfully.

28. List agencies, groups and individuals contacted regarding the project (include DNR personnel and title).

The following list represents contacts from approximately May 1, 2000 to present. Titles of many not known.

Date	Contact	Comment Summary
	Governor's Office: <u>Matthew Hauser, Policy Assistant</u> <u>Christopher Larowe, Policy Advisor</u>	
	U.S. Dept. of the Interior Fish & Wildlife Service: <u>Janet Smith, Field Supervisor</u>	
	U.S. Dept. of the Interior National Park Service: <u>Michael Madell, Regional Environmental Coordinator</u>	
	WI Dept. of Administration: <u>David Schmiedicke, Team Leader</u> <u>William Walker, Executive Policy & Budget Analyst</u>	
	Archeological & Consulting Services, Inc.: <u>Philip Salkin, Principal Investigator</u> <u>Jeff Frost, Mike Kellner, Field Personnel</u>	
	WI Dept. of Agriculture Trade & Consumer Protection: <u>Joe Tregoning, Deputy Secretary</u>	
	UWGP: <u>Kevin Roche, President</u> <u>Bill Herrmann, Vice President</u>	
	Ho-Chunk Nation: <u>Ritchie Brown, Manager, Div. of Natural Resources</u>	
	State Historical Society of Wisconsin: <u>Sherman Banker, Compliance Archeologist</u>	
	Wisconsin Department of Commerce: <u>Phil Albert, Deputy Secretary</u> <u>Dan Madden, Area Development Manager</u> <u>Marc Williamson, Environmental Review Specialist</u> <u>Joe Leo, Grant Specialist</u> <u>Kathleen M. Heady, Area Development Manager (608-266-9944)</u>	
	Town of Randolph: <u>David J. Hughes, Chairman (920-348-5258)</u>	
	Village of Friesland: <u>Carl M. Vander Galien, President (920-348-5574)</u>	
	Columbia County Economic Development Corporation: <u>Nancy Elsing, (608-742-6161)</u>	
	WI Dept. of Transportation: <u>Dennis Leong, Economic Strategies & Analysis</u> <u>Gati Grundmanis, TEA Program Manager</u> <u>Tammy A. Williamson, Planning Specialist</u> <u>Dan Preuss, District Program Supervisor</u> <u>Steve Marshall, Engineer</u> <u>Frank Huntington, Bureau of Railroads a</u>	
	nd Harbors <u>Steve Marshall, Engineer</u> <u>Frank Huntington, Bureau of Railroads and Harbors</u>	

	<u>DNR: Dan Hunt, Water Mangement Specialist Darrell Bazzell, Secretary Ruthe Badger, Regional Director Jim Kurtz, DNR Attorney Cathy Bleser, Environmental Analysis & Review Spec. Barb Pavliscak, Air Management Engineer Paul Yeung, Air Permitting Engineer A</u>	
	<u>dam Hogan, Hydrogeologist Bernie Robertson, Wastewater Engineer Bruce Moore, Water Resources Engineer Carl Batha, Basin Lands Leader Dean Packard, Air Program Team Supervisor Duane Schuettpelz, Chief, Wastewater Permits Section Jack Saltes, Wastewater Eng</u>	
	<u>ineer Jim Bertolacini, Wastewater Specialist (storm water) Joseph Brusca, Regional Air and Waste Leader Marjorie Devereaux, Regional Water Leader Nasrindo Mohajerani, Water Resources Engineer Richard Edwards, Wastewater Specialist Rich Reichardt, Wastewat</u>	
	<u>er Engineer Robert Hansis, Basin Water Leader Russell Anderson, Supervisor, Environmental Analysis and Review program Steve Fix, Basin Planner Thomas Boos, Water Management Specialist Thomas Harpt, Wastewater Engineer</u>	
	<u>Vierbicher Associates, Inc.: Gary Becker, Manager Bill Biesmann, Project Engineer Jeff Quamme, RLS Kate Nardi, Project Planner Joel Janssen, Hydrogeologist</u>	
	<u>RMT: Dennis Hatfield Dave Witford Dave Fox Karin Columbiaacre, Project Manager Gina Rau, Project Engineer</u>	
	<u>Usbancorp Piper Jaffray: Mark Fisler, Managing Director Timothy Oswald, Managing Director, Investment Banking</u>	
	<u>ICM: Jeff Roskam, Vice President, Engineering Division Paul Cantrell, Project Engineer</u>	
	<u>Linguist & Vennum: John Levy, Attorney</u>	
	<u>USDA Natural Resource Conservation Service: Jim Johnson, District Conservationist</u>	
	<u>Columbia County Zoning Michael Stapelton</u>	
	<u>Columbia County Highway Norm Dahl Curt Dey T.O. Bogg</u>	

EIS DECISION (This decision is not final until certified by the appropriate authority)

In accordance with s. 1.11, Stats. and Ch. NR 150, Wis. Adm. Code, the Department is authorized and required to determine whether it has complied with s. 1.11, Stats., and Ch. NR 150, Wis. Adm. Code.

29. Complete either A or B below.

A. EIS Process Not Required []

Analysis of the expected impacts of this proposal is of sufficient scope and detail to conclude that this is not a major action which would significantly affect the quality of the human environment. In my opinion therefore, an environmental impact statement is not required prior to final action by the Department on this project.

B. Major Action Requiring the Full EIS Process. []

The proposal is of such magnitude and complexity with such considerable and important impacts on the quality of the human environment that it constitutes a major action significantly affecting the quality of the human environment.

Signature of Evaluator

Date Signed

Noted: Area Director or Bureau Director

Date Signed

Copy of news release or other notice attached? [] Yes [] No

Number of responses to public notice _____

Public response log attached? [] Yes [] No

CERTIFIED TO BE IN COMPLIANCE WITH WEPA
Regional Director or Director of BISS (or designee)

Date Signed

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to section 227.42, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. The filing of a request for a contested case hearing is not a prerequisite for judicial review and does not extend the 30-day period for filing a petition for judicial review.

Note: Not all Department decisions respecting environmental impact, such as those involving solid waste or hazardous waste facilities under sections 144.43 to 144.47 and 144.60 to 144.74, Stats., are subject to the contested case hearing provisions of section 227.42, Stats.

This notice is provided pursuant to section 227.48(2), Stats.