

# **A**GRICULTURAL **I**MPACT **S**TATEMENT



## **Germantown to Mequon Gas Pipeline Replacement Project Washington and Ozaukee Counties**

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**Wisconsin Department of Agriculture,  
Trade and Consumer Protection  
DATCP #4086**





# Agricultural Impact Statement

Wisconsin Department of Agriculture,  
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**AGRICULTURAL IMPACT STATEMENT**

**Germantown to Mequon Natural Gas Pipeline  
Washington and Ozaukee Counties  
Wisconsin Gas LLC  
PSC Docket # 6650-CG-243**

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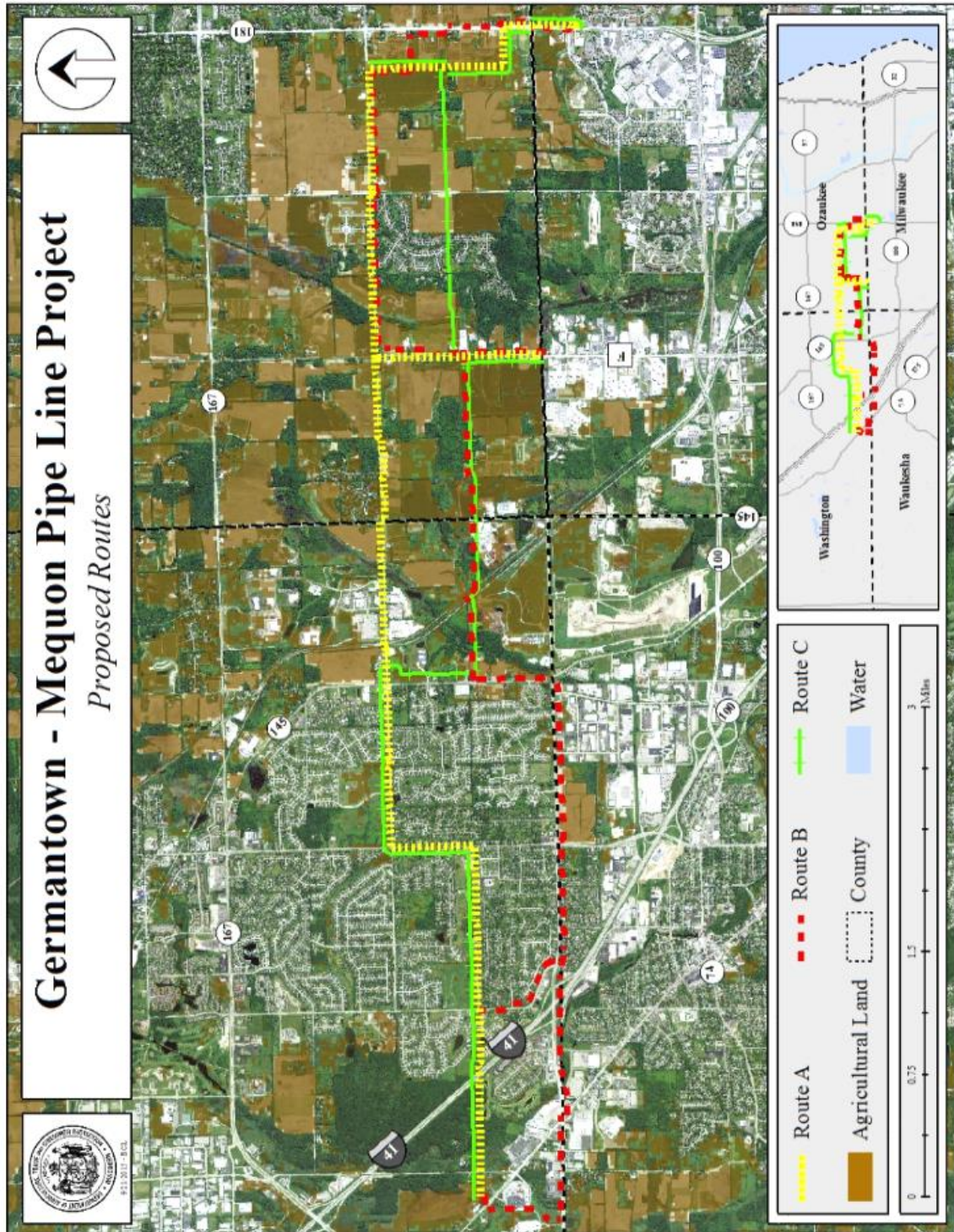
**INTRODUCTION**

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) has prepared this agricultural impact statement (AIS) in accordance with §32.035, Wisconsin Statutes. The AIS is an informational and advisory document that describes and analyzes the potential effects of the project on farm operations and agricultural resources, but it cannot stop a project. The DATCP is required to prepare an AIS when the actual or potential exercise of eminent domain powers involves an acquisition of interest in more than 5 acres of land from any farm operation. The term farm operation includes all owned and rented parcels of land, buildings, equipment, livestock, and personnel used by an individual, partnership, or corporation under single management to produce agricultural commodities.

The AIS reflects the general objectives of the DATCP in its recognition of the importance of conserving important agricultural resources and maintaining a healthy rural economy. Refer to Appendix I for the text of *Wisconsin Statute* §32.035. DATCP is not involved in determining whether or not eminent domain powers will be used or the amount of compensation to be paid for the acquisition of any property.

Wisconsin Gas LLC has developed an Agricultural Mitigation Plan (AMP) and Best Management Practices (BMPs). The AMP and BMPs describe the policies to be followed and methods to be used by Wisconsin Gas to avoid or mitigate the potentially adverse impacts on agricultural productivity from pipeline construction. The AMP and BMPs are included as Appendix II of this report.

Figure 1. Project Location Map



## **PROJECT DESCRIPTION**

Wisconsin Gas LLC is proposing to replace approximately 43,200 feet (8.2 miles) of 20-inch steel pipe that was installed in 1953. The project is located in the village of Germantown (Washington County), the city of Mequon (Ozaukee County), and the city of Milwaukee (Milwaukee County). The proposed project would install new 24-inch gas main steel pipe as well as 6-inch or 8-inch steel main to connect to existing regulator stations. The existing 20-inch pipe would be disconnected from the gas supply, purged of gas to the atmosphere, capped, and abandoned in place. Wisconsin Gas has proposed two alternative routes for the project, Route A and Route B. The Public Service Commission of Wisconsin (PSCW) has proposed a third alternative, Route C.

The proposed project requires a Certificate of Authority (CA) from the Public Service Commission of Wisconsin (PSCW) before construction can begin. The Commissioners will decide whether to approve, modify, or deny Wisconsin Gas's proposal. The PSCW must approve the project and choose the final route before construction could begin. If approved, Wisconsin Gas anticipates starting construction in February 2016 and finishing by November 2017. Construction would begin in the west and move eastward.

The project starts at Wisconsin Gas' existing Menomonee Falls Gate Station (1,800 feet northwest of the intersection of Highway 175 and Maple Road) and finishes south of the intersection of Highway 181 and West Glenbrook Road in the city of Milwaukee. Wisconsin Gas has indicated that the pipe will be installed underground with at least four feet of soil cover between the pipe and the soil surface. In some areas the new pipe would be installed in existing easements, however, all proposed routes have areas where they leave the existing easements and follow new easements or use public rights-of-way (ROW). Where the pipeline crosses private land, the typical permanent easement width would be 50 feet. Temporary workspace easements would also be acquired adjacent to the permanent easement. Those temporary easements would typically be 50 feet wide in agricultural areas.

### **Descriptions of the Alternative Routes**

#### **Route A**

The portion of Route A that has the 24-inch main would be about 48,093 feet (9.1 miles) long. It starts at the existing Menomonee Falls Gate Station about 1,800 feet northwest of the intersection of Highway 175 and Maple Road and follows the existing gas line and associated easements through areas of wetlands along Spaasland Park and residential lots to Pilgrim Road. At this point it leaves the existing line and proceeds north, underneath the road, to Donges Bay Road. It then proceeds east along Donges Bay Road through a mix of new easements and public ROW. It rejoins existing pipeline easements 1,300 feet west of Highway 181 and turns south along an existing easement to a point approximately 900 feet north of West County Line Road. At this point it turns east to follow existing easement to Highway 181. Finally the route proceeds south along Highway 181 to a point just south of the intersection of Highway 181 and Glenbrook Road.



Route A also has approximately 5,481 feet of 6-inch steel main starting at North Granville Road and Donges Bay Road and proceeding south to West County Line Road and North Granville Road.

If Route A is selected an existing regulator station would need to be relocated. It is currently located 1,650 feet north of County Highway Q at Highway 145. The proposed new location would be at Highway 145 and Donges Bay Road. The land for the relocated facility is already owned by Wisconsin Gas.

### **Route B**

Route B is 54,933 feet (10.4 miles) long for the 24-inch steel main portion of the project. This route would begin at the same location as Route A and proceed south along a utility corridor to County Highway "Q." It then leaves the existing easement and proceeds east along County Highway "Q". Much of the pipeline in this area would be installed underneath County Line Road/County Highway "Q," or immediately adjacent to the associated road ROW. Route B proceeds north along Highway 145 for 2,650 feet then rejoins the existing easement. It proceeds east along the existing easement to North Granville Road, then leaves the existing easement and proceeds north to Donges Bay Road. At Donges Bay Road, Route B follows the same path as Route A to the east end of the project. It heads east along Donges Bay Road, turns south 1,300 feet west of Highway 181, turns south 1,450 feet, and then heads east to Highway 181.

Route B would have 3,338 feet of 8-inch steel main running from the intersection of County Highway "Q" and Division Road north to Division Road and Revere Lane. It would also have 2,729 feet of 6-inch steel main running between the intersection of West County Line Road and North Granville Road north to the existing easement and gas main on North Granville Road.

### **Route C**

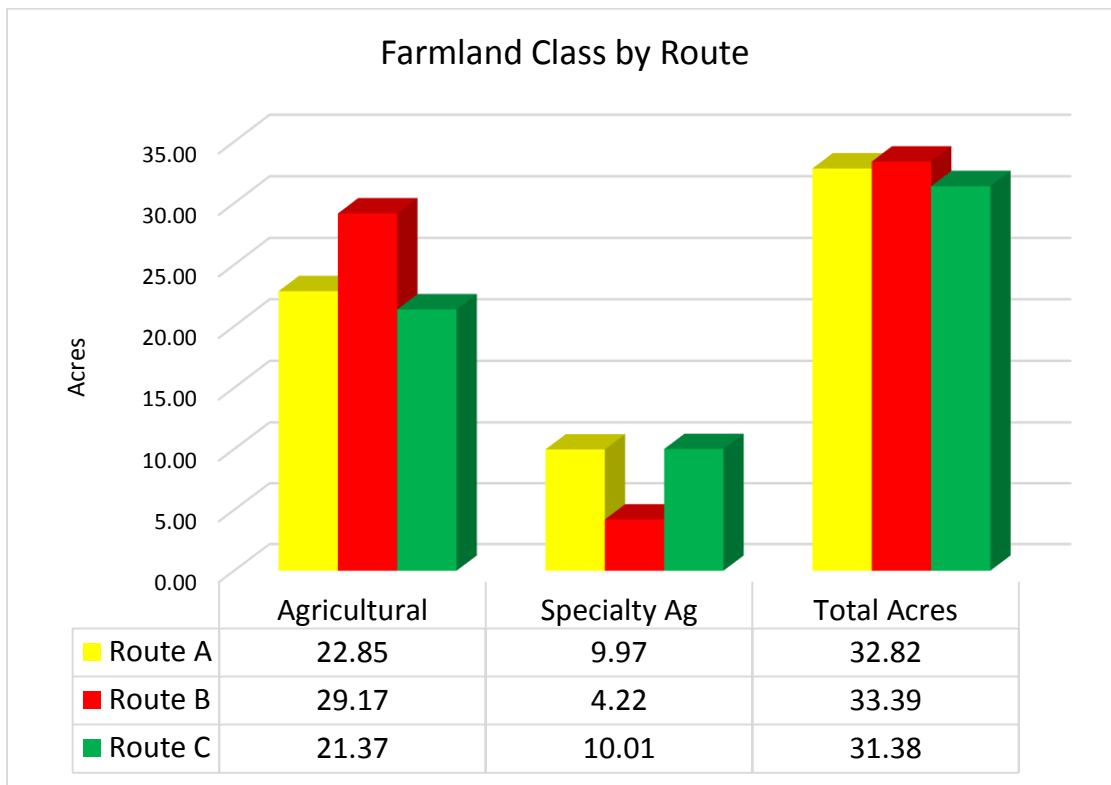
The length of the 24-inch pipe portion of Route C is 48,756 feet (9.2 miles). It follows the same path as Route A from the starting point at Wisconsin Gas's existing Menomonee Falls Gate Station along the existing pipeline route east to Pilgrim Road. It leaves the existing easement and proceeds north along Pilgrim Road and east along Donges Bay Road to avoid the same housing development that Route A avoids. It proceeds south along Highway 145 (Fond du Lac Avenue) to the existing pipeline easement, where it turns east and follows a similar cross-country route to the existing gas main. This route would share some areas with the proposed Route B, but at North Granville Road, Route C continues along the existing easement route east. This takes it through the Huntington Park subdivision and through the Mequon Nature Preserve in an area where there has been work done to restore wetlands in what were previously agricultural fields. At the eastern end of this route, the pipeline would have a similar configuration as Route A.

Route C also requires 2,509 feet of 20-inch steel main starting at the point 1,300 feet west of Highway 181 and proceeds north along existing easement to Donges Bay Road. Route C also requires 2,729 feet of 6-inch steel main starting at West County Line Road and North Granville

Road, heading north along North Granville Road to the existing easement. This connects the route in a similar way to the other proposed routes, to an existing regulator station.

Wisconsin Gas has stated that if Route C is selected as opposed to Route A or B, a future regulator station would need to be located on private property that is not currently accessible from a road ROW. The location it proposes for Route C would be in an area that is currently a plant nursery, adjacent to the Mequon Nature Preserve. In comparison, according to Wisconsin Gas, the future regulator station required for Route A or B would be immediately adjacent to Donges Bay Road on land adjacent to an existing regulator station and owned by Wisconsin Gas.

**Figure 2. Comparison of the Amounts of Farmland Affected by Each Route**



**Project Purpose and Need**

Wisconsin Gas has indicated that this project is part of the company’s ongoing effort to improve its system integrity and reliability.

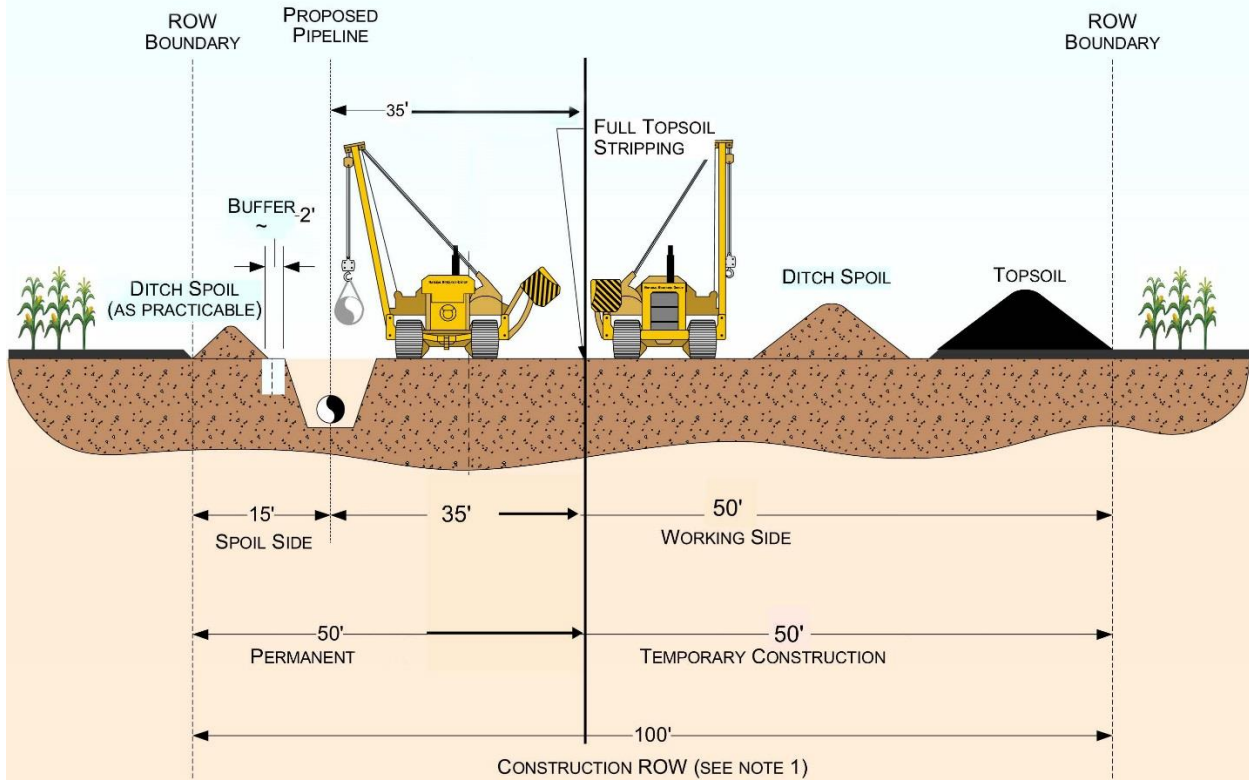
It is a continuation of Wisconsin Gas’ high pressure natural gas main replacement lifecycle initiative. The existing primary main, which was installed in 1953 has age-related deficiencies as well as portions that are at shallow depths.

The project will also provide additional reliability to the metropolitan area. The increase in size from a 20-inch main to a 24-inch main will provide greater reliability and operational flexibility to the downstream metropolitan area high pressure network. As a result, Wisconsin Gas will be able to sustain an outage to a portion of the high pressure network elsewhere in the system during colder temperatures than without the project while still maintaining adequate pressure on the distribution system. The proposed project will also allow more flow from competing pipelines. As a result, this project will give Wisconsin Gas more flexibility in future gas supply purchases.

**Right-of-Way (ROW) Requirements**

Wisconsin Gas proposes to acquire a 50-foot wide corridor of permanent easement for the proposed pipeline. In addition, 50 feet of temporary construction easement would be acquired in agricultural areas to allow enough space for full corridor stripping of the topsoil. In non-agricultural areas, Wisconsin Gas proposes to acquire narrower temporary construction easements. Refer to Figure 3 showing the proposed agricultural corridor during construction.

**Figure 3: Right-of-Way (ROW) Cross Section on Agricultural Land  
(Courtesy of We Energies)**



**NOTES:**

1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 100' WIDE CONSISTING OF 50' OF PERMANENT RIGHT-OF-WAY AND UP TO 50' OF TEMPORARY CONSTRUCTION RIGHT-OF-WAY. ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, AND OTHER SPECIAL CIRCUMSTANCES AS SHOWN IN PROJECT PLANS.
2. THIS DRAWING REFLECTS "FULL" TOPSOIL STRIPPING PROCEDURE.
3. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL AS SHOWN OR IN CONFIGURATION APPROVED BY THE INSPECTOR.
4. MINIMUM COVER 48" IN AGRICULTURAL.

## **CONSTRUCTION PROCESS**

If the project is approved, Wisconsin Gas will begin gas pipeline construction following receipt of all permits and ROW acquisition. In general, Wisconsin Gas would follow the typical pipeline construction sequence that proceeds in the manner of an outdoor assembly line, composed of specific activities that make up the linear construction sequence. These operations include surveying and staking of the ROW; clearing and grading; trenching; pipe stringing; bending; welding; lowering-in; backfilling; cleanup, hydrostatic testing, and restoration. In addition to these standard pipeline construction steps, Wisconsin Gas would use special construction techniques, such as Horizontal Directional Drilling (HDD) to pass underneath the soil surface without disturbing some features such as roads, driveways, and wetlands.

Construction and restoration in agricultural areas will use the methods described in the Agricultural Mitigation Plan (AMP) and Best Management Practices (BMPs). Refer to Appendix II for the text of the AMP and BMPs.

Construction equipment used on pipeline projects include: dozers, graders, excavators, trenchers, dump trucks, backhoes, side booms, ATV's, road bore rigs, horizontal directional drill rigs, pickup trucks, rock trenchers, vacuum excavators, rippers, tillers, rock picking machines, welding rigs and trucks, and x-ray trucks.

### **Surveying and Staking**

The first construction step involves surveying and staking the pipeline centerline, construction ROW limits, temporary extra workspace, and known underground facilities that cross or parallel the proposed pipeline. Construction activities and equipment travel require the use of temporary work space that is outside the permanent easement. The temporary use of this additional space is negotiated with the landowner.

For the portions of the project that are constructed in agricultural lands, a permanent easement of 50 feet and a temporary construction easement of 50 feet will be used. Refer to BMP 01: Right-of-Way Width for additional details. For portions of the project adjacent to road ROW and in non-agricultural lands, a 50-foot permanent easement will be used adjacent to the road ROW and the non-paved ROW will be used for temporary work space. To minimize disturbance to environmentally sensitive areas such as wetlands, waterways, and forests, a narrower temporary easement would be acquired.

The majority of access points to the pipeline ROW will occur at locations where the proposed route crosses public or private ROW. Additional temporary access points may be identified where necessary.

### **Clearing and Grading**

Clearing and grading is the first construction operation to take place on a parcel. This will provide a level area to facilitate pipe-laying operations and transport of required construction equipment.

Clearing will involve the removal of trees and brush from the work area. Some non-woody vegetation will be removed by mowing. However, crops such as small grains with a limited amount of biomass may be left in place to minimize soil erosion. A fence crew will operate with the clearing crew to cut and brace existing fencing and install temporary gates along the ROW. This crew will also install necessary fencing near certain sensitive areas as required by agencies and at pastures that contain livestock.

Wisconsin Gas will work with each landowner regarding the cutting of merchantable timber necessary for construction of the pipeline. Timber may be cut and left along the edge of the utility ROW for the landowner's use. If the landowner does not want to retain ownership of the material, it will be disposed of. Methods of disposal of trees, brush and stumps may include burning, burial, or chipping on a landowner approved and DNR permitted location, or removal to a DNR permitted location.

Vegetation from cherry and walnut trees can be toxic to livestock. All debris from these trees will be removed from areas that are actively pastured so that it will not be allowed to come into contact with livestock. This material will not be stockpiled on site.

Wisconsin Gas will use full corridor stripping of topsoil in agricultural areas. This practice involves removing the topsoil layer from the working area of the ROW and stockpiling it along the edge. This is done to minimize damage to the productivity of the topsoil. Refer to BMP 02: Topsoil Segregation for additional details.

Erosion control methods and materials will vary depending on the specific construction activities, time of year, and site soil and slope conditions at the time of construction. BMP 03: Erosion Control describes the methods that will be used to minimize damage from erosion. A general description of construction phases will also be outlined in Wisconsin Gas' Erosion Control Plan (ECP) and include clearing and grubbing (digging up roots and stumps), pipe and associated facility installation, and restoration.

### **Pipe Stringing**

After clearing and grading, sections of pipe are transported by truck from pipe storage areas to the construction ROW and positioned along the pipeline route. This is called pipe stringing. Pipe stringing can be conducted either before or after trenching.

### **Bending and Welding**

After pipe stringing, the sections of pipe will be bent, as necessary, to fit the contours of the terrain, placed on temporary supports along the edge of the trench; aligned; and welded together. A qualified inspector will visually and radiographically inspect completed welds. Following inspection, a coating will be field-applied to each weld joint. An external coating applied at the mill will protect the rest of the pipe. This pre-applied coating will also be inspected and repaired as necessary.

### **Trenching**

Trenching will be accomplished using a backhoe, a trackhoe, or a trenching machine in some cases. Material excavated during trenching will be temporarily piled to one side of the construction corridor, with topsoil and subsoil separated in agricultural land. Any material not suitable for backfill, or in excess, will be hauled to a suitable location. Proper erosion control practices will be employed to minimize erosion during trenching and construction activities. The trench will be approximately 6 feet deep and 4 feet wide. In agricultural lands, trench depth will be sufficiently deep to allow a minimum of four feet of cover over the top of the pipeline. The trench bottom will be inspected to ensure it is free of rock and debris. If required, sand or soil bedding material will be placed in the trench bottom.

If drain tiles are damaged during pipeline construction or restoration, they will be repaired in accordance with BMP 04: Drain Tile. Any necessary dewatering of the trench will be done in accordance with BMP 05: Trench Dewatering.

### **Lowering-in**

The pipeline will be lowered into the trench using side-boom tractors. A final inspection will ensure the pipeline is properly placed on the trench bottom, that all bends conform to trench alignment, and that the pipe coating is not damaged.

### **Trench Breakers and Tile Repairs**

Upon completion of lowering-in activities, trench breakers (plugs) will be installed as needed in sloped areas to prevent subsurface water from moving along the pipe. Permanent tile repairs will be completed.

### **Backfilling**

After the pipeline is installed in the trench, the subsoil will be placed back in the trench and then the topsoil redistributed over the trench and working area to maintain soil productivity. To minimize the potential for soil compaction in agricultural areas, certain construction techniques may be suspended when warranted due to wet weather conditions or soil decompaction techniques may be used.

All soil removed by construction of the pipe trench will be replaced in the trench at the same location upon completion of installation of the pipe. No soil will be removed from the site. Rock that is removed from the pipe trench that is not suitable for backfill will be taken to either a local quarry or approved disposal area to be determined upon final route selection.

Drilling mud from any horizontal directional drilling operations will be taken to an approved upland area or disposed of in accordance with applicable permits or regulations.

### **Cleanup and Initial Restoration**

The ROW and acquired easement will be restored to preconstruction conditions. Surface grading will be done to reestablish natural contours, and revegetation will be compatible with preconstruction conditions and adjacent vegetation patterns.

Cleanup procedures will begin as soon as weather and soil conditions permit after backfilling of the trench. Where necessary, soil compaction will be alleviated and any segregated topsoil will be replaced. Rocks will be removed from the ROWROW so that the size and distribution are similar to the adjacent land. In cropland, DATCP would like to see all rocks removed that are 3 inches in diameter or larger to prevent damage to farm equipment. The ROW will be graded as nearly as practicable to preconstruction contours, except as needed for soil stability purposes and the installation of erosion control measures. Trash and debris that remain on the ROW will be removed and disposed of in approved areas in accordance with federal, state, and local regulations. Refer to BMP 06: Soil Restoration for additional information.

Fences that were cut or removed during construction will be repaired or replaced. Pipeline markers will be installed along the length of the pipeline in accordance with Department of Transportation (DOT) specifications.

### **Hydrostatic Testing**

The pipeline will be hydrostatically tested and caliper pigged prior to service. A pig is a mechanical device that is sent through the pipeline to perform tests on it. After backfilling is completed, sections of the pipeline will be filled with water and tested to pressure levels higher than the maximum design operating pressure of the pipeline in accordance with DOT standards. These procedures are repeated along the entire length of the new pipeline. After completion of testing, the test water will be disposed of in accordance with federal, state and local permit requirements.

### **Final Restoration**

Revegetation will be completed in areas of perennial vegetation disturbed by construction activities. Wisconsin Gas will not seed active or rotated croplands unless specifically requested to do so in writing by the landowner or land management agency. Seedbed preparation requirements for agricultural land are specified in BMP 07: Seeding and Seedbed Preparation.

Erosion and sediment controls will be implemented as needed and maintained until final restoration and stabilization are achieved.

### **Triple-Lift Soil Segregation Method**

The triple-lift method excavates and stores the subsoil layer separately from the underlying parent material. The purpose of this practice is to preserve the distinctive soil layers in order to maintain productivity. In soils that would benefit from triple-lift, the subsoil is identified through soil type analysis and subsequent onsite sampling to be significantly different from both the topsoil and the underlying parent material. This type of soil segregation would only be done over the trench.



BMP 02: Topsoil Segregation describes how Wisconsin Gas will determine if and where triple-lift soil segregation should be used.

**Horizontal Directional Drilling (HDD)**

HDD will be used under certain features including but not limited to wetlands, waterways, driveways, and one railroad. HDD, also called directional boring, is a method for installing underground pipe, conduit, or cable without digging a trench. A surface-launched drilling rig follows a shallow arc along a prescribed bore path to avoid surface obstacles such as roads and wetlands.

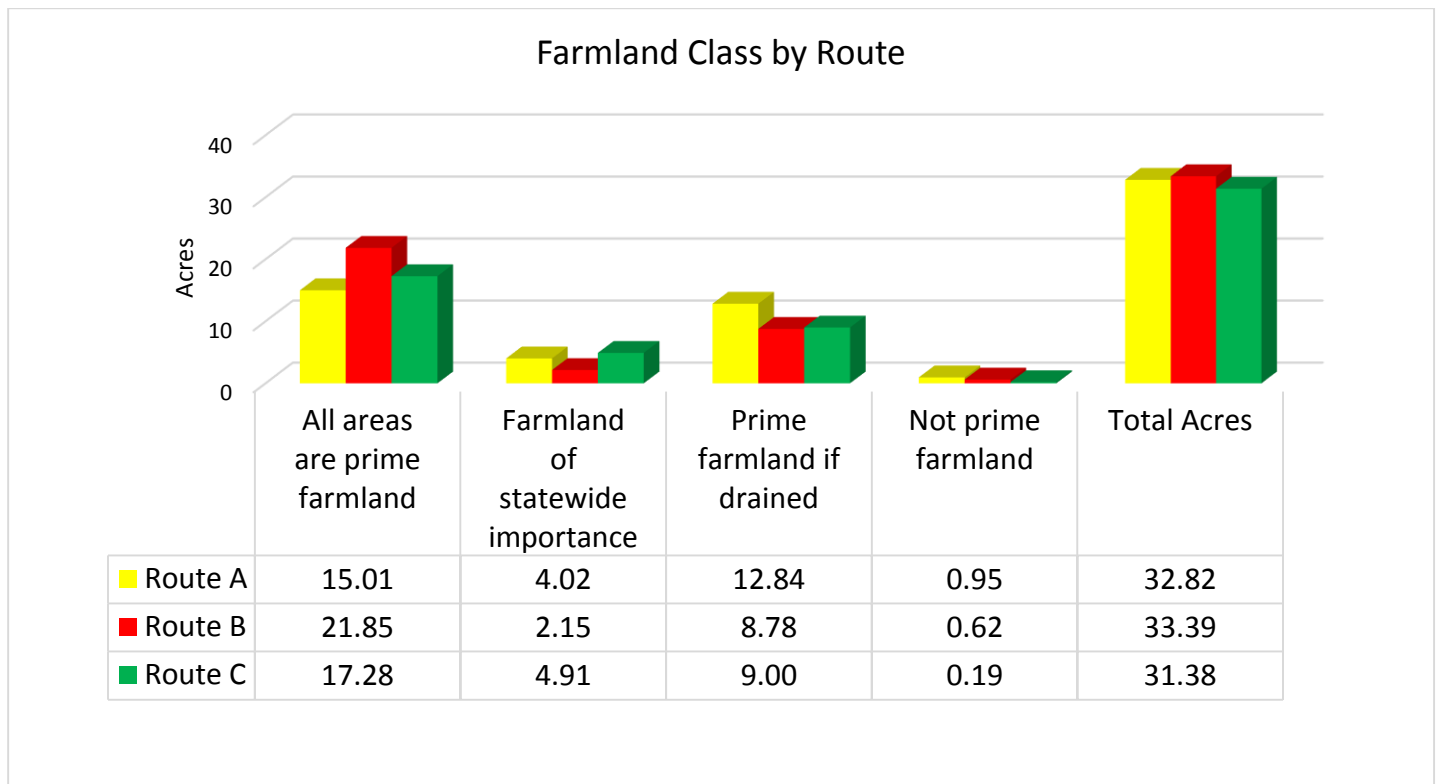
## AGRICULTURAL SETTING

The land use in the vicinity of the proposed project is mostly developed. Developed land is not typically the site of agricultural production. However, the farm operations that are found in this area (nurseries, Christmas trees, and cash grain) are ones that are more compatible with urban neighbors than the typical livestock operation. County profiles describing the agricultural sectors in Washington and Ozaukee Counties are included in Appendix III.

### General Soils Description

In general, the amount of prime farmland and prime farmland where drained ranges from 27.85 acres for Route A to 30.66 acres for Route B, and 26.28 acres for Route C. Refer to Figure 4.

**Figure 4. Soils Classification**



Prime farmland is land best suited for producing food, feed, forage, fiber, and oilseed crops, and is available for these uses. Prime farmland could be used as cropland, pasture land, range land, forest land, or other land use, but not urban built-up land or water bodies. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops economically when treated and managed, including water management, according to modern farming methods. The criteria for identification of prime farmlands are entirely related to soil characteristics and other physical criteria. (USDA, NRCS) Non-prime soils have limitations in

terms of agricultural production and may be more susceptible to damage from pipeline construction.

### **Farmland Preservation**

The state of Wisconsin Farmland Preservation Program provides counties, municipalities, and landowners with tools to aid in protecting agricultural land for continued agricultural use and to promote activities that support the larger agricultural economy. Through this program, counties adopt state-certified farmland preservation plans, which map areas identified as important for farmland preservation and agricultural development based upon reasonable criteria. Farmland owners may receive tax credits on their farmland if it is zoned for exclusive agricultural use, included in an Agricultural Enterprise Area, and/or is covered by a Farmland Preservation Agreement as long as they follow state standards for soil and water conservation.

DATCP certified both the Ozaukee County and the Washington County Farmland Preservation Plans in 2013. Neither the city of Mequon in Ozaukee County nor the village of Germantown in Washington County has adopted an exclusive agricultural zoning ordinance. In addition, none of the farmland that could be affected by the proposed project is covered by an Agricultural Enterprise Area or a Farmland Preservation Agreement.

### LANDOWNER COMMENTS

The following table lists the acreages of easement, permanent and temporary combined, that would be acquired from farmland owners for each of the alternative routes. The estimates for Route A and Route B were provided by Wisconsin Gas and are slightly higher than the DATCP estimate in previous figures. DATCP's estimate only included cropland and pasture, while Wisconsin Gas' figures also included other affected land types on parcels with cropland or pasture. Wisconsin Gas did not provide any figures or data for Route C, so those amounts are DATCP's estimates of affected cropland and pasture.

**Table 1. Acres of Easements to be Acquired from Affected Farmland Owners**

Farmland Owners	Route A	Route B	Route C
Linda C. Bratt et al.	0	0	2.90
Burczyk Family Revocable Living Trust	1.78	0	0
Anthony Consiglio	1.71	0	0
Eschrich Family Ltd. PTSH	2.27	0.77	2.87
Glenn & Judith Helgeland	4.08	4.08	4.08
Kenneth & Elfrieda Kohlwey	2.15	0	0
Rick & Marsha Lemke LLC	2.21	0	0
Robert C. Lemke & Cheryl L. Lemke 2006 Revocable Trust	2.70	2.70	0
Lemke Family LLC	0	1.10	0.37
Lemke Seed Farms, Inc.	0	4.30	0
Mader Commercial LLC	0	1.94	0
Gloria A. Neu Revocable Living Trust	2.10	1.70	2.10
Noffke Tree Farms, Inc.	2.16	0	0
Patlem Farms LLC	1.49	1.49	0
Caroline M. Pedigo & Frank J. Mikul	0	1.37	0
Ruben Trust	0	3.23	3.23
Danny & Linda Stauss	1.41	6.01	6.01*
Wayside Nurseries, Inc.	9.57	10.96	9.82
Acquisitions from multiple landowners, each less than one acre	1.44	0.60	0.28
<b>TOTALS</b>	<b>34.97</b>	<b>40.25</b>	<b>31.66</b>

\*Since the impacts appear to be the same for Route B or C, this number was adjusted to match the figure Wisconsin Gas provided for Route B.

The Glenn and Judith Helgeland property would be affected by a laydown yard no matter which route is selected. Laydown yards are typically established on property where the owner(s) voluntarily agrees. This land would be restored after the project is complete.

DATCP contacted several of the farmland owners by phone and mail to inquire about their farm operations and the potential impacts this project could have. Their responses are summarized below.

**Farmland Owner:** Ruben Trust (Don Ruben)  
**Potential Acquisition:** 1.62 acres of permanent easement and 1.61 acres of temporary easement for Route B or Route C

Mr. Ruben indicated that the existing natural gas pipeline on his property has not created any problems for him or the management of his property and he does not anticipate any problems from a new pipeline.

**Farmland Owners:** Danny and Linda Stauss  
**Proposed Acquisition:** 0.36 acre of permanent easement and 1.05 acres of temporary easement for Route A, and 3.41 acres of permanent easement and 2.60 acres of temporary easement for Route B or Route C

Danny and Linda Stauss own 57 acres of land that is all cropland. They rent additional cropland including some from the Mequon Nature Preserve, which would be affected by Route C. Typically, they grown corn, soybeans, and wheat.

The owners indicated that Route C would cut through the middle of their field, but Routes A and B would run along the edge of it. There are drained tiles on the land they own as well as on the land that they rent. They are concerned that the disturbed land will take many years to return to its current productivity level.

**Farmland Owner:** Wayside Nurseries, Inc.  
**Proposed Acquisition:** 4.99 acres of permanent easement and 4.58 acres of temporary easement for Route A; 6.01 acres of permanent easement and 4.95 acres of temporary easement for Route B; and 9.82 acres of permanent and temporary easement combined for Route C.

Route A would cross a portion of this property. At this location, approximately 50% of the proposed pipeline route is along the Wayside Nursery, Inc. property line and is also adjacent to existing farm road(s). To the south, the rest of the proposed pipeline route bisects the property. Most of this portion of the route continues to

follow an existing farm road. Because the pipe is buried, Route A will not impact landowner access. Wisconsin Gas intended to minimize the impacts to the Wayside Nursery by following the farm road.

## **POTENTIAL ADVERSE IMPACTS OF PIPELINE CONSTRUCTION ON AGRICULTURE**

Many aspects of agricultural operations and productivity can be adversely affected by pipeline construction traversing fields. These include:

- the immediate direct interference with farm operations on the pipeline construction ROW and adjacent areas due to pipeline construction and construction of temporary access roads;
- soil erosion and runoff during construction;
- interruption of or damage to irrigation systems and surface and subsurface drainage systems, grazing, fencing, and row crops;
- flooding of fields due to re-channeling of water encountered in the trench in wet conditions and displacement of soil strata from the pipe, trench, and reconfigured soil profile.

Additional impacts that may have long-term effects on agricultural productivity in the pipeline ROW and adjacent fields include:

- topsoil inversion and mixing with subsoil and spoil material;
- subsoil erosion and mixing with spoil material;
- deep compaction of subsoil;
- ponding and drainage seeps from altered surface and subsurface drainage profiles;
- inadequate restoration leading to increased rock content, and surface contours in the ROW that do not match the original character.

### **Topsoil Mixing**

#### *Potential Adverse Impact*

Good agricultural topsoil is an invaluable resource that needs to have priority in preservation. Mixing of topsoil with the underlying subsoil and/or parent material will reduce tilth, organic matter content and cation exchange capacity, and alter soil structure and distribution of particle sizes (particularly water stable aggregates). The mixing of soil layers can also increase the number of rocks found at the surface and increase the concentrations of harmful salts near the surface. Rocks larger than three inches can damage farm equipment and reduce soil productivity. Once mixed, full restoration would require transporting replacement topsoil of similar quality from an off-site location, which would be expensive. Therefore preventing the destruction or mixing of the topsoil is more cost and time effective.

Topsoil mixing can occur even under dry conditions during the grading and re-grading of the pipeline ROW before and after construction, as well as during construction and backfilling of the trench. If the topographic profile horizontally across the ROW is over 6 inches, and the topsoil layer is less than 12 inches, significant long-term damage can occur to agricultural productivity. To avoid this, stripping of topsoil to a depth of at least 12 inches is needed not just over the trench and spoil storage area, but across the entire ROW width. This includes the work and traffic area, and excludes only the area used to store the segregated topsoil.

Soil mixing is a greater danger when soils are wet. The moisture and precipitation pattern expected during construction must be taken into account in planning adequate mitigation measures to protect topsoil from mixing. In susceptible soils, even one inch of summer rainfall over five of ten days can cause ruts exceeding seven inches in depth under normal construction equipment traffic.

#### *Protocols to Avoid Topsoil Mixing/Inversion*

The pipeline construction process for this project will apply “full corridor topsoil removal” on all agricultural lands, unless a landowner requests only “partial corridor topsoil removal”. This is being done to prevent the possibility of topsoil mixing with subsoil during construction. With full corridor topsoil removal, the entire ROW, with the exception of the topsoil storage area on the edge of the working side of the trench, is stripped of topsoil to a depth of at least 12 inches which is then stored separately from the spoil material. This occurs prior to the operations of grading, construction, backfilling, de-compaction, and re-grading of subsoil.

In this way, work can be continued under wet conditions without damage to the topsoil. Rutting, inversion and compaction is then limited to the lower-fertility subsoil, which can be subsequently de-compacted during the restoration process following construction, after which the topsoil is replaced.

#### **Fertile Subsoil Mixing with Underlying Parent Material**

##### *Potential Adverse Impact*

As was the case with mixing topsoil and subsoil, long-term crop productivity loss may also result from mixing glacial till or outwash, or sandy soil, with the subsoil layer, which is often of relatively high quality in many parts of Wisconsin.

It has been estimated that, failing to apply the triple-lift soil segregation method when the soil profile calls for it could result in up to a 30 percent yield loss immediately after construction. Just as mixing of this gravelly or otherwise inappropriate material with topsoil must be avoided, its mixing with silty subsoil could also have long-term adverse effects on productivity.

##### *Mitigation of Mixing of Fertile Subsoil with Underlying Parent Material*

To avoid mixing the fertile subsoil with underlying gravelly material in such areas, three separate storage piles are required: one for the topsoil to a depth of 12 inches; a second for the subsoil to its depth of up about to 2 or 3 feet; and a third for the underlying parent material. This technique, sometimes called “triple trenching”, will here be referred to as the “triple-lift” method. This is the preferred approach in areas with a gravelly material under a highly fertile subsoil layer. Please note that not all soils benefit from the method. In order for this method to be of value, there must be a significant difference between the upper subsoil layer and the lower subsoil layer or parent material.



Gravels are defined as soils greater than 0.1 inch in diameter. This is approximately equivalent to those soil units, which don't pass a #4 sieve (4.76 mm = 0.18 in) for which data is available by soil map unit in the county soil surveys for the project area in Wisconsin.

### **Increased Rock Content of Soil**

#### *Potential Adverse Impacts*

Because the pipeline trench will be excavated to a depth of 6 feet, rocky subsoil or glacial material may be brought to the surface and mixed with subsoil in the subsoil/spoil storage pile. Even where the triple-lift method is used, additional rocks may be spread through the subsoil layer.

In many areas along the ROW, this material may have greater rock content than the topsoil and subsoil layers typically do. Pipeline companies typically pad the area around the pipe with sand or stone-free subsoil to avoid damage to the pipe. Given the subsurface volume displaced by the pipe itself and by the padded stone-free area, the upper subsoil profile may be subject to a higher rock content than was present before excavation. Through frost heave dynamics, such rocks may eventually end up near the soil surface. Large stones at the surface can damage farm machinery and lead to added costs to landowners for removal.

#### *Mitigation Measures*

To avoid increasing the rock content of the subsoil, which eventually leads to rock-migration into the plow layer through frost-heave action, it is important that excess rocks of 3 inches in diameter or more are removed from the spoil pile before backfilling the trench. They should be moved to a site agreed upon with each landowner or off-site. Excess rocks should not be spread across the ROW, or added to the topsoil pile, or to other farm fields. In section 10.j of the AMP, Wisconsin Gas has indicated that the size, density, and distribution of the rocks remaining on the construction work area will be the same as adjacent areas not disturbed by construction. DATCP recommends that any rocks larger than 3 inches in diameter be removed from restored cropland.

### **Soil Compaction**

#### *Potential Adverse Impact*

Compaction of subsoil and topsoil is another major adverse impact that can result from pipeline construction. Compaction reduces the uptake of water and nutrients by crops, restricts rooting depth, decreases soil temperature, increases the proportion of water-filled pore space at field moisture capacity, decreases the rate of decomposition of organic matter, decreases pore size and water infiltration, and increases surface runoff. The greater the depth at which soil compaction occurs, the more persistent it is. Even one pass of heavy equipment on the soil surface can cause 70 to 90 percent of the compaction impacts. Wet soils are more subject to compaction. Thus, potential damage from compaction may be greater where hydric soils (i.e. high water table) are present along the pipeline route. Also, the plow layer may appear dry, but the subsoil may still be saturated and subject to increased compaction potential during construction. Axle loads of 10 tons may cause compaction to a depth of 30 inches. (USDA NRCS, April 1996. Soil Quality

Information Sheet on Compaction; van Es and Schindelbeck, 1990, Soil Compaction II: The Subsoil. What's Cropping Up, Vol. 1, No. 5).

*Soil Restoration: Removing Compaction in Subsoil and Topsoil*

There can be long-term damage to agricultural productivity from deep soil compaction due to pipeline construction without adequate and proper de-compaction protocols and the right equipment. Fortunately, with the proper techniques, there are few subsoils that cannot be adequately de-compacted. Deep tillage devices are typically used on the exposed subsoil of the work and spoil storage area, after the subsoil has been backfilled over the trench and time has been allowed for trench settling.

The best choice for deep ripping is an industrial V-ripper, which should have 4 to 5 heavy-duty shanks, spaced 30 to 36 inches apart and pulled with 40 to 50 horsepower per shank. (It is best to use this with an articulated, 4-wheel drive tractor with the bulk of the weight in front.) Such rippers are often not readily available to typical farm operators. Other types of equipment such as chisel plows or paraplows may also be effective under some conditions. Multiple passes with the deep de-compaction device are essential over the compacted subsoil in the ROW until sampled penetrometer readings in the ROW match those in adjoining fields that have not been disturbed by construction. The typical depth of ripping is 18 to 24 inches below the exposed subsoil. Multiple straight and zigzag patterns of ripping need to be used on different passes.

In lacustrine soils with intensive tile drain systems, deep ripping is usually limited to the top 6 to 8 inches of the subsoil layer because compaction from pipeline construction is usually undetectable below 8 inches, and deeper ripping could destroy the load-bearing capacity of the subsoil. However, in general, the presence of tile lines is no excuse to avoid fully doing the deep ripping phase of the soil restoration process. Without adequate de-compaction of subsoil, long-term productivity losses may persist on agricultural lands. Any damage to tiles during the deep ripping process must be treated by the pipeline company as a normal and necessary part of agricultural remediation expenses and replaced at their expense. Deep ripping and the other restoration steps that follow it must be done only in conditions of low soil moisture to prevent irreparable damage to soil from mixing or additional recompaction.

It must be emphasized that delegation of decompaction to farm operators in most cases is not recommended. They generally lack the proper equipment to correctly restore productivity after pipeline construction. The scope and depth of decompaction from pipeline construction greatly exceeds that resulting from routine farm operations.

Penetrometer measurements are taken according to a sampling protocol to ensure decompaction has occurred at representative sites throughout the topsoil and subsoil profile. It is very important that moisture conditions be comparable on and off the ROW throughout the soil horizon at the time of sampling since at the same bulk density, a soil will give a much lower penetrometer resistance reading when wet than when dry. (Voorhees, 2001)

Once effective deep decompaction of subsoil has been established by penetrometer readings, rocks have been removed and topsoil replaced, a final subsoil shattering may be necessary to neutralize any additional compaction to the subsoil that accrued from the previous use of heavy equipment in decompaction. This is done using an angled 3- or 4-leg tool bar, with leg spacing set no greater than 2 feet. Equipment commonly used for this includes a four-legged paratill or paraplow with the depth wheels disengaged to allow for maximum adjustment of depth of penetration. The angled legs are pulled slowly at an 18-inch depth (up to a maximum of 24 inches) using 50 horsepower per leg by a 4-wheel drive articulated tractor with the bulk of the weight in front traveling at a rate of 2.5 to 3 mph. This must be done only in conditions of low moisture to prevent damage to the soil profile and sloughing or mixing. Disking should not be used for subsoil shattering because it can mix and re-compact the subsoil and topsoil.

## **Drainage**

### *Potential Adverse Impacts*

In addition to damaging drainage tile, pipeline construction can permanently alter the soil profile, thereby affecting drainage patterns. The resulting de-stratification, or alteration, of soil horizons in the trenching operation may result in ponding or seeps that cause losses of crop yields. The possibility for the emergence of these problems should be carefully monitored and steps taken to do any needed remediation as soon as possible. It may take several years for these problems to become apparent, or even longer if there is a dry year. New drainage tiles and systems may be required to correct problems that arise. The location of significant seeps along the trench walls must be carefully monitored during the open construction phase of the project since the trench intercepts lateral drainage and causes seepage along the trench wall.

In some cases, seeps may be present prior to construction, but may be made more serious by construction. It is important to document the existing drainage patterns and any drainage problems as part of pre-construction planning. It is possible for pipeline construction to interfere with future plans for drainage systems in a field.

Adjacent fields may be affected by the change in the drainage profile due to the presence of a pipeline in the ROW. Future increases in surface flows to a landowner's fields may be exacerbated in some cases because of altered subsurface drainage profiles due to the pipeline.

### *Mitigation Procedures*

The AMP and BMP 04 require that all damaged tiles be permanently repaired prior to backfilling. Repaired tiles on or adjacent to the ROW must be functionally equivalent to what was there prior to construction, and must consist of materials of the same or better quality. Local tile contractors should be used wherever possible.

Temporary ditch plugs and permanent trench breakers are used to help deter the pipeline corridor from acting as a channel for underground water flows.

Wisconsin Gas will install any additional drainage tiles or other measures on agricultural land to properly drain wet areas on the permanent or temporary easements that were caused by pipeline construction. Where natural stratification has been altered, Wisconsin Gas should install subsurface intercept drain tiles where they determine in conjunction with the Environmental Consultant that this is needed to prevent surface seeps either in the ROW or on adjoining lands.

If a landowner is planning the installation of drainage tile within the next three years and drainage locations have been documented in writing, these documents should be provided to Wisconsin Gas prior to construction.

### **Trench Dewatering**

#### Potential Adverse Impacts

Before lowering the pipe into the trench, dewatering of the trench may be necessary to inspect the bottom of the trench for rocks. Any combination of weather, topography and/or hydric soils (i.e. those with a high water table) can result in conditions of wet trenching along parts of the pipeline route that are farmed. In this case, extra care is needed to avoid mixing, compacting, and erosion of subsoil. Trench dewatering is typically done in such cases. If done improperly, it can result in erosion of soil from the ROW; sedimentation and deposition of gravel, sand, or silt onto adjacent agricultural lands; and inundation of crops.

#### Mitigation Measures

BMP 05: Trench Dewatering, requires identification by Wisconsin Gas contractors of low areas and hydric soils that are likely to collect water during construction, as well as suitable areas for the discharge of water accumulated within the pipe trench or other excavated areas. Wisconsin Gas' contractors are required to structure work to minimize accumulation of water within the trench and to get Wisconsin Gas' approval for all discharge locations and techniques to comply with BMP 05. Discharge locations must be well-vegetated areas that prevent the water from returning to the ROW; be as far from backfilling activities as possible; and avoid deposition of gravel or sediment onto fields, pastures, or watercourses. If delivery of trench water onto cropland is unavoidable, crops cannot be inundated for more than 24 hours without incurring severe damage. Discharge of water from non-organic farms or from hydrostatic testing is not allowed to flow onto adjacent organic farm operations.

Silt or sediment extraction from the trench is required to be minimized by preventing the intake from touching the bottom or sides of the trench, and by ensuring that the intake is supported by a flotation device. Dewatering will be monitored by Wisconsin Gas and stopped whenever necessary to correct conditions and practices inconsistent with BMP 05. When construction in hydric soils creates wet trenching and dewatering activities that cause unavoidable damage, Wisconsin Gas will reasonably compensate the landowner for damages and restore the land and crops to pre-construction conditions.

## **Erosion and Conservation Practices**

### *Potential Adverse Impacts*

Construction sites provide the risk of soil erosion due to the destabilization of soil horizons, the piling of loose soils, and the extensive use of machinery and wheeled vehicles that affect the soil. During wet conditions, risks to soil from erosion are magnified. Wet conditions may be the normal soil condition on certain parcels along the pipeline route where there is a shallow depth to the water table, resulting in “wet trenching.” Trench dewatering can also result in flooding, erosion and sedimentation on farm fields off the ROW unless appropriate measures are applied to prevent this.

As described in an earlier section, both topsoil and subsoil along the project routes are valuable resources. Significant erosion of either layer could have an adverse effect on long-term productivity on agricultural lands. Where a pipeline ROW runs up and down gently sloping soils, the collection of surface runoff in the tracks left by construction equipment can erode significant amounts of soil in fields.

### *Mitigation Methods*

To avoid erosion, construction and restoration should not proceed if conditions are excessively wet. Wisconsin Gas’s AMP, Section 10 f, requires that the construction contractor meet or exceed DNR standards for erosion control on construction sites. These standards are described on the DNR’s website at: <http://dnr.wi.gov/topic/stormwater/standards/index.html>.

The AMP’s Section 8 allows the Environmental Consultant to temporarily halt construction or restoration activities when the soil conditions are unfavorable due to weather conditions.

Existing erosion control practices such as diversion terraces, grassed or lined waterways, outlet ditches, water and sediment control basins, vegetated filter strips, etc. damaged due to construction activities will be restored to pre-construction condition.

Temporary erosion controls must be properly maintained on agricultural lands on a daily basis throughout construction and restoration. Whenever necessary, they must be reinstalled until permanent erosion controls are installed or restoration is completed. The details of erosion controls are described in AMP Sections 10.f and 10.i, and in BMP 03.

Wisconsin Gas will ensure that the construction contractor will structure work in a manner consistent with the requirements of the AMP and BMP’s and maintain an adequate supply of approved erosion control materials on hand.

## **Temporary Access Roads**

### *Potential Adverse Impacts*

Temporary access roads may need to be created during the construction process to allow ingress and egress of personnel and equipment where access from public roads is not feasible.

Such roads often cross agricultural fields. The potential effects of building access roads over soils are the same as many of those suffered by soils on the pipeline ROW. Topsoil can be mixed with subsoil, topsoil and subsoil can be compacted, drainage can be disturbed, and erosion can occur. Any of these effects can result in the loss of agricultural productivity on affected soils.

### *Mitigation Measures*

Wisconsin Gas will use existing farm roads to access the ROW whenever possible. The Company must consult with landowners before siting temporary access roads. (AMP, Section 10.b) Where new access roads are created on agricultural land, Wisconsin Gas will strip the topsoil and temporarily stockpile it. Access roads will be designed to allow proper drainage and minimize soil erosion. Geotextile construction fabric may be placed below any imported rock used to build the road, in order to protect the subsoil. If desired by the landowner, temporary roads will be left in place after construction. If removed, the same soil restoration practices should be used on the temporary access road area as are used on the pipeline ROW to mitigate compaction. Any disturbance to drainage tiles or drainage patterns should be remediated as is done in the ROW. During the restoration phase, temporary and existing access roads will be restored to preconstruction conditions. New temporary access roads will be removed unless there is an agreement in writing between the landowner and Wisconsin Gas for them to remain.

### **Trees**

Route A: The Noffke Tree Farms, Inc. and Wayside Nurseries are commercial nurseries that raise trees/shrubs. They will have tree removal within the permanent and temporary easements and will be compensated for removal of that tree crop. The permanent easement is 50 feet wide and Wisconsin Gas typically requires at least a 20-50 foot wide corridor, located directly above the pipe, to remain clear of trees for pipe safety and access purposes. In order to minimize future agricultural impacts to these owners, while the 50 foot permanent easement will remain the same width, Wisconsin Gas may further minimize the “tree-free” corridor to only 20 feet to allow use of as much as the permanent easement for tree crops as reasonably and safely possible. Landowners will be compensated for the loss of these trees and may be compensated if there is future loss of tree crop within the permanent easement. If these properties are removed from agricultural use in the future, Wisconsin Gas would reserve the right to remove any trees within the 50 foot permanent easement corridor, as those trees would no longer be an agricultural crop, and as the trees increase in size, the root system will create a safety and access hazard issue.

Other properties may have incidental tree removal in locations where the pipeline is located adjacent to a tree/brush line along property lines. In a few cases, the pipeline route runs through a wooded area. If trees will be removed, the landowners may choose to keep the wood, which will be cut and stacked at the edge of the construction corridor. If they decline, the cut wood will be removed from the site. Landowners will be compensated for the loss of these trees.

The following properties may have trees removed:

Route A: Anthony Consiglio (0.05 acres), Carmelo Fazzari (0.06 acres), Eschrich Family Ltd PTSH (0.06 acres), Noffke Tree Farms, Inc. (2.15 acres), and Wayside Nurseries (0.64 acres).

Route B: Caroline M Pedigo (0.77 acres), Danny and Linda Stauss (0.10 acres) and Wayside Nurseries (2.86).

Route C: Eschrich Family Ltd. PTSH (0.06 acres), Danny and Linda Stauss (0.10 acres), and Wayside Nurseries, Inc. (2.86 acres).

Wisconsin Gas determined woodland areas by aerial photo and did not field verified them. The area of “wooded” acreage on the Noffke Tree Farms, Inc. and Wayside Nurseries may have changed due to new plantings/harvesting of trees on their properties since the time the aerial photo was taken.

### **Tree and Stump Removal**

#### *Potential Adverse Impacts*

Typically, trees are removed from the entire ROW for a pipeline project. Trees would be permitted to regrow or be replanted in areas covered by temporary easements. However, in permanent easements, trees would not be permitted in most or all of that area. There may be some areas of the permanent easement where Wisconsin Gas would permit some trees to be grown. Before an easement is signed, landowners who are concerned about this issue should ask the Wisconsin Gas Land Agent where trees will and will not be permitted to grow within the acquired ROW.

#### *Mitigation Measures*

Wisconsin Gas should consult with landowners before disposing of any trees or stumps that need to be removed from the pipeline ROW. Landowners retain ownership of any trees that must be removed from their land and they have the right to dispose of them as they see fit. If a landowner wants to keep the trees, they are typically stacked in a mutually agreed upon location for the landowner’s use. Any trees or brush that the landowner doesn’t want will be disposed of by Wisconsin Gas or its contractors. Disposal could consist of burying, burning, or removing the brush and stumps from the property. Typically, tree stumps are only excavated and removed from the trench area. Stumps in other parts of the ROW are usually cut at or near ground level. Refer to Section 10.c of the AMP for additional details about vegetation removal. Black cherry or black walnut trees must be stockpiled or disposed of in ways that do not allow them to be accessible to livestock.

### **Irrigation**

#### *Potential Adverse Impacts*

Pipeline construction can interfere with the operation of field irrigation systems. Crops outside of the proposed pipeline ROW could also be negatively affected if irrigation is interrupted.

### *Mitigation Measures*

Wisconsin Gas has the right to temporarily disrupt irrigation systems that intersect the pipeline during construction. However, they must notify the landowner beforehand to establish a mutually acceptable amount of time that the system can be taken out of service. The maximum period of time out of service without reducing yield on field corn is 5 – 7 days during the period from silking - tasseling to the finished crop. Earlier delays in meeting irrigation requirements may result in a smaller plant, but should not reduce grain production. Vegetable crops will have a shorter period between irrigations. Wisconsin Gas will establish with the landowner or tenant, an acceptable amount of time that the irrigation system may be out of service.

All irrigators along the pipeline route are urged to practice irrigation scheduling that records the daily evapotranspiration, rainfall, and amount of easily available water in the root zone. The irrigation schedule for the crop over the season will define any periods when the crop was stressed and yield and/or quality was reduced.

Any damages to the system (well, pumping plant, irrigation system – center pivot, traveling large volume sprinkler, buried supply lines, electrical supply lines) caused by the pipeline construction should be repaired as soon as possible.

## **Fencing**

### *Potential Adverse Impacts*

The construction process may in some cases necessitate severing fences that are located where the pipeline ROW will cross. Construction can interfere with grazing on adjacent lands. This could be particularly problematic for rotational grazing operations, which depend on precise, scheduled grazing in particular areas.

### *Mitigation Measures*

Pre-construction planning should determine the presence of adjacent grazing operations, including rotational grazing, along the pipeline route. Efforts should be made to avoid severely disrupting grazing operations and to plan the route to avoid them if possible, or to consult the landowner to schedule construction to minimize disruptions.

Fences severed by construction of the pipeline must be restored to their previous condition at the time of construction using new posts and wire. If work crews construct temporary fences, they must be kept in place until vegetation canopy closure in the corridor occurs, unless the landowner chooses otherwise. Temporary fences and gates will also be installed where necessary at landowner request to allow continued grazing by livestock across the ROW. Tension on such fences must be adequate to prevent sagging, and there must be a distance of at least 3 to 5 feet from the pipe. Fence posts should not be placed on the backfilled trench. Temporary fences will be removed following construction, unless the landowner chooses otherwise. These measures are described in the AMP, Section 10.d.



## **Weed Control**

### *Potential Adverse Impacts*

Noxious weeds may be spread in the course of moving machinery and vehicles from parcel to parcel during the construction process. Roads, including temporary access roads and off-road pipeline corridor transit lanes, can provide access for weeds into new areas. From the pipeline ROW, weeds may then spread to adjacent farm fields.

### *Mitigation Methods*

Wisconsin Gas has indicated that where the Environmental Consultant (EC) sees evidence that weed growth on stockpiled topsoil could present a problem to adjacent cultivated fields, the Environmental Consultant will consult with the Contractor to have the weeds removed or killed prior to topsoil replacement. Refer to AMP Section 10.h. Wisconsin Gas will consult with the landowner if spraying will be done to account for the owner's preference in cover crop and plans for the next year's crop. Any necessary herbicide spraying will be done by a state-licensed applicator. Wisconsin Gas will not apply herbicides on organic farmland.

## **Seeding and Seedbed Preparation**

### *Potential Adverse Impacts*

If Wisconsin Gas seeds over the ROW without consulting the landowner, this may interfere with cropping plans, or may result in a cover crop that is less than desirable from the landowner's standpoint.

### *Mitigation Measures*

Following the steps in BMP 07: Seeding and Seedbed Preparation, Wisconsin Gas would plant over the ROW only if the landowner agrees. BMP 07 specifies that seed mixes should be determined "in consultation with" the landowner when possible. Any seedbed preparation and seeding done by Wisconsin Gas must be done at the correct time and at the proper depth to promote adequate seed-soil contact on cropland or pasture requiring seeding. Seeding is to be completed immediately after seedbed preparation if weather permits. Temporary erosion controls will be used if weather does not permit immediate seeding. If seeding is done outside of recommended windows, temporary erosion control methods such as mulching or temporary cover will be used.

## **Organic Farms**

### *Potential Adverse Impacts*

Soil adhering to pipeline construction equipment can transport animal and plant diseases from field to field. In addition, the transport of pesticides or genetically modified organisms (GMO's) can cause significant economic losses.

For certified organic farms, pertinent contamination issues can involve a very broad range of "prohibited substances." Spread of prohibited substances to organic farms can occur directly through construction machinery, or indirectly through changes in surface or subsurface drainage patterns that impact water flowing within or between fields.

According to the certification standards of the National Organic Program (NOP), owners of organic operations are responsible to manage potential contact with other substances not approved for use in organic production and must outline steps they will take to avoid such unintentional contact (Preamble, p. 9, NOP, USDA).

#### *Mitigation Measures*

BMP 09: Certified Organic Farms describes Wisconsin Gas' plans for working with owners of certified organic farms. At the time of the publication of this report, no certified organic farms or any farms in the process of becoming certified organic have been identified along any of the potential project routes.

#### **Induced Current on the Pipe**

A small direct (DC) current is applied to pipelines for cathodic protection to prevent corrosion of the pipe material. Because pipelines, particularly if located in transmission line corridors, can be carriers of induced alternating (AC) current, the pipeline industry takes precautions to discharge AC current along the pipe into the ground. This is necessary both to protect the integrity of the DC cathodic protection system as well as to prevent continued flow of AC current in the pipe. If induced AC current is not grounded adequately, the AC discharge on the pipeline "can, in the long term, cause serious metal loss on the pipe wall and leaks." (Smart, Oostendorp and Wood, 1999)

#### **Enforcement of the AMP and BMPs and the Role of the Agricultural Inspector**

Wisconsin Gas will employ a Construction Manager (CM), an Environmental Consultant (EC), and an Environmental Manager (EM) to provide oversight and enforcement of various plans and permits including the AMP and BMPS. The EC will monitor construction activities for compliance with the AMP and BMPs. He/she will be familiar with general agricultural operations including agronomy and soil conservation as well as general construction.

Contractors will be required to structure their construction activities to be consistent with the AMP and the BMPs. Wisconsin Gas will work with landowners to ascertain existing agricultural operations that may require special attention, such as conservation practices, location of above and below ground structures or obstructions, such as drain tile, irrigation systems, fencing, livestock, certified organic lands, proposed new drainage systems or other farm technology.

Refer to Appendix II for the complete text of the AMP and BMPs.

### **Appraisal and Compensation**

Wisconsin Gas will provide an appraisal of the affected property to the landowners. This will be the basis for their compensation offer. The landowners have the right to obtain their own appraisal of their property. They will be compensated for the cost of this appraisal if the following conditions are met.

1. The appraisal must be submitted to Wisconsin Gas within 60 days after the landowner receives the company's appraisal.
2. The appraisal fee must be reasonable.
3. The appraisal must be complete.

The amount of compensation is based on these appraisals and is established during the negotiation process between Wisconsin Gas and the individual landowners. An appraisal is an estimate of fair market value. Wisconsin Gas is required to provide landowners with information about their rights in this process before negotiations begin.

Landowners should keep in mind that any easement they sign with Wisconsin Gas is an individual contract. When considering whether or not to sign an easement, landowners should examine the language it contains to make sure it contains all of the terms that the landowner and Wisconsin Gas reached during negotiations including the language in the Agricultural Mitigation Plan and the Best Management Practices. The plan and practices are not binding on negotiations between landowners and Wisconsin Gas. Landowners can choose to waive any or all of the rights and practices described in the AMP and BMPs. In addition, if landowners reach agreement with Wisconsin Gas on specific requirements on their property, they should make sure that the agreements are reflected in their easement document. Landowners may want to seek legal advice if they have any questions about this process, and should make sure that any attorneys hired have expertise and experience in eminent domain law and procedures.

## **CONCLUSIONS**

Construction of the proposed pipeline project has the potential to affect agricultural lands along all three of the proposed routes. Route A would affect 32.82 acres of farmland, Route B would affect 33.39 acres of farmland, and Route C would affect 31.38 acres of farmland. On agricultural land, the proposed ROW would be 100 feet wide consisting of 50 feet of permanent easement and 50 feet of temporary easement.

Pipeline construction can adversely impact farmland through the following:

- mixing of topsoil and subsoil;
- compaction of topsoil and subsoil;
- mixing of fertile subsoil with underlying glacial material;
- long-term changes in field drainage due to the introduction of the underground pipeline channels;
- soil erosion;
- interference with surface and subsurface drainage, irrigation, fencing, and grazing; as well as flooding of fields to discharge excess trench water;
- the spread of diseases from parcel to parcel unless proper protocols are observed;
- interference with field operations from temporary access roads;
- migration of weeds from the pipeline ROW; and
- the rise of excess rocks to the surface interfering with farm machinery

To avoid or minimize agricultural impacts, Wisconsin Gas (WG) has prepared an Agricultural Mitigation Plan (AMP) and Best Management Practices (BMP's). The AMP and BMPs, which set forth detailed technical and performance standards for construction and restoration, are essential to the protection of agricultural land. However, the value of these documents can be realized only to the extent they are faithfully implemented during the construction and restoration process. The goal of the AMP and BMPs is to protect the agricultural resources and farmland owners along the route. However, nothing in the AMP or BMP's prevents landowners from negotiating stronger measures in their individual negotiations with Wisconsin Gas. In addition, there may be areas of concern to landowners that are not addressed by the AMP or BMPs.

DATCP supports the creation and use of the AMP and BMPs for this project. DATCP also supports the hiring of a well-qualified Environmental Consultant to ensure that damage to agricultural land as a result of the proposed project is avoided, minimized, or mitigated.

The role of the Environmental Consultant is crucial in enforcing the AMP and BMPs; reporting incidents of noncompliance; recommending corrections when processes are being carried out in ways that violate the AMP or BMPs; and stopping the construction task when serious violations occur.

Following the completion of initial restoration, Wisconsin Gas should respond to landowner concerns and take steps to mitigate observed problems in the field caused by the pipeline project.

**END NOTES**

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## **APPENDIX I: Agricultural Impact Statements**

*DATCP is required to prepare an AIS whenever more than five acres of land from at least one farm operation will be acquired for a public project if the agency acquiring the land has the authority to use eminent domain for the acquisition(s). DATCP has the option to prepare an AIS for projects affecting five or fewer acres from each farm. An AIS would be prepared in such a case if the proposed project would have significant effects on a farm operation. The agency proposing the acquisition(s) is required to provide DATCP with the details of the project and acquisition(s). After receiving the needed information, DATCP has 60 days to analyze the project's effects on farm operations, make recommendations about it, and publish the AIS. DATCP will provide copies of the AIS to affected farmland owners, various state and local officials, local media and libraries, and any other individual or group who requests a copy. Thirty days after the date of publication, the proposing agency may begin negotiating with the landowner(s) for the property.*

*The following Wisconsin Statute provides information on the purpose and role of the AIS.*

### **Section 32.035 of the Wisconsin Statutes describes the Agricultural Impact Statement:**

**(1) DEFINITIONS.** In this section:

- (a) "Department" means department of agriculture, trade, and consumer protection.
- (b) "Farm operation" means any activity conducted solely or primarily for the production of one or more agricultural commodities resulting from an agricultural use, as defined in s. 91.01 (1), for sale and home use, and customarily producing the commodities in sufficient quantity to be capable of contributing materially to the operator's support.

**(2) EXCEPTION.** This section shall not apply if an environmental impact statement under s. 1.11 is prepared for the proposed project and if the department submits the information required under this section as part of such statement or if the condemnation is for an easement for the purpose of constructing or operating an electric transmission line, except a high voltage transmission line as defined in s. 196.491(1) (f).

**(3) PROCEDURE.** The condemnor shall notify the department of any project involving the actual or potential exercise of the powers of eminent domain affecting a farm operation. If the condemnor is the department of natural resources, the notice required by this subsection shall be given at the time that permission of the senate and assembly committees on natural resources is sought under s. 23.09(2)(d) or 27.01(2)(a). To prepare an agricultural impact statement under this section, the department may require the condemnor to compile and submit information about an affected farm operation. The department shall charge the condemnor a fee approximating the actual costs of preparing the statement. The department may not publish the statement if the fee is not paid.

**(4) IMPACT STATEMENT.**

- (a) *When an impact statement is required:* The department shall prepare an agricultural impact statement for each project, except a project under Ch. 81 or a project located entirely within

the boundaries of a city or village, if the project involves the actual or potential exercise of the powers of eminent domain and if any interest in more than 5 acres from any farm operation may be taken. The department may prepare an agricultural impact statement on a project located entirely within the boundaries of a city or village or involving any interest in 5 or fewer acres of any farm operation if the condemnation would have a significant effect on any farm operation as a whole.

- (b) *Contents.* The agricultural impact statement shall include:
  - 1. A list of the acreage and description of all land lost to agricultural production and all other land with reduced productive capacity, whether or not the land is taken.
  - 2. The department's analyses, conclusions, and recommendations concerning the agricultural impact of the project.
- (c) *Preparation time; publication.* The department shall prepare the impact statement within 60 days of receiving the information requested from the condemnor under sub. (3). The department shall publish the statement upon receipt of the fee required under sub. (3).
- (d) *Waiting period.* The condemnor may not negotiate with an owner or make a jurisdictional offer under this subchapter until 30 days after the impact statement is published.
- (5) **PUBLICATION.** Upon completing the impact statement, the department shall distribute the impact statement to the following:
  - (a) The governor's office.
  - (b) The senate and assembly committees on agriculture and transportation.
  - (c) All local and regional units of government that have jurisdiction over the area affected by the project. The department shall request that each unit post the statement at the place normally used for public notice.
  - (d) Local and regional news media in the area affected.
  - (e) Public libraries in the area affected.
  - (f) Any individual, group, club, or committee that has demonstrated an interest and has requested receipt of such information.
  - (g) The condemnor.



## **APPENDIX II: Agricultural Mitigation Plan and Best Management Practices**

# WISCONSIN GAS LLC

## AGRICULTURAL MITIGATION PLAN

### Germantown Mequon Main Replacement Project

#### 1. INTRODUCTION

Wisconsin Gas LLC (“Wisconsin Gas” or the “Company”) proposes to replace an existing gas main in Southeastern Wisconsin (Washington, Milwaukee and Ozaukee Counties). The Germantown Mequon Main Replacement Project (the “Project”) would consist of replacing an existing 20” diameter 8.2 mile long gas pipeline which was installed in 1953 with a new 24” pipeline. Depending on the final route chosen, the new pipeline will be either 10.1 or 11.5 miles long. Construction is proposed to begin in February 2016 and completion by November 2017.

The Company has a longstanding commitment to working with landowners who may be affected by construction of various utility projects throughout the State of Wisconsin. The Company has a vested interest in working with landowners within the project to ensure their satisfaction with utility project construction and post-construction restoration.

The Company continues to be committed to restoring construction areas to pre-construction conditions with all our construction projects. This Agricultural Mitigation Plan (AMP) will help to assure this outcome within agricultural areas in the proposed gas main replacement corridor. The Company has prepared this AMP specifically to prevent or mitigate potential adverse impacts of the project on agricultural productivity, using construction and restoration procedures from other Company projects and modifying them as necessary.

#### 2. PURPOSE

The purpose of this AMP is to:

- provide a description of effective agricultural construction mitigation and restoration methods to be used on the project;
- establish personalized communication with agricultural landowners to ensure their unique concerns are addressed;
- provide agricultural landowners and tenants with a hotline for convenient contact access to the Company Representative;
- describe the job duties of the Company Agricultural Inspector (EC);

#### 3. PROJECT DESCRIPTION

There are two route alternatives under consideration and will be proposed to the Public Service Commission of Wisconsin ultimately for their review and selection of a route.

##### Route A (Proposed)

Route A is approximately 10.1 miles long. Approximately 48,093 feet of 24-inch steel main starting at the Company’s existing Menomonee Falls Gate station (1,800 feet northwest of the intersection of STH 175 & Maple Rd.), east along easement to Pilgrim Rd., then north along Pilgrim Rd. to Donges Bay Rd., then east along Donges Bay Rd. to 1,300’ west of STH 181, then south along easement to 900’ north of

W. County Line Rd., then east along easement to STH 181, then south along STH 181 to 175 feet south of the intersection of STH 181 & W. Glenbrook Rd.

There would be approximately 5,481 feet of 6-inch steel main starting at N. Granville Rd. & Donges Bay Rd. and ending at W. County Line Rd. & N. Granville Rd.

This route crosses approximately 15,029 linear feet (2.84 miles) of land that appears to be in agricultural use. Of that, 1,278 linear feet (0.24 miles) is within a Christmas tree farm. The pipeline will be installed via open cut trenching and horizontal directional drilling at these locations.

### **Route B (Alternate)**

Route B is approximately 11.5 miles long. Approximately 54,933 feet of 24-inch steel main starting at the Company's existing Menomonee Falls Gate Station (1,800 feet northwest of the intersection of STH 175 & Maple Rd.), cross STH 175 (west to east), then south to CTH Q, then east along CTH Q to STH 145, then north along STH 145 to 2,650 feet north of CTH Q, then east along easement to N. Granville Rd., then north along N. Granville Rd. to Donges Bay Rd., then east along Donges Bay Rd. to 1,300' west of STH 181, then south along easement to 1,450' south of Donges Bay Rd., then east along easement to STH 181, then south along STH 181 to 175 feet south of the intersection of STH 181 & W. Glenbrook Rd.

There would be approximately 3,338 feet of 8-inch steel main, starting at CTH & Division Rd. north to Division Rd. & Revere Lane, and 2,729 feet of 6-inch steel main starting at W. County Line Rd. & N. Granville Rd., north to N. Granville Rd. & 2,650 feet north of W. County Line Rd.

This route crosses approximately 14,961 linear feet (2.83 miles) of land that appears to be in agricultural use. Of that, 480 linear feet (0.09 miles) is within a commercial nursery. The pipeline will be installed via open cut trenching and horizontal directional drilling at these locations.

## **4. SOILS**

Please see the attached NRCS Custom Soils Report (prepared on the NRCS website at <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm> )

## **5. SCOPE OF AGRICULTURAL MITIGATION**

This AMP applies to those activities occurring on agricultural lands (tilled land row crops). "Agricultural land" as used here is understood to include rotated pastureland (except permanent pasture), all presently cultivated land including cropland, haylands, truck gardens, specialty crops, and land in government agricultural set-aside programs.

"Permanent pasture" as used here includes land devoted exclusively to pasture use, and not suited to tillage or crop rotation, as determined by the lack of any sustained crop history. "Construction area(s)" as used here includes all permanent or temporary workspace areas to be used by the Company for the purpose of constructing and operating the project, as well as lands on which aboveground facilities or other appurtenances related to the project will be located.

## **6. AGRICULTURAL INSPECTOR ROLE AND QUALIFICATIONS**

The Company will have a project Construction Manager (“CM”) and an Environmental Consultant (“EC”) for the project. The Company will also have an Environmental Manager (“EM”) providing oversight.

The EC will be a qualified individual that will monitor the implementation of the AMP. The EC will have familiarity with agricultural operations and general construction, as well as knowledge in regards to agronomy and soil conservation. The EC will report directly to the EM.

The EC will be familiar with the following:

- The Agricultural Mitigation Plan;
- gas lateral construction sequences and processes;
- be familiar with techniques of soil conservation;
- be familiar with agricultural operations;
- possess good oral and written communication skills; and
- be able to work closely with the agricultural landowners, tenants and applicable agencies.

Contractors will be required to structure their construction activities to be consistent with the AMP.

## **7. AGRICULTURAL MITIGATION: PLANNING AND PRE CONSTRUCTION PHASE**

The Company will communicate as needed with affected landowners and tenants of agricultural land to keep them informed of overall progress, explain mitigation actions, and to learn of any additional problems noted by landowners. The Company will provide landowners with a telephone number and address that can be used to contact the Company (also known as the Hotline Number). The phone number will include provisions for taking calls on evenings and weekends by use of an answering machine or voicemail system. The Company will respond promptly to calls or correspondence from landowners or tenants along the utility easement and/or right-of-way. Where the Company needs to consult or obtain concurrence from both the landowner and tenant of a property, they will make a good faith effort to do so. In the event, there is a disagreement between landowner and tenant with regards to a decision, the Company’s obligation will be satisfied by securing agreement with the landowner.

The Company will provide notice of any permanent changes in the status or use of agricultural lands to WDATCP prior to the beginning of construction.

The Company will work with landowners to ascertain existing agricultural operations that may require special attention, such as conservation practices, location of above and below ground structures or obstructions, such as drain tile, irrigation systems, fencing, livestock, certified organic lands, proposed new drainage systems or other farm technology.

During the pre-construction phase, the Company will:

- Contact each landowner to obtain property specific information (such as drain tiles, conservation practices, etc.) to ensure these structures/ operation practices are noted on construction documents;
- review agricultural related project documents such as descriptions or maps of leased lands, permits, draft construction alignment sheets, and relevant plans prior to construction; and
- review information supplied by affected farm operators, conservation districts, agricultural extension agents, and others;

- educate construction crews through an environmental training session, to ensure they are familiar with AMP, agricultural concerns and issues that may occur;
- Negotiate with the farmland owner/operators to avoid the spreading manure over all areas within the proposed construction area prior to construction.

At this time, the Company is unaware of any Certified Organic Farms within the project boundary. If one is identified and will be impacted by construction, the Company will work with the landowner or tenant, the landowner and/or tenant's certifying agent to identify site-specific construction practices that will minimize the potential for decertification as a result of construction activities. Possible practices may include: surveying/staking methods prior to construction (specifically non paint methods), equipment cleaning, use of drop cloths during welding and coating activities; removal and storage of additional topsoil; planting a deep-rooted cover crop in lieu of mechanical decompaction; applications of composted manure; or similar measures. The Company recognizes that Organic System Plans are proprietary in nature and will respect the need for confidentiality.

## **8. AGRICULTURAL MITIGATION: CONSTRUCTION AND RESTORATION PHASE**

During construction and restoration, the EC's role is to monitor the implementation of the Company AMP to avoid negative impacts to agricultural lands by advising the appropriate Company representative in the event incorrect construction methods are being used. The EC will generally be present on-site during construction, and will have access to all work areas in agricultural lands. The EC will travel between various construction activities in agricultural lands and spot check construction operations. If the EC discovers actions that do not appear to meet the AMP requirements, the EC may stop work at that location if necessary and will immediately contact the CM who will determine if site-specific restoration action is necessary. They will also ensure that the erring contractors are trained in the appropriate construction methods.

In the event adverse weather conditions cause soil conditions to become unfavorable for construction or restoration activities at a given site, the EC will consult with the CM to temporarily halt activity at that location and will confer with them as to when activities should be resumed at the site.

## **9. AGRICULTURAL MITIGATION: CROP COMPENSATION**

The Company will compensate the landowner for crop loss; compensation will be based on crop prices and yields for the County at the time of construction. Crop loss will occur during the construction of the project, which, depending on the timing of construction activities, may include one or two growing seasons. Payments will be made to landowners as soon as possible after construction is completed.

If the landowner rents or leases out the land to a tenant farmer (renter), then the renter will be compensated in lieu of the landowner.

## **10. BEST CONSTRUCTION MANAGEMENT PRACTICES (BMPs)**

The Company require those working on the project to research, plan, implement, monitor, and assure the proposed results are obtained. The Company relies on these methods to identify agricultural concerns and implement measures to maintain agricultural productivity throughout construction and restoration. Appropriate use of these measures are assured by key field personnel such as the EC and the Company EM, CM, and Construction Inspector (CI). Additionally, the Company seeks to only use contractors with a consistent favorable history of installing and maintaining measures according to the

BMPs. Thus, permit conditions, landowner satisfaction, and natural resources are preserved. The Company will incorporate the applicable provisions of this AMP and accompanying BMPs into all bid documents and contracts with each contractor retained on this project by the Company for construction, restoration, mitigation or post-restoration monitoring. Each contractor retained by the Company for the project must also incorporate the applicable provisions of the AMP into their contracts with each subcontractor on the project.

The Company utilizes construction techniques within agricultural areas that will insure future agricultural productivity. The following construction methods are to be utilized in agricultural areas:

### **a. Topsoil Segregation**

During construction of the gas main, topsoil will be removed from the construction area and stockpiled separately from any other excavated soils. This will preserve the topsoil resource by eliminating the potential for topsoil/subsoil mixing. Topsoil is defined to include the upper most portion of the soil commonly referred to as the plow layer, the A horizon, or its equivalent in uncultivated soils. It is the surface layer of the soil that has the darkest color or the highest content of organic matter. All of the topsoil to a depth of 12 inches, or the entire original topsoil depth if it is less than 12 inches, will be removed from excavated areas; however, topsoil will not be removed from under the topsoil storage piles. The Company has the option to remove amounts of topsoil in excess of 12" at its discretion.

The gas main will be installed via open cut trench and directional boring. The horizontal directional bore method consists of pipe installation using an auger to drill an underground tunnel, into which the pipe is drawn. The bore method does not disturb the soil horizons. Open cut trenching will require separation of top and sub soils during excavation. For all excavations, top and sub soils will be replaced in their original soil horizons when backfilling. Landowners will be asked to refrain from manure spreading prior to topsoil removal. Erosion control measures will be used as necessary.

### **b. Temporary Access Road**

The Company will attempt to utilize existing access from public roads, and may use farm roads for access to and from the ROW where possible. In places where temporary access roads are constructed over agricultural land, topsoil will be stripped and temporarily stockpiled. If the temporary roads in agricultural lands require gravel stabilization, geo textile construction fabric will be placed below imported rock material for additional stability and to provide a distinct barrier between imported rock material and the subsoil surface.

Temporary roads will be designed to accommodate existing surface drainage patterns and to minimize soil erosion. During the restoration phase, both temporary and pre-existing access roads will be removed and the areas will be restored as close as reasonably possible to its pre-construction conditions. In the event the landowner wants the road left intact, a written mutual agreement between the Landowner and the Company will be established.

### **c. Clearing of Brush and Trees from the Easement**

The Company will work with each landowner for the cutting of trees necessary for construction of the gas distribution system. Trees may be cut and left along the edge of the utility ROW for

the landowner's use or disposed of in various methods. Methods of disposal of trees, brush and stumps may include off-site burning, burial, chipping, or removal. Vegetation from cherry and walnut trees can be toxic to livestock. If these trees are found along the route, all debris from these trees will be removed from areas that are actively pastured so it will not come into contact with livestock.

#### **d. Fencing**

Prior to construction The Company will work with landowners to determine if fences may be in the way of access for construction equipment. If necessary, existing fences may be removed and temporary fencing will be installed. Wire tension on temporary fences must be adequate to prevent sagging. Bracing of fences to trees or vegetation is prohibited. Fence materials such as paint must not be used as it is toxic to livestock.

Where livestock graze adjacent lands to construction areas, arrangements will be made with the landowner prior to construction to determine if temporary fences are necessary. The Company's contractors will be responsible to close any gates as used throughout the workday.

Existing fence crossings removed due to construction activities will be repaired. Following construction, any temporary gates and fences installed for use by construction crews must be removed, unless the landowner approves otherwise. Permanent fences will be restored as closely as reasonably possible to their pre-construction condition.

#### **e. Irrigation Systems**

If project construction intersects an operational irrigation system on agricultural land, The Company and the landowner will establish a mutually acceptable amount of time that the affected irrigation systems may be taken out of service during construction. Water flow in irrigation systems on agricultural land is not to be disrupted by construction without first notifying affected landowners. Any damage to an irrigation system caused by construction will be repaired as soon as reasonably possible.

#### **f. Erosion Control and Dewatering**

Erosion controls such as silt fence, staked hay bales, and erosion matting will be used to prevent surface runoff from carrying sediment laden water onto adjacent lands. Dewatering may be required to remove standing water from trench or bore pit areas. Erosion control and dewatering technical standards are described on the Wisconsin Department of Natural Resources website (<http://dnr.wi.gov/topic/stormwater/standards/>). These standards will be met or exceeded at all times. It is not permissible to allow soil or water runoff to occur from non-organically farmed fields onto organically farmed fields at any time even if both fields are owned by the same landowner.

#### **g. Drain Tile**

The Company will work with each Landowner through the pre-construction process to determine location of known drain tiles. If a drain tile is damaged or severed in the course of construction, the tile will be repaired. A temporary repair with solid tubing to allow drainage while construction activities are completed may be used, or a permanent repair immediately installed.

Prior to backfilling soils at that location, the drain tile will be permanently repaired. Repairs may include support of the tile to maintain proper drainage gradient, replacement of tile and placement of subsoils free of large rocks and clumps around the tile to cushion it, and/or placement of filter cloths. Each repair will be documented to show proper actions have been taken to ensure future drainage and GPS coordinates of the repair location recorded.

#### **h. Weed Control**

Where the EC sees evidence that weed growth on stockpiled topsoil could present a problem to adjacent cultivated fields the EC will consult with the Contractor to have the weeds removed or killed prior to topsoil replacement. If the Company chooses to spray the topsoil pile with herbicide, the landowner will be consulted in regard to the choice of herbicide to be used, taking into account their preference for cover crop and plans for the next year's crop. If any herbicide spraying is completed, it will be done by a state licensed applicator.

#### **i. Repair of Existing Agricultural Erosion Control Facilities**

Existing agricultural facilities such as diversion terraces, grassed or lined waterways, outlet ditches, water and sediment control basins, vegetated filter strips, etc. damaged due to construction activities will be restored to pre-construction conditions. Photographs and elevation surveys may be taken as necessary prior to construction activities at the site to ensure final restoration is satisfactory.

#### **j. Soil Restoration**

The purpose of soil restoration is to ensure that soil strata are replaced in the proper order, decompacted, and that rock content of the upper 24 inches of soil is not increased. The Company will discuss rock and excess soil disposal with the landowner to determine acceptable disposal location(s) on the property. Heavy equipment will not be allowed to cross those agricultural areas that have been decompacted and restored.

##### De-compacting the Subsoil:

De-compaction of the subsoil will only be done when the subsoil condition is friable/tillable in the top 18 inches of the subsoil profile, using the Atterbeg Field Test as guidance (Attachment A). The EC may recommend to the Company specific locations for the decompaction of the subsoil in locations where soils appear to be either predominantly wet or in low lying areas where water ponding has occurred due to the "trench effect" as a result of topsoil removal. In these cases, the Company may consult with the landowner to determine the appropriate decompaction needs.

Equipment that can be used for soil decompaction may include a v-ripper, chisel plow, paraplow, or equivalent. Typical spacing of the shanks varies with equipment but is typically in the 8 - 24 inch range. The normal depth of tillage is 18 inches. The type of equipment used and the depth of rip may be adjusted as appropriate for different soil types or for a deeply and severely compacted area.

Subsoil compaction will normally be alleviated with three passes of the decompaction equipment. Multiple passes refers to the implement passing over the same soil band. That is, three passes of a 10 foot wide implement will treat a 10 foot wide band of soil, not a 30 foot



wide band. Passes must be made in multiple directions. This can be achieved in the narrow areas by having the implement weave back and forth across the area being ripped.

Topsoil Replacement:

The topsoil will be replaced to its original depth across the spoil storage, trench, work, and traffic areas. The layer of replaced topsoil should be uniform across the right-of-way width, including any crowning. Topsoil should be replaced with wide tracked machinery or equivalent light loaded equipment to avoid compaction of the topsoil and subsoil layers. Rubber tired motor graders may be used to spread and level topsoil to address unevenness in the field. In areas where minimal tillage, no-till, or level land farming practices are employed, a tracked machine will be required to establish final grades.

De-compacting Through the Topsoil:

De-compaction through the topsoil may be necessary, if the subsoil and/or topsoil are compacted during topsoil replacement activities. A penetrometer will be used to determine if additional decompaction is necessary through the topsoil.

Final Rock Removal:

Replacing the topsoil (or de-compacting through the topsoil) may free some rocks and bring them to the surface. The size, density and distribution of rock remaining on the construction work area should be the same as adjacent areas not disturbed by construction.

Final Cleanup:

All previously restored construction area should not be traversed by unnecessary equipment traffic. All construction related debris, including litter generated by the construction crews, will be removed from the landowner's property and disposed of appropriately. Final clean-up begins immediately after all the other above-mentioned sequence of restoration activities operations are completed, and not before. Final clean-up includes installation of permanent erosion control measures if necessary and disposal of construction debris and will be completed as soon as practicably possible (weather permitting), or as soon as possible thereafter. If final clean-up is delayed, temporary erosion controls will be installed as necessary.

## ATTACHMENT A

Purpose: To determine when soil is suitable for tillage operations.

Process: The Environmental Inspector will determine the soil's consistency using the following:

1. Pull a sample soil plug at the maximum depth to be tilled, or from within the topsoil pile.
2. Roll a portion of the sample between the palms of the hands to form a wire with a diameter of one-eighth inch.
3. The soil consistency is:
  - a. Tillable if the soil wire breaks into segments not exceeding 3/8 of an inch in length.
  - b. Plastic (not tillable) if the segments are longer than 3/8 of an inch before breaking.
4. This procedure is to be used prior to decompacting the subsoil; on the topsoil pile prior to stripping and stockpiling; on the topsoil prior to replacement; and prior to decompacting through the topsoil.
5. One determination of soil consistency is adequate until the next rain event.

## BMP 01 - Right-of-Way Width

**Purpose:** To define the locations and limits of rights-of-way and additional temporary workspaces, in order to minimize the impacts to agricultural lands.

**Organization:** WISCONSIN GAS onsite construction inspection personnel will monitor and enforce the measures described, in concert with the Environmental Consultant (EI), for pipeline construction operations within agricultural lands.

### Installation Planning

1. WISCONSIN GAS will determine the required right-of-way widths over the length of lands traversed by the pipeline, including extra workspaces.
2. WISCONSIN GAS will show the specific limits of rights-of-way on alignment sheet drawings.
3. WISCONSIN GAS will provide the construction contractor, environmental consultant and inspection personnel with the right-of-way configuration drawings.
4. WISCONSIN GAS will obtain the appropriate right-of-way clearances prior to entry on any land affected by construction of the pipeline, or notify all parties of areas for which clearance is withheld.

### Construction

1. The limits of the right-of-way and all additional temporary workspaces will be staked prior to work commencing at that location.
2. Easements in agricultural lands are typically a 50 foot permanent easement and a 50 foot temporary easement.
3. Additional temporary workspace will be required for stream crossings, road bore crossing areas, uplands on either side of wetlands, and equipment turnaround areas. WISCONSIN GAS will determine the amount of additional right-of-way needed for construction and restoration on agricultural land as per these BMPs.
4. Should a situation arise where the approved workspace is not adequate to implement the agricultural BMPs, work will be stopped at the respective location until WISCONSIN GAS determines an appropriate course of action.
5. WISCONSIN GAS will demarcate boundaries of certified organic farming operations.
6. Triple Lift Soil Segregation may require an additional 25 foot in the temporary construction easement as necessary to allow separation of the three stockpile areas.

**WISCONSIN GAS GERMANTOWN MEQUON MAIN REPLACEMENT PROJECT**  
**Best Management Practices for Construction within Agricultural Lands**  
**BMP 02 - Topsoil Segregation**

**Purpose:** To preserve the topsoil resources by eliminating the potential for topsoil / subsoil mixing.

**Installation Planning**

1. During right-of-way negotiations for easements on agricultural lands, WISCONSIN GAS will identify full topsoil removal as the only alternative.
2. The topsoil is defined to include the upper most portion of the soil commonly referred to as the plow layer, the A horizon, or its equivalent in uncultivated soils. It is the surface layer of the soil that has the darkest color or the highest content of organic matter.
3. WISCONSIN GAS will inform landowners possessing lands containing soils within the construction corridor that meet the three-lift soil handling criteria described below and offer landowners the option of implementing the three-lift soil trenching procedure on their property during construction.

**Construction**

Full Topsoil Removal

1. The WISCONSIN GAS operator or construction contractor will oversee determination of the topsoil depth. This will be completed as construction progresses.
2. All of the topsoil to a depth of 12 inches, or the entire original topsoil depth if it is less than 12 inches, will be removed from the subsoil storage area, the trench area, and the rest of the temporary right-of-way (work and traffic areas); however, topsoil will not be removed from under the topsoil storage piles or areas where construction mats are laid on the surface for material storage or equipment travel. WISCONSIN GAS has the option to remove amounts of topsoil in excess of 12" at its discretion.
3. All subsoil material removed from the pipeline trench will be stockpiled separate from the topsoil stockpile.
4. All topsoil to a depth of 12-inches will be stripped from temporary access roads, temporary storage areas, and temporary construction areas associated with meter stations, mainline valves, and pig launchers located on agricultural land.
5. Topsoil will be removed prior to cut/fill grading operations.

Partial Topsoil Removal

1. There will be no Partial Topsoil Removal in the construction of these projects on agricultural lands.

Triple Lift Soil Segregation

1. Triple Lift Soil Segregation may occur when the trench width is greater than two feet.
2. A line list of data will be collected to determine the existing soil conditions and if there are areas identified as glacier till material. This will be obtained from NRSC Soil Maps and/or original soil maps for each county.
3. WISCONSIN GAS will include in the construction bid documents explanation of the three-lift soil handling procedure along with the potential locations. WISCONSIN GAS will also review the process and the potential locations with the bidders during the pre-bid job showing to ensure the potential contractor is well acquainted with the expectations.

**WISCONSIN GAS WEST CENTRAL LATERAL PROJECT**  
**BMP 02 - Topsoil Segregation - continued**

4. When the topsoil and subsoil materials are removed from the pipeline trench, construction contractors will stockpile each of the three materials separately. If there is not sufficient room for three separate stockpiles, the contractors may use mulch or straw to segregate each soil material. Materials will be replaced into the trench in the same order that they were removed.

**WISCONSIN GAS GERMANTOWN MEQUON MAIN PIPELINE REPLACEMENT PROJECT**  
**Best Management Practices for Construction within Agricultural Lands**  
**BMP 03 - Erosion Control**

**Purpose:** To minimize the effects of erosion to lands affected by construction, and adjacent properties, and to prevent silts and sediments from being transported off the right-of-way or into natural resources.

**Installation Planning**

1. WISCONSIN GAS will conduct training of inspection personnel and contractors to ensure all parties have a thorough understanding of the erosion control requirements to be utilized on the project. The training will include a review of the requirements of the Project AMP, and BMPs. Such training will identify the authorities of the inspection personnel, the criteria for placement of the particular erosion structures, and the procedure to be followed in the event that non-compliance with these practices appears to have occurred.
2. WISCONSIN GAS will advise the construction contractor of any areas of special concern.
3. WISCONSIN GAS will require its construction contractor to structure its work in a manner that is consistent with the requirements of the documents listed in Paragraph 1 above, and to maintain an adequate supply of approved erosion control materials necessary for providing an appropriate level of control.

**Construction**

Temporary Erosion Control

1. Temporary erosion controls will be constructed immediately after initial disturbance of the soil, and will be properly maintained throughout construction. The erosion control structures will be inspected as described below and reinstalled as necessary (such as after backfilling of the trench) until they are either replaced by permanent erosion controls or restoration is complete. Refer to BMP 06 – Soil Restoration and BMP 07 – Seeding and Seed Bed Preparation.
2. Temporary slope breakers will be constructed where necessary to reduce runoff velocity and divert water off of the construction right-of-way. Temporary slope breakers may be constructed of materials such as soil, silt fence, staked hay or straw bales, or sand bags.
3. Unless otherwise specified as a permit condition, temporary slope breakers will be installed using the following spacing:

<u>Slope %</u>	<u>Spacing (feet)</u>
5 - 15	300
>15 - 30	200
>30	100

4. The outfall of each temporary slope breaker will be directed off the construction right-of-way to a stable, well-vegetated area or energy-dissipating device at the end of the slope breaker and off the construction right-of-way. Discharge of water shall not be made in a way that can runoff from non-organic farm operations onto adjacent organic farm operations.
5. The integrity of slope breakers will be confirmed, during active construction on a daily basis and during inactive construction on a weekly basis, in areas with no construction or equipment operation; within 24 hours of each 0.5-inch of rainfall. Slope breakers found to be ineffective will be repaired within 24 hours of identification.
6. The placement of temporary slope breakers will be coordinated with the placement of trench/ditch plugs. Trench/ditch plugs will be installed at the boundaries of certified organic farming to ensure that the pipeline does not provide a surface or subsurface drainage path from the surrounding area to the certified organic farm during construction

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**BMP 03 - Erosion Control - continued**

7. Slope breakers will be of adequate height and width to contain and divert a significant rain event. Additionally, slope breakers will be constructed with a two to eight percent outslope to a stable area. In the absence of a stable area, appropriate energy-dissipating devices will be used to direct the flow off of the construction right-of-way. The slope breaker will be compacted during its construction to prevent the water from eroding through the berm. The inlet end of the berm will be located to prevent water from traveling around the berm.
8. The outlet of the slope breaker will be stable enough to filter sediment from the water and retain the sediment within the existing vegetation.

Sediment Barriers

1. Sediment barriers will be installed to stop the flow of sediment. They may be constructed of materials such as silt fence, staked hay or straw bales, or sand bags.
2. Temporary sediment barriers will be installed at the base of slopes adjacent to road crossings until disturbed vegetation has been reestablished and at appropriate locations to prevent siltation into waterbodies or wetlands crossed by, or near, the construction work area.
3. Temporary sediment barriers will be maintained until permanent revegetation measures are successful or the upland areas adjacent to wetlands, waterbodies, or roads are stabilized. Temporary sediment barriers will be removed from an area when that area is successfully restored.

Mulch

1. In general, mulch will not be used as an erosion control measure in agricultural lands. In the event mulch is necessary, WISCONSIN GAS will consult with the landowner.

Permanent Erosion Control Devices

1. To prevent subsurface flow of water through the pipe trench, trench breakers will be installed as needed.
2. The following reference table can be used to locate trench breaker spacing on areas with slopes greater than 5%.

<u>Slope (%)</u>	<u>Spacing Recommendations (feet)</u>
5 – 15	300
>15 - 30	200
> 30	100

3. Permanent trench breakers will be installed in the trench prior to backfilling and will consist of sandbags, earth-filled sacks or other approved material. Topsoil will not be used for trench breakers. Trench breakers are required to have a minimum bottom width of two sacks wide.
4. Trench breakers will be installed to a minimum elevation of one-foot above the top of the pipe. The top of the trench breaker must be two feet or more below the restored surface on agricultural land.

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**Best Management Practices for Construction within Agricultural Lands**  
**BMP 04 - Drain Tile**

**Purpose:** To ensure that any tile line damaged during construction is repaired to a condition that is functionally equivalent to its condition prior to construction and to avoid adverse impacts to planned or proposed drainage systems.

**Installation Planning**

1. Identify fields containing drain tiles through contact with landowners, the local Land Conservation District, and the USDA-Natural Resources Conservation Service staff as appropriate. All drain tiles will be photographed and GPS documented pre-construction and post-construction.
2. Flag all identified drain tiles within the right-of-way after clearing and grading, and prior to trenching.
3. WISCONSIN GAS will repair or correct tile or drainage problems caused by construction of the pipeline immediately, continue with construction and refill the trench, landowner and weather permitting, upon written notice from the landowner to WISCONSIN GAS of such a problem, unless WISCONSIN GAS can demonstrate that the problem identified by the landowner was not caused by actions performed during such construction or restoration. WISCONSIN GAS may arrange a pay settlement to the landowner.
4. WISCONSIN GAS will document drain tile plans the landowner may plan to install within the three years following construction.
5. WISCONSIN GAS will identify local drain tile installation contractors and consult with the landowner to determine whether the landowner would prefer repair/replacement services (if necessary) be provided by a local contractor.

**Construction**

1. The excavated pipeline trench shall provide a minimum of 12 inches clearance, where practicable, between the pipe and the drainage tile.

General Conditions

1. WISCONSIN GAS will use the construction contractor or their sub-contractor to replace, relocate or reconfigure existing tile lines as may be required.
2. WISCONSIN GAS will take the necessary actions to ensure the functioning of the tile lines will be equivalent to its prior condition where tile lines adjacent to the pipeline's right-of-way are adversely affected by the construction of the pipeline. This may include the relocation, reconfiguration, and replacement of the existing tile lines within the construction corridor. The repaired drain tile will be verified that it was installed correctly.
3. The quality of all clay and concrete drain tile and corrugated polyethylene tubing to be installed shall be appropriate for the work as determined by the qualified drain tile repair contractor. Material to be installed will meet American Society of Testing Materials (ASTM) standards.
4. Any drain tile removed from the pipeline trench will not be reused.

Locating Damaged Drains

1. All drains found during trenching will be flagged.
2. Drains that are located within the right-of-way, but are not located within the trench, may be examined for damage.



**WISCONSIN GAS GERMANTOWN MEQUON MAIN REPLACEMENT PROJECT**  
**BMP 04 - Drain Tile – continued**

Temporary Repairs

1. All exposed tiles will be capped or screened with window screen or equivalent to protect against soil intrusion when the trench is dug, whether repaired immediately or later.
2. Any flowing tile line will be repaired as soon as practicable with solid tubing, until permanent repairs can be made.
3. Temporary repairs are needed if a flowing drain will be stopped for longer than 24 hours.

Permanent Repairs

1. All permanent tile line repairs damaged within the trench area will be repaired prior to backfilling at the respective location.
2. Where tile lines are severed by construction of the pipeline trench, angle iron, three-sided steel channel iron, I-beams, full round slotted pipe, perforated plastic pipe or half pipe will be used to support the repaired tile line. The support members must extend a minimum of 2-feet into previously undisturbed soil. If the tile repairs involve clay tile, the support member will extend to the first tile joint beyond the minimum 2-foot distance.
3. Each tile drain's slope (gradient) will be maintained by providing sufficient support to prevent the drain line from sagging. Sandbags, bags of concrete, or similar structures can be used as support under repaired tile lines. The grade of the tile line should remain unchanged.
4. If the tile is clay, ceramic or concrete, any connection with new material must be made with commercially available connectors, or wrapped with plastic or sealed with Sakrete to prevent soil intrusion.
5. To avoid the risk of damaging (crushing) the tile lines with large soil clumps or stones during backfilling loosened native subsoil free of large soil clumps and stones should be placed on top of, and to the sides of, the tile line. Where appropriate native subsoil is not available, imported subsoil free of clumps and stones, or pea gravel, can be used to cushion the tile line.
6. Filter-covered drain tiles will be used where the existing tile line is covered with a filter.

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Best Management Practices for Construction within Agricultural Lands**

**BMP 05 - Trench Dewatering**

**Purpose:** Pump water from an open trench or other excavated area while controlling the rate of discharge to avoid:

- Permanent or temporary erosion and scour;
- Damage to adjacent agricultural land, crops, or pastureland;
- Depositing sand, silt, or sediment in or near a wetland or waterbody;
- Depositing gravel in fields, pastures, or watercourses; and
- Damaging cultural resources sites, locations of sensitive plant species and organic farming operations.

Typically, the trench will need to be dewatered for purposes of, but not limited to, tie-ins, measuring the trench for bends, lowering-in pipe, trench inspection, and back-filling the trench. Water discharge from hydrostatic testing following backfilling shall follow the same protocols described here when applicable.

**Installation Planning**

1. Water will be discharged in an upland area so any sediment, stones, and silt-laden water will not deposit material in a sensitive area adversely impacting the hydrology or plant communities. The contractor should have sufficient intake or outlet hose to reach the nearest appropriate upland area.
2. WISCONSIN GAS and their construction contractors will identify during construction activities:
  - Low areas along the pipeline route that are likely to collect water during construction, and
  - Suitable areas for the discharge of water accumulated within the pipe trench or other excavated area
  - Identify accumulated water that needs to be discharged as construction progresses
3. WISCONSIN GAS will require its construction contractors to obtain:
  - WISCONSIN GAS approval of all discharge locations (both within and outside of the construction corridor) and techniques, and all trench dewatering discharge locations and techniques
  - WISCONSIN GAS will work with landowners to obtain voluntary permission for any work outside of the construction corridor.
4. WISCONSIN GAS will require its construction contractors to structure the work to minimize the accumulation of water within the trench.
5. If there are water-related damages to private lands that can be shown to have occurred as a result of construction, WISCONSIN GAS may:
  - Restore the cropland and crops, pastureland, water courses, or any other damaged lands to their pre-construction condition and/or
  - Reasonably compensate the landowner for the damages.

**Construction**

1. All dewatering activities will be conducted in compliance with current drainage laws, local ordinances relating to such activities, WDNR permit conditions, and the provisions of the Clean Water Act.
2. Rainwater or groundwater that collects in the trench will be pumped:
  - Onto a well-vegetated area that will prevent the water from returning to the right-of-way, or

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**BMP 05 - Trench Dewatering – continued**

- Into a filter bag or a settling basin constructed of straw bales when adequate vegetation is absent or when in the vicinity of a wetland or waterbody.

Additionally, sediment barriers or similar erosion control measures may be used as necessary to divert the flow of pumped water.

3. To minimize the extraction of silt or sediment from the trench the intake will be prevented from touching the bottom or side of the trench. A flotation device or a support will be attached to the intake of the suction line to prevent sucking up soil and other debris from the trench.
4. All structures will be located in a stabilized and vegetated area with a minimum buffer width of 100-foot between it and any adjacent water body or wetland area. Sediment barriers or similar erosion control measure will be installed if an adequate buffer is not available.
5. The dewatering activities will not deposit gravel, sediment (mud) or other debris in fields, pastures, or watercourses.
6. Backfill activities will begin as soon as possible after pipe installation to prevent the trench from refilling with water in high water table conditions. Attempts to dewater as far from the back-filling activity as possible will be made.
7. Dewatering will be monitored and stopped, if necessary, to correct conditions and practices that do not comply with this best management practice.
8. Discharge of water from the trench of non-organic farm operations and hydrostatic testing shall not be made in a way that can runoff onto adjacent organic farm operations.

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**BMP 06 - Soil Restoration**

**Purpose:** To restore the contour and to ensure the quality and agricultural productivity of the soil by:

- Avoiding the mixing of the topsoil with the subsoil, and
- Eliminating compaction from the subsoil and topsoil layers, and
- Assuring the rock content of the upper 24-inches of topsoil and subsoil is not increased after completion of the construction and restoration process.

**Installation Planning**

1. WISCONSIN GAS will identify, through consultation with the landowner, all rock disposal location(s) on the ROW or adjacent to the ROW. This location can be on the construction right-of-way of the landowner's property. Written permission from the landowner is required for disposal at another site on the farm.
2. WISCONSIN GAS will consult the landowner about properly disposing of excess excavated material to maintain agricultural productivity.
3. Successful restoration of the soil requires that the proper equipment be used, in the proper sequence, under the correct soil moisture content conditions. Each step in the restoration process is completed before moving to the next step. De-compaction will occur as determined necessary by the Company and in consultation with the contractor and landowner.

**Construction:**

Backfilling

1. After installation of the pipeline is complete, the trench will first be back-filled with material from the subsoil storage piles. If present, the cobble/glacial till layer will then be back-filled, then the topsoil on the surface layer.

Crowning the Trench

1. Crowning the trench area will compensate for ground settling or subsidence. The crown shall be constructed with native topsoil material. Topsoil from adjacent ROW areas will be used (if needed) for crowning to avoid the potential for mixing of subsoil and topsoil in the event settling is overestimated. The EC will determine the height of the crown based on soil type and moisture content. Breaks will be left in the crown to accommodate existing surface drainage systems while the crown settles over the first year post construction.
2. Crowning the trench will be used when necessary and performed per WISCONSIN GAS standards.
3. If in the first growing season post-construction the landowner determines that the crown area may have settled too much or too little and is causing a problem with agricultural activity, WISCONSIN GAS will consult with the landowner to determine what corrective action may be needed to restore the crown area to its pre-construction topography.

De-compaction of Topsoil

De-compaction and the other activities for the full corridor topsoil removal are described within the BMP. Heavy equipment will not be allowed to cross those agricultural areas that have been de-compacted.

De-compacting the Subsoil

1. Deep subsoil ripping shall be carried out on all traffic and work areas of the right-of-way where full corridor stripping of topsoil occurred. This includes the pipeline workspaces, temporary workspaces, and temporary access roads. It does not include the area over the trench.

**WISCONSIN GAS GERMANTOWN MEQUON MAIN REPLACEMENT PROJECT**  
**BMP 06 - Soil Restoration - continued**

2. De-compaction of the subsoil will only be done when the subsoil condition is friable/tillable in the top 18-inches of the subsoil profile as determined by the EC or contractor. The EC, using their best judgment, may need to allow the de-compaction of the subsoil in areas where soils appear to be either predominantly wet or in low lying areas where water ponding has occurred due to the “trench effect” as a result of topsoil removal. In these cases the EC will notify with the Company, who will then consult with and receive approval from the landowner or tenant.
3. Ripping equipment to be used will be selected based on successful use on previous pipeline projects such as the v-ripper, chisel plow, paraplow, or an equivalent. WISCONSIN GAS may, at their discretion, choose to compensate the landowner to chisel plow his impacted land(s).
4. The normal depth of tillage is 18-inches. The EC will provide guidance on the appropriate depth of rip in special situations or soil types. For example, a depth of 6 to 8-inches may be appropriate on intensively drained mineral (lacustrine/alluvial) soils. A depth of 22-inches may be appropriate for a deeply and severely compacted area.
5. The optimal spacing of the shanks will depend on the ripping equipment, soil type and moisture content, but will typically be in the range of 8 to 24-inches. Shanks are at their optimum spacing when the implement shatters the soil area between the shanks. Shatter is evidenced by the soil lifting between the shanks as the implement passes. The EC can assist the contractor in selecting the appropriate shank spacing.
6. Subsoil compaction will normally be alleviated with three passes of the de-compaction equipment. Multiple passes refers to the implement passing over the same soil band. That is, three passes of a 10-foot wide implement will treat a 10-foot wide band of soil, not a 30-foot wide band.
7. Passes must be made in multiple directions. This can be achieved in the narrow pipeline right-of-way by weaving the implement back and forth across the area being ripped.
8. 8. If de-compaction was not successful, the de-compaction effort will continue. The contractor is required to make as many passes as necessary to alleviate compaction. If the de-compaction effort is not successful after additional passes, a change in the de-compaction equipment used would be appropriate, and determined with guidance from the EC.

Topsoil Replacement

1. The topsoil will be replaced to its original depth across the spoil storage, trench, work, and traffic areas for the Full Topsoil Removal option. The layer of replaced topsoil should be uniform across the right-of-way width, including the crown over the trench.
2. Topsoil should be replaced with small tracked machinery or equivalent light loaded equipment to avoid compaction of the topsoil and subsoil layers. Rubber tired motor graders may be used to spread and level topsoil to address unevenness in the field due to pipeline construction. In areas where minimal tillage, no-till, or level land farming practices are employed, a motor grader will be required to establish final ROW grades.

De-compacting Through the Topsoil

1. For the Full Corridor Topsoil Removal, de-compaction through the topsoil may be necessary, if the subsoil and/or topsoil are compacted during topsoil replacement activities.

Final Rock Removal

1. Replacing the topsoil (or de-compacting through the topsoil) may free some rocks and bring them to the surface.
2. The size, density and distribution of rock remaining on the construction work area should be the same as adjacent areas not disturbed by construction.

Final Cleanup

1. Any area of previously restored right-of-way should not be traversed by unnecessary equipment traffic. In the event any area of previously restored right-of-way that was traversed by equipment for any reason (e.g. to reach a hydrostatic test location) that results in further compaction. All construction-related debris, including litter generated by the construction crews, will be removed from the landowner's property and disposed of appropriately.
2. Final clean-up begins immediately after all the other above-mentioned sequence of restoration activities operations are completed. Final clean-up includes installation of permanent erosion control measures and disposal of construction debris. Final clean-up will be completed within 14 days after backfilling in the area, weather permitting, or as soon as possible thereafter. Final clean-up will not be delayed until the end of the next seeding season. If final clean-up is not completed within the 14-day time period, temporary erosion controls will be installed.
3. Further soil restoration steps are described in BMP 07 – Seeding and Seed Bed Preparation.



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**BMP 07 - Seeding and Seed Bed Preparation**

**Purpose:**

1. To place the seed into the soil at the correct time and proper depth to promote sufficient seed-soil contact on cropland or pasture requiring seeding.
2. To prepare the soil surface of an exposed area by natural or artificial means, such as tilling and fertilizing.
3. To minimize topsoil erosion on disturbed agricultural areas.

**Installation Planning**

WISCONSIN GAS will reseed over the entire right-of-way following final clean-up. WISCONSIN GAS will not apply seed to certified organic farms, prior to consulting with the landowner regarding how reseeding will be accomplished.

1. WISCONSIN GAS will attempt to identify properties during the pre-construction phase where cropland seeding procedures or pasture seeding procedures will be used.
2. During recommended seeding periods, seedbed preparation should immediately follow soil restoration (see BMP 06 – Soil Restoration) as soon as weather conditions and individual right-of-way requirements permit.
3. Seeding will be completed immediately after finishing seedbed preparation, weather permitting. Temporary erosion control measures will be used if this timeframe cannot be met (see BMP 03 - Erosion Control).
4. For seeding outside of the recommended seeding periods, temporary erosion control methods should be used (see BMP 03 - Erosion Control).
5. WISCONSIN GAS will consult with the landowner regarding the seed mix, if appropriate.

**Construction**

Seed Selection

1. An annual oat, wheat, or similar grain will be used for erosion control on crop land and a special pasture seeding mix will be used for any pastures.

Seedbed Preparation for Conventional, Broadcast and Hydroseeding

1. The ideal condition for conventional seeding is a smooth, firm, clod-free soil for optimum seed placement with drills or cultipacker seeders, if appropriate for that type of seed. The soil should be firm enough at planting for an adult footprint to sink no deeper than 3/8-inch. Avoid overworking the soil because rainfall following seeding may crust the surface, preventing seedling emergence.
2. If the area to be seeded has been recently loosened, and will provide an adequate seedbed, no additional tillage will be required.
3. If the area to be seeded has been compacted or crusted, the top layer of soil will be tilled.
4. Spike-toothed harrows may also be used during seedbed preparation. The spikes of the harrow will dig lightly into the soil to break up soil masses. Harrows may also be used to cover broadcast seed.
5. The seedbed will be scarified to create sites for seed to lodge and germinate where broadcasting the seed or hydroseeding will be used.



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## BMP 07 – Seeding and Seed Bed Preparation – continued

### Seeding

1. Seeding of permanent cover will be done, whenever possible, during the recommended seeding date ranges for Southeastern Wisconsin for introduced grasses and legumes.
2. If seeding cannot be accomplished before the recommended October 15 seeding deadline, temporary erosion controls will be implemented and the seeding of permanent cover done at the beginning of the next seeding season.
3. Any soil disturbance occurring outside of the recommended October 15 seeding deadline date, or any bare soil left unstabilized by vegetation, will be treated as a winter construction condition and appropriate erosion controls will be installed to minimize erosion over winter and spring thaw.
4. After seedbed preparation, the seed mixes of all the permanent grasses or legume plantings will be applied at the rate recommended by the USDA-Natural Resources Conservation Service (NRCS).
5. In areas where a different seed mix is proposed, seeding will conform to the Critical Area Planting conservation practice standard of the NRCS, Conservation Reserve Program or any other similar federal program.
6. Grass waterways and terraces will be seeded to reestablish grass cover similar to preconstruction conditions. Erosion control measures, such as mulch or erosion control fabric, will be used in conjunction with seeding.
7. Conventional seeding uses drills or cultipacker seeders, if appropriate for that type of seed, to place the seed into the soil at measured quantities, locations, and spacing.
8. If a Certified Organic Farm will be impacted by construction, WISCONSIN GAS will coordinate with the affected landowner to ensure that an appropriate seed mix and planting method is used as required by the farm's Certification Plan.

Note To Contractor – “Final Clean-up” as expressed within this BMP is defined in BMP 06 as generally including installation of permanent erosion control measures, disposal of construction debris and other activities a landowner or tenant would expect to be consistent with the term. However, it is not meant to be confused with or replace the FERC's “Final Clean-up” requirements and timing which are long established federal requirements well known throughout the pipeline construction industry.

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**BMP 08 - Crop Compensation**

**Purpose:** To ensure that agricultural landowners are fairly compensated for loss of crop production due to the pipeline project.

**Planning:**

1. WISCONSIN GAS will compensate the landowner for crop loss once at the beginning or the end of the project. If the landowner rents or leases out the land to a renter, then the renter will be compensated in lieu of the landowner. There will be an attempt to communicate the agreement of compensation to both the renter as well as the landowner.
2. The value of the crop will be determined by the Crop Loss Compensation Calculation Method (See Attachment A). This will determine what 100% crop value loss for one year is.
3. The landowner/renter will be compensated a total of 200% of the value of the crop based on the calculation in Item 2 above. 100% of the value of the crop during the year of construction, 60% the first year after construction, and 40% the second year after construction.
4. The landowner/renter would signify agreement by signing a damage release form.

**Crop Loss Compensation Calculation Method  
Attachment A**

The present value of a permanent crop loss can be estimated by discounting the annual value of the lost crop over a long period of time. The formula and variables are defined below:

$$P = A / i$$

P = Present value of lost crop

A = Annual value of lost crop = Yield per Acre (bushels) \* Acres \* Price per bushel

- Yield per acre for the measured crop will be determined by the county average yields over the three years prior to buyout year. The three-year, county-average yield history will be based on the U.S. Department of Agriculture, National Agricultural Statistics Service data for the county affected by the pipeline.  
(Source: <http://www.nass.usda.gov/QuickStats/>)
- Acres affected by current pipeline construction.
- Price per bushel is determined by the previous 3-year average price of the commodity for Wisconsin listed by the U.S. Department of Agriculture, National Agricultural Statistics Service. (Source: <http://www.nass.usda.gov/QuickStats/>)

*i* = the capitalization rate is based on the previous three-year average, thirty-year Treasury bill rate. This rate most closely approximates the term and risk of the payments for permanent yield loss. Although the 30-year bonds no longer are sold, the Federal Board provides this rate as if it still existed because it is used as a proxy in longer-term financial calculations

Source: <http://www.treas.gov/offices/domestic-finance/debt-management/interest-rate/ltcomp-hist-index.html>

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**Best Management Practices for Construction within Agricultural Lands**  
**BMP 9– Certified Organic Farms**

**Purpose**

This BMP identifies mitigation measures that apply specifically to farms that are Certified Organic or farms that are in active transition to become Certified Organic, and is intended to address the unique management and certification requirements of these operations.

The provisions of this BMP will apply to Certified Organic farms (Organic Agricultural Land) for which the Landowner or Tenant has provided to WISCONSIN GAS a true, correct and current version of the Organic System Plan within 60 days after the signing of the Easement for such land or 60 days after the issuance of a Certificate of Public Convenience and Necessity (CPCN) to WISCONSIN GAS by the Federal Energy Regulatory Commission (FERC), whichever is sooner, or, in the event the Easement is signed later than 60 days after the issuance of the CPCN, the provisions of this BMP are applicable when the Organic System Plan is provided to WISCONSIN GAS at the time of the signing of the Easement. WISCONSIN GAS recognizes that Organic Agricultural Land is a unique feature of the landscape and will treat this land with the same level of care as other sensitive environmental features.

**Definitions**

Unless otherwise provided to the contrary in this BMP, capitalized terms used in this BMP shall have the meanings provided below and in the AMP. In the event of a conflict between this BMP and the AMP with respect to definitions, the definition provided in this BMP will prevail but only to the extent such conflicting terms are used in this BMP. The definition provided for the defined words used herein shall apply to all forms of the words.

- Apply = To intentionally or inadvertently spread or distribute any substance onto the exposed surface of the soil.
- Certifying Agent = As defined by the National Organic Program Standards, Federal Regulations 7 CFR Part 205.2.
- Decertified or  
Decertification = Loss of Organic Certification.
- Organic Agricultural  
Land = As defined in 7 CFR Part 205.100, or organic farming operations exempted from certification under 7 CFR Part 205.101.
- Organic Buffer Zone = As defined by the National Organic Program Standards, Federal Regulations 7 CFR Part 205.2.
- Organic Certification  
or Organic Certified = As defined by the National Organic Program Standards, Federal Regulations 7 CFR Part 205.100 and 7CFR Part 205.101.
- Organic System Plan = As defined by the National Organic Program Standards, Federal Regulations 7 CFR Part 205.2.
- Prohibited Substance = As defined by the National Organic Program Standards, Federal Regulations 7 CFR Part 205. 600 through 7 CFR Part 205.605 using the criteria provided in 7 USC 6517 and 7 USC 6518.

## **WISCONSIN GAS GERMANTOWN MEQUON MAIN REPLACEMENT PROJECT**

### **BMP 9 – Certified Organic Farms - continued**

#### **Planning**

WISCONSIN GAS will identify the location of Certified Organic farms, and farms that are in active transition to become Certified Organic in advance of construction. WISCONSIN GAS will work with the landowner or tenant and the certifying agency

#### **Construction**

##### **Organic System Plan**

WISCONSIN GAS recognizes the importance of the individualized Organic System Plan (OSP) to the Organic Certification process. WISCONSIN GAS will work with the Landowner or Tenant, the Landowner or Tenant's Certifying Agent, and/or a mutually acceptable 3<sup>rd</sup> party Organic Certifier as consultant to identify site-specific construction practices that will minimize the potential for Decertification as a result of construction activities. Possible practices may include: equipment cleaning, use of drop cloths during welding and coating activities; removal and storage of additional topsoil; planting a deep-rooted cover crop in lieu of mechanical decompaction; applications of composted manure; or similar measures. WISCONSIN GAS recognizes that Organic System Plans are proprietary in nature and will respect the need for confidentiality.

##### **Prohibited Substances**

WISCONSIN GAS will avoid the Application of Prohibited Substances onto Organic Agricultural Land. No herbicides, pesticides, fertilizers or seed will be applied unless requested and approved by the Landowner. Likewise, no refueling, fuel or lubricant storage or routine equipment maintenance will be allowed on Organic Agricultural Land. Equipment will be checked prior to entry to make sure that fuel, hydraulic and lubrication systems are in good working order before working on Organic Agricultural Land. In the event that a mechanical problem develops during construction within Organic Agricultural Land, the construction contractor will make the necessary repairs at the point of the problem, rather than moving the equipment off the right-of-way before undertaking repairs. WISCONSIN GAS feels this approach will result in fewer potential impacts on Organic Agricultural Land.

##### **Soil Handling**

Topsoil and subsoil layers that are removed during construction on Organic Agricultural Land will be stored separately and replaced in the proper sequence after the pipeline is installed. Unless otherwise specified in the site-specific plan described above, WISCONSIN GAS will not use this soil for other purposes, including creating access ramps at road crossings. No topsoil or subsoil (other than incidental amounts) may be removed from Organic Agricultural Land. Likewise, Organic Agricultural Land will not be used for storage of soil from non-Organic Agricultural Land.

##### **Erosion Control**

On Organic Agricultural Land, WISCONSIN GAS will, to the extent feasible, use permanent erosion control methods consistent with the Landowner or Tenant's Organic System Plan. On land adjacent to Organic Agricultural Land, WISCONSIN GAS's erosion control procedures will be designed so that sediment from adjacent non-Organic Agricultural Land will not flow onto the right-of-way and will not be deposited on Organic Agricultural Land. Treated lumber, non-organic hay bales, non-approved metal fence posts, etc. will not be used in erosion control on Organic Agricultural Land.

## **WISCONSIN GAS GERMANTOWN MEQUON MAIN REPLACEMENT PROJECT**

### **BMP 9 – Certified Organic Farms - continued**

#### **Water in Trenches**

During construction, WISCONSIN GAS will leave an earthen plug in the trench at the boundary of Organic Agricultural Land to prevent trench water from adjacent land from flowing into the trench on Organic Agricultural Land. Likewise, WISCONSIN GAS will not allow trench water from adjacent land to be pumped onto Organic Agricultural Land.

#### **Weed Control**

On Organic Agricultural Land, WISCONSIN GAS will, to the extent feasible, implement weed control methods consistent with the Landowner or Tenant's Organic System Plan. Prohibited Substances will not be used in weed control on Organic Agricultural Land. In addition, WISCONSIN GAS will not use Prohibited Substances in weed control on land adjacent to Organic Agricultural Land in such a way as to allow these materials to drift onto Organic Agricultural Land.

#### **Mitigation of Natural Resource Impacts**

WISCONSIN GAS will not use Organic Agricultural Land for the purpose of required compensatory mitigation of impacts on natural resources such as wetlands or woodlands unless approved by the Landowner/Tenant.

#### **Monitoring**

In addition to the responsibilities of the Environmental Consultant described in the AMP, the following will apply:

- A USDA-approved Organic Certifier may be retained by WISCONSIN GAS to monitor construction and restoration activities on Organic Agricultural Land for compliance with the provisions of this BMP, and document activities that could result in Decertification.
- Instances of non-compliance will be documented according to Independent Organic Inspectors Association protocol consistent with the Landowner's OSP, and will be made available to the DATCP, the Landowner, the Tenant, the Landowner's or Tenant's Certifying Agent, and to WISCONSIN GAS.

If the Environmental Consultant is responsible for monitoring activities on Organic Agricultural Land, he/she will be trained, at WISCONSIN GAS's expense, in organic inspection, by the Independent Organic Inspectors Association, unless the Environmental Consultant received such training during the previous three years.

#### **Compensation for Construction Damages**

The settlement of damages will be based on crop yield and/or crop quality determination and the need for additional restoration measures. Unless the Landowner or Tenant of Organic Agricultural Land and WISCONSIN GAS agree otherwise, at WISCONSIN GAS's expense, a mutually agreed upon professional agronomist will make crop yield and crop quality determinations. If the crop yield and/or crop quality determinations indicate the need for soil testing, the testing will be conducted by a commercial laboratory that is properly certified to conduct the necessary tests and is mutually agreeable to WISCONSIN GAS and the Landowner or Tenant. Field work for soil testing will be conducted by a Professional Soil

## **WISCONSIN GAS GERMANTOWN MEQUON MAIN REPLACEMENT PROJECT**

### **BMP 9 – Certified Organic Farms - continued**

Scientist licensed by the State of Wisconsin or a Professional Agronomist. WISCONSIN GAS will be responsible for the cost of sampling, testing and additional restoration activities, if needed. Landowners or Tenants may elect to settle damages with WISCONSIN GAS in advance of construction on a mutually acceptable basis or to settle after construction based on a mutually agreeable determination of actual damages.

#### **Compensation for Damages Due to Decertification**

Should any portion of Organic Agricultural Land be Decertified as a result of construction activities, the settlement of damages will be based on the difference between revenue generated from the land affected before Decertification and after Decertification so long as a good faith effort is made by the Landowner or Tenant to regain Certification. Landowner or Tenant will provide to WISCONSIN GAS a copy of the Decertification provided by the Certifying Agent.

## **APPENDIX III: County Agricultural Profiles**



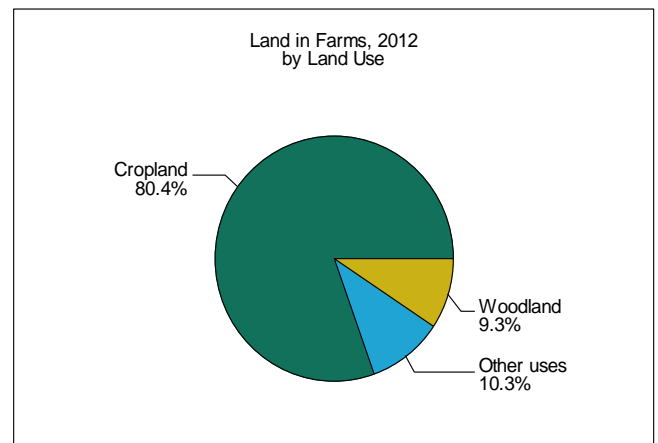
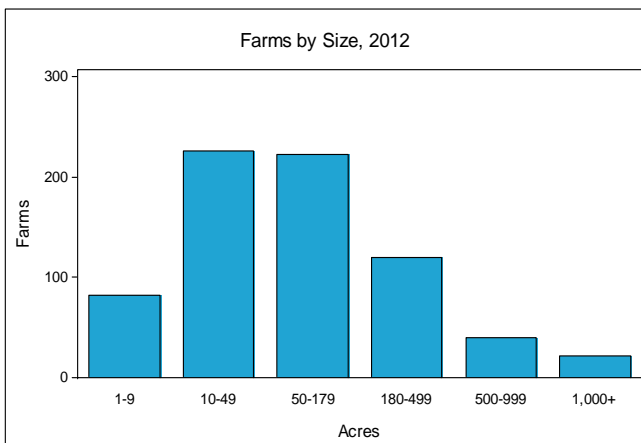
# 2012 CENSUS OF AGRICULTURE

## COUNTY PROFILE



### Washington County Wisconsin

	2012	2007	% change
<b>Number of Farms</b>	712	831	- 14
<b>Land in Farms</b>	133,432 acres	129,790 acres	+ 3
<b>Average Size of Farm</b>	187 acres	156 acres	+ 20
<b>Market Value of Products Sold</b>	\$122,687,000	\$107,767,000	+ 14
Crop Sales \$48,905,000 (40 percent)			
Livestock Sales \$73,782,000 (60 percent)			
<b>Average Per Farm</b>	\$172,313	\$129,684	+ 33
<b>Government Payments</b>	\$2,609,000	\$1,740,000	+ 50
<b>Average Per Farm Receiving Payments</b>	\$7,627	\$4,066	+ 88





## Washington County – Wisconsin

### Ranked items among the 72 state counties and 3,079 U.S. counties, 2012

Item	Quantity	State Rank	Universe <sup>1</sup>	U.S. Rank	Universe <sup>1</sup>
<b>MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)</b>					
Total value of agricultural products sold	122,687	41	72	972	3,077
Value of crops including nursery and greenhouse	48,905	45	71	1,171	3,072
Value of livestock, poultry, and their products	73,782	40	72	662	3,076
<b>VALUE OF SALES BY COMMODITY GROUP (\$1,000)</b>					
Grains, oilseeds, dry beans, and dry peas	29,544	47	71	1,083	2,926
Tobacco	-	-	10	-	436
Cotton and cottonseed	-	-	-	-	635
Vegetables, melons, potatoes, and sweet potatoes	1,938	37	70	623	2,802
Fruits, tree nuts, and berries	(D)	(D)	70	(D)	2,724
Nursery, greenhouse, floriculture, and sod	15,765	3	71	191	2,678
Cut Christmas trees and short rotation woody crops	(D)	(D)	67	(D)	1,530
Other crops and hay	1,532	54	71	1,567	3,049
Poultry and eggs	(D)	26	72	(D)	3,013
Cattle and calves	17,136	36	72	913	3,056
Milk from cows	54,411	38	68	153	2,038
Hogs and pigs	63	51	70	1,381	2,827
Sheep, goats, wool, mohair, and milk	91	50	68	1,420	2,988
Horses, ponies, mules, burros, and donkeys	(D)	(D)	69	(D)	3,011
Aquaculture	(D)	24	53	(D)	1,366
Other animals and other animal products	451	33	70	449	2,924
<b>TOP CROP ITEMS (acres)</b>					
Corn for grain	27,087	49	69	851	2,638
Forage-land used for all hay and haylage, grass silage, and greenchop	26,599	41	72	713	3,057
Soybeans for beans	22,286	32	68	888	2,162
Corn for silage	14,929	23	69	92	2,237
Wheat for grain, all	6,114	17	68	892	2,537
<b>TOP LIVESTOCK INVENTORY ITEMS (number)</b>					
Layers	(D)	(D)	72	(D)	3,040
Cattle and calves	42,357	37	72	634	3,063
Pheasants	(D)	20	53	(D)	963
Horses and ponies	1,293	35	72	870	3,072
Colonies of bees	917	16	71	418	2,761

### Other County Highlights, 2012

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	195	Farming	366
\$1,000 to \$2,499	36	Other	346
\$2,500 to \$4,999	42	Principal operators by sex:	
\$5,000 to \$9,999	45	Male	623
\$10,000 to \$19,999	48	Female	89
\$20,000 to \$24,999	14	Average age of principal operator (years)	58.2
\$25,000 to \$39,999	49	All operators by race <sup>2</sup> :	
\$40,000 to \$49,999	27	American Indian or Alaska Native	2
\$50,000 to \$99,999	72	Asian	5
\$100,000 to \$249,999	76	Black or African American	6
\$250,000 to \$499,999	50	Native Hawaiian or Other Pacific Islander	1
\$500,000 or more	58	White	1,105
Total farm production expenses (\$1,000)	103,555	More than one race	3
Average per farm (\$)	145,442	All operators of Spanish, Hispanic, or Latino Origin <sup>2</sup>	2
Net cash farm income of operation (\$1,000)	26,825		
Average per farm (\$)	37,676		

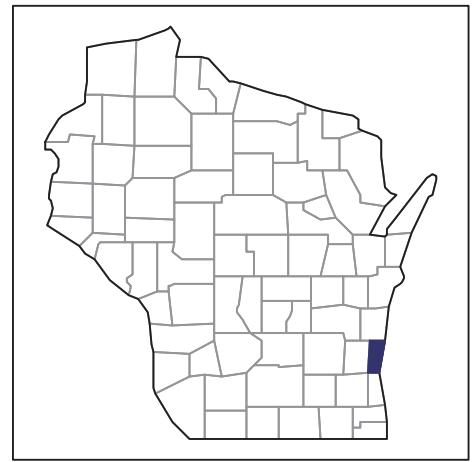
See "Census of Agriculture, Volume 1, Geographic Area Series" for complete footnotes, explanations, definitions, and methodology.

- Represents zero. (D) Withheld to avoid disclosing data for individual operations.

<sup>1</sup> Universe is number of counties in state or U.S. with item. <sup>2</sup> Data were collected for a maximum of three operators per farm.

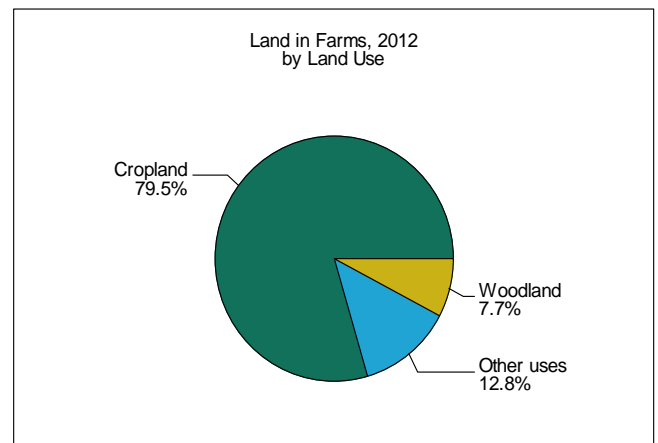
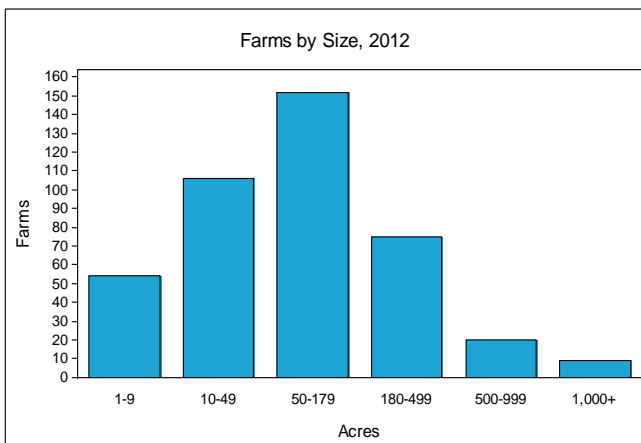
# 2012 CENSUS OF AGRICULTURE

## COUNTY PROFILE



### Ozaukee County Wisconsin

	2012	2007	% change
<b>Number of Farms</b>	416	513	- 19
<b>Land in Farms</b>	64,987 acres	70,689 acres	- 8
<b>Average Size of Farm</b>	156 acres	138 acres	+ 13
<b>Market Value of Products Sold</b>	\$64,690,000	\$59,056,000	+ 10
Crop Sales \$24,175,000 (37 percent)			
Livestock Sales \$40,515,000 (63 percent)			
Average Per Farm	\$155,504	\$115,120	+ 35
<b>Government Payments</b>	\$1,218,000	\$1,058,000	+ 15
Average Per Farm Receiving Payments	\$5,744	\$3,256	+ 76





## Ozaukee County – Wisconsin

### Ranked items among the 72 state counties and 3,079 U.S. counties, 2012

Item	Quantity	State Rank	Universe <sup>1</sup>	U.S. Rank	Universe <sup>1</sup>
<b>MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)</b>					
Total value of agricultural products sold	64,690	55	72	1,569	3,077
Value of crops including nursery and greenhouse	24,175	56	71	1,609	3,072
Value of livestock, poultry, and their products	40,515	50	72	1,045	3,076
<b>VALUE OF SALES BY COMMODITY GROUP (\$1,000)</b>					
Grains, oilseeds, dry beans, and dry peas	14,680	55	71	1,356	2,926
Tobacco	-	-	10	-	436
Cotton and cottonseed	-	-	-	-	635
Vegetables, melons, potatoes, and sweet potatoes	2,101	32	70	592	2,802
Fruits, tree nuts, and berries	(D)	16	70	400	2,724
Nursery, greenhouse, floriculture, and sod	4,478	14	71	469	2,678
Cut Christmas trees and short rotation woody crops	(D)	(D)	67	(D)	1,530
Other crops and hay	1,473	56	71	1,603	3,049
Poultry and eggs	(D)	(D)	72	(D)	3,013
Cattle and calves	5,709	51	72	1,721	3,056
Milk from cows	33,952	48	68	222	2,038
Hogs and pigs	19	59	70	1,844	2,827
Sheep, goats, wool, mohair, and milk	70	54	68	1,661	2,988
Horses, ponies, mules, burros, and donkeys	219	20	69	1,168	3,011
Aquaculture	(D)	35	53	(D)	1,366
Other animals and other animal products	164	44	70	848	2,924
<b>TOP CROP ITEMS (acres)</b>					
Forage-land used for all hay and haylage, grass silage, and greenchop	13,889	57	72	1,317	3,057
Soybeans for beans	10,144	53	68	1,110	2,162
Corn for grain	9,964	58	69	1,196	2,638
Corn for silage	5,702	51	69	329	2,237
Wheat for grain, all	4,296	23	68	1,049	2,537
<b>TOP LIVESTOCK INVENTORY ITEMS (number)</b>					
Cattle and calves	18,473	51	72	1,421	3,063
Layers	(D)	16	72	(D)	3,040
Horses and ponies	828	52	72	1,444	3,072
Pheasants	750	27	53	245	963
Goats, all	423	38	70	1,424	2,996

### Other County Highlights, 2012

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	135	Farming	222
\$1,000 to \$2,499	17	Other	194
\$2,500 to \$4,999	18	Principal operators by sex:	
\$5,000 to \$9,999	15	Male	344
\$10,000 to \$19,999	41	Female	72
\$20,000 to \$24,999	5	Average age of principal operator (years)	59.7
\$25,000 to \$39,999	14	All operators by race <sup>2</sup> :	
\$40,000 to \$49,999	13	American Indian or Alaska Native	-
\$50,000 to \$99,999	51	Asian	3
\$100,000 to \$249,999	46	Black or African American	-
\$250,000 to \$499,999	35	Native Hawaiian or Other Pacific Islander	-
\$500,000 or more	26	White	618
Total farm production expenses (\$1,000)	51,776	More than one race	-
Average per farm (\$)	124,462	All operators of Spanish, Hispanic, or Latino Origin <sup>2</sup>	1
Net cash farm income of operation (\$1,000)	16,747		
Average per farm (\$)	40,256		

See "Census of Agriculture, Volume 1, Geographic Area Series" for complete footnotes, explanations, definitions, and methodology.

- Represents zero. (D) Withheld to avoid disclosing data for individual operations.

<sup>1</sup> Universe is number of counties in state or U.S. with item. <sup>2</sup> Data were collected for a maximum of three operators per farm.

**APPENDIX IV: Sample Gas Easement**

**GAS DISTRIBUTION EASEMENT  
CERTIFICATE OF COMPENSATION AND  
NOTICE OF RIGHT OF APPEAL**

Document Number

This **GAS DISTRIBUTION EASEMENT**, (the "Easement") is made by \_\_\_\_\_ ("Grantor") to **WISCONSIN GAS LLC, a Wisconsin limited liability company, doing business as We Energies** ("Grantee"). Grantor and Grantee may be referred to individually as "Party" or collectively as the "Parties".

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Grantor hereby conveys and grants to Grantee, its successors and assigns, a permanent non-exclusive easement on, over, under, across, through and upon a part of Grantor's land hereinafter referred to as the "Easement Area".

1. **Easement Area:** The Easement Area is described as a strip of land fifty (50) feet in width (or such other widths as described hereinafter), being a part of the premises of Grantor in a part of the \_\_\_\_\_ ¼ of Section \_\_\_\_\_, Township \_\_\_\_\_ North, Range \_\_\_\_\_ East, Town of \_\_\_\_\_, \_\_\_\_\_ County, Wisconsin (the "Easement Area").

The location of the Easement Area with respect to Grantor's premises is described on the attached Exhibit "A" and shown on the attached Easement Description Map, marked Exhibit "B" and made a part hereof by this reference.

RETURN TO:

WE ENERGIES  
Attn:  
231 W. Michigan Street, A252  
Milwaukee, WI 53203

(Parcel Identification Number)

2. **Purpose:** This Easement gives, grants and conveys unto Grantee, its successors and assigns, subject to the limitations and reservations herein stated, the permanent and non-exclusive right, permission and authority to lay, install, construct, maintain, operate, inspect, alter, replace, protect, test, patrol, extend, repair, reconstruct, relocate, enlarge, and remove or abandon a pipeline or pipelines with valves, tie-overs, main laterals and service laterals, and other appurtenant facilities, including cathodic protection apparatus used for corrosion control, all of which shall be and remain the property of Grantee, for the transmission and distribution of natural gas and all by-products thereof or any liquids, gases, or substances which can or may be transported or distributed through a pipeline or pipelines on, over, under, across, through and upon the Easement Area.

Grantee may designate or otherwise appoint, assign, contract, and duly authorize other persons, firms, or corporations to perform, carry out and complete, in whole or in part, the activities operations, herein enumerated, as it deems necessary and convenient for the full enjoyment and use of the rights herein granted.

3. **Use and Access:** Grantee shall have all other rights and benefits necessary or convenient for the full enjoyment and use of the rights herein granted, including but not limited to, the right to remove and to clear all structures and obstructions such as, but not limited to, rocks, trees, brush, limbs and fences which might interfere with the rights herein contained, and the free and full right of ingress and egress over and across the Easement Area, to and from the Easement Area, and other adjacent lands of Grantor, as necessary or convenient for the full enjoyment and use of the rights herein granted, during the operations of Grantee as herein above enumerated, but not necessarily limited thereto.

Grantor agrees that Grantee and its agents, contractors and employees shall have the right to enter upon the Easement Area and adjacent portions of the Grantor Parcel for the purposes of performing survey work for civil, environmental, archaeological, cultural, and geotechnical reviews, including soil borings, wetland determinations studies, and to perform other engineering studies and for other purposes consistent with this Easement.

4. **Structures and Improvements:** Grantor covenants and agrees that no structures or above ground improvements (as defined in the attached Exhibit "D"), obstructions or impediments, of whatever kind or nature will be constructed, placed, granted or allowed within the Easement Area. Grantor further covenants and agrees not to plant any trees or shrubs within fifteen (15) feet of the centerline of the pipeline.

**Grantor agrees to comply with the Addendum - General Construction Requirements and Restrictions for Wisconsin Gas LLC Gas Pipeline Easement Areas which is attached hereto, marked Exhibit "D", consisting of two pages, and made a part hereof by this reference.**

5. **Elevation:** Grantor covenants and agrees that the elevation of the existing ground surface of land within the Easement Area will not be altered by more than six (6) inches without the prior written consent of Grantee.
6. **Temporary Easement:** Grantee and its agents shall have the further right to use, for initial construction purposes only, a strip(s) of land as shown on the attached Exhibit "B", as a temporary construction easement area. For non-wooded parcels Grantor and Grantee agree that Grantee may at the time of construction extend the temporary easement area up to an additional twenty-five (25) feet. The temporary easement is for construction purposes only and shall terminate when the need therefor passes.
7. **Reserved Rights:** Grantor, after the initial construction of the pipeline is completed, reserves the right to cultivate and use the ground surface within the Easement Area covered by this Easement provided that such use shall not, in the opinion of Grantee, interfere with or obstruct Grantee in its exercise of the rights and privileges herein granted, or create any actual or potential hazard to the pipeline facilities ultimately installed therein.
8. **Restoration:** Grantee agrees to restore or cause to have restored Grantor's land, including fencing, as nearly as is reasonably possible, to the condition existing prior to such entry by Grantee or its agents. This restoration, however, does not apply to any trees, bushes, branches or roots which may interfere with Grantee's use of the Easement Area.
9. **Ownership:** Grantor, its successors, assigns, heirs, executors and administrators covenant and agree to and with Grantee, its successors and assigns, that at the time of the ensembling and delivery of this Easement, they are well seized of good and marketable title to the premises above described, and that the same are free and clear from all encumbrances that might materially adversely affect the rights of Grantee hereunder, except the mortgages of \_\_\_\_\_ filed of record prior to the date of the recording of this instrument.
10. **Wisconsin Statutes:** In accordance with Section 32.06(2a) Wisconsin Statutes, any above named persons or parties having an interest of record in the property affected by this easement may appeal the amount of compensation paid for the rights herein granted within six (6) months after the date of recording of this document. The total consideration paid for such easement rights is stated on the Certificate of Compensation and Notice of Right of Appeal which is attached hereto, marked Exhibit "C", and made a part hereof by this reference.

**The grantor hereby accepts a lump sum payment in consideration of the grant of this easement.**

11. **Exercise of Rights.** The Parties agree that the complete exercise of the rights herein conveyed may be gradual and not fully exercised for some time in the future, and that none of the rights herein granted shall be lost by non-use for any length of time.
12. **Binding Effect:** This Easement shall be a covenant running with the land and shall be binding upon, and inure to the benefit of the Parties and their heirs, legal representatives, executors, administrators, devisees, legatees, successors or assigns. The rights herein granted to Grantee may be assigned in whole or in part by Grantee at any time.
13. **Non-Titled Spouse:** Any non-titled spouse signs below as Grantor for the purpose of releasing and waiving all rights he or she may hold under all applicable homestead exemption laws and all applicable marital property laws.

This \_\_\_\_\_ (is/is not) homestead property.

**IN WITNESS WHEREOF**, the Party or Parties hereto have executed this instrument this \_\_\_\_\_ day of \_\_\_\_\_,  
20\_\_.

By: \_\_\_\_\_

By: \_\_\_\_\_

STATE OF WISCONSIN)  
                          : SS  
                          COUNTY)

Personally came before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ the above named \_\_\_\_\_,  
known to me to be the persons who executed the foregoing instrument and acknowledged the same.

\_\_\_\_\_  
Notary Public Signature, State of Wisconsin

My commission expires \_\_\_\_\_



The undersigned mortgagee does hereby consent to this grant of easement and does hereby subordinate, and declare to be at all times subordinate and inferior, the interest of the mortgagee to the easement interest of Grantee as more fully set forth in this Easement.

\_\_\_\_\_  
**MORTGAGEE**

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

STATE OF WISCONSIN)  
: SS  
COUNTY)

Personally came before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, the above-named \_\_\_\_\_,  
known to me to be the \_\_\_\_\_(Title) of \_\_\_\_\_ (Corporation  
Name), who executed the foregoing instrument by its authority and on its behalf and acknowledged the same.

\_\_\_\_\_  
Notary Public Signature, State of Wisconsin

My commission expires \_\_\_\_\_

**EXHIBIT "A"**

**LEGAL DESCRIPTION OF PROPERTY AND EASEMENT AREA**

**EXHIBIT "B"**

**Easement Description Map within the Premises**

**EXHIBIT "C"**

**CERTIFICATE OF COMPENSATION AND NOTICE OF RIGHT OF APPEAL**

**SECTION 32.06 (2a), WISCONSIN STATS.**

DATED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 201 \_\_\_\_\_

Pursuant to Section 32.06(2a), Wisconsin Statutes, notice is hereby given of the acquisition of a certain easement attached hereto and made a part hereof by this reference. The names of all persons having an interest of record in the property affected by such easement immediately prior to the acquisition of the easement are the following:

Grantor: \_\_\_\_\_

Mortgagee: \_\_\_\_\_

The Easement grants unto Wisconsin Gas LLC, its successors and assigns, the right, permission and authority to construct, maintain and operate gas pipeline facilities for the purpose of the transmission and distribution of natural gas and all by-products thereof or any liquids, gases, or substances which can or may be transported or distributed through a pipeline on, over, under, across, through, and upon the hereinafter described property to-wit:

A strip of land \_\_\_\_\_ ( ) feet in width being a part of the premises of Grantor in a part of the \_\_\_\_\_ ¼ of Section \_\_\_\_\_, Township \_\_\_\_\_ North, Range \_\_\_\_\_ East, Town of \_\_\_\_\_, \_\_\_\_\_ County, Wisconsin as described on Exhibit A and shown on the attached Easement Description Map, marked Exhibit "B" together with the temporary easement shown on Exhibit B.

Parcel Identification Number:

The consideration paid for the permanent easement as shown on the attached Easement Description Map, marked Exhibit "B" was \$\_\_\_\_\_.

The consideration paid for the temporary easement as shown on the attached Easement Description Map, marked Exhibit "B" was \$\_\_\_\_\_.

**In accordance with Section 32.06 (2a) Wisconsin Stats., any person named in the certificate may, within 6 months after the date of its recording, appeal from the amount of compensation therein stated by filing a petition with the judge of the circuit court of the county in which the property is located for proceedings to determine the amount of just compensation. Notice of such petition shall be given to all persons having an interest of record in such property. The judge shall forthwith assign the matter to the chairperson of the county condemnation commissioners for hearing under Sections 32.06(9)(a) and (b), 32.06(10), and 32.06(12) and Chapters 808 and 809 shall govern such appeals.**

## EXHIBIT "D"

### ADDENDUM

#### General Construction Requirements and Restrictions for Wisconsin Gas LLC Gas Easement Areas

1. The Easement Area must be accessible to Grantee and its duly authorized agents, invitees, contractors, persons, firms or corporations.
2. Fill material, rubble, scrap, pavement, berms or earthworks may not be placed within the Easement Area without Grantee's prior written approval.
3. The elevation or grade over the gas pipeline may not be altered by more than 6 inches without Grantee's prior written approval. A minimum of 36 inches of cover over the gas pipeline must be maintained at all times.
4. Retention ponds and their inlets/outlets are not permitted within the Easement Area.
5. Drainage ditches or drain tiles are not permitted within the Easement Area without Grantee's prior written approval of Grantor's plans. Plans must include consideration for proper cover and erosion protection.
6. Septic fields or mound systems are not permitted within the Easement Area. Laterals to or from the field or mound may cross the gas pipeline, provided that they maintain an 18 inch separation from the gas pipeline. Any excavation within 2 feet of the pipeline must be done by hand-digging or vacuum excavation with a Grantee representative present to view and inspect excavation activities.
7. Underground culverts, pipelines, cables, sewers or any utility may not be placed within 18 inches of the gas pipeline, and may not be placed within the Easement Area without Grantee's prior written approval of Grantor's plan. Any excavation within 2 feet of the pipeline must be done by hand-digging or vacuum excavation with a Grantee representative present to view and inspect excavation activities.
8. Digger's Hotline must be contacted at least 3 days prior to any excavation or construction activities within the Easement Area. The current contact for Digger's Hotline is 811 or 1-800-242-8511 or [www.diggershotline.com](http://www.diggershotline.com).
9. Structures or above ground improvements are not permitted within the Easement Area. Prohibited structures include but are not limited to: houses, garages, outbuildings, storage sheds, decks, swimming pools, gazebos, satellite dish antennas and dog kennels/runs. Fencing may be installed in the Easement Area provided fence posts are placed a minimum of five feet from the gas pipeline.
10. Landscaping, including planting of trees and shrubs, **is not** permitted within 15 feet of the centerline of the pipeline.
11. The installation of private or public roads may be permitted within the Easement Area with Grantee's prior written approval of Grantor's road plan. The road plan must show sound structural fill around the gas pipeline. Grantee may require soil borings to establish the subgrade load bearing characteristics of the site and prove that unstable soils are not present around the gas pipeline.
12. A paved/compacted surface, such as a driveway, may be permitted within the Easement Area with Grantee's prior written approval of Grantor's driveway plan. The driveway plan must provide a minimum cover of 48 inches over the gas pipeline.
13. Heavy earth moving equipment may not be routed over the gas pipeline without Grantee's prior written approval of Grantor's construction plan. The construction plan must provide sufficient load bearing protection, including, but not limited to, temporary pavement, heavy mats, additional compacted cover or other adequate bridging methods.

**EXHIBIT "D" – Page 2**

14. **Grantee's Field Operations must be contacted at least three (3) working days prior to any excavation activity within the Easement Area to coordinate oversight or inspection, or to confirm compliance with these provisions. The current phone number for Grantee's Call Center is 1-800-242-9137.**
15. Additional protective requirements may be necessary upon review of Grantor's construction plans submitted to Grantee as required by the Easement.

WISCONSIN GAS LLC  
Attn: System Engineering, A516  
333 W. Everett Street  
MILWAUKEE, WI 53203

**APPENDIX V: Mailing List**

GOVERNOR SCOTT WALKER 115 E CAPITOL	SEN TERRY MOULTON AGRICULTURE COMMITTEE 310 S CAPITOL	REP LEE NERISON AGRICULTURE COMMITTEE 310 N CAPITOL
RESOURCES FOR LIBRARIES DOCUMENT DEPOSITORY 2109 S STOUGHTON ROAD	STATE DOCUMENTS THE LIBRARY OF CONGRESS 10 FIRST ST S E WASHINGTON DC 20540- 0001	LRC DOCUMENTS DEPT UW-STEVENS POINT 900 RESERVE ST STEVENS POINT WI 54481
SUSAN SCHUMACHER WISCONSIN GAS 333 W EVERETT ST RM A231 MILWAUKEE WI 53203	STACY SCHUMACHER PSC 610 N WHITNEY WAY MADISON WI 53707	LEMKE SEED FARMS INC 10220 N GRANVILLE RD MEQUON WI 53097
ROBERT & CHERYL LEMKE 2006 REVOCABLE TRUST 10444 N GRANVILLE RD MEQUON WI 53097	DANNY & LINDA STAUSS 662 STARLET DR CEDARBURG WI 53012	DAVE ESCHRICH WAYSIDE NURSERIES INC PO BOX 277 THIENSVILLE WI 53092
RUBEN TRUST 10006 N WASAUKEE RD MEQUON WI 53097	JULIANNE B WINKELHORST OZAUKEE COUNTY CLERK 121 W MAIN ST RM 128 PORT WASHINGTON WI 53074	DAN ABENDROTH MEQUON CITY MAYOR 11333 N CEDARBURG RD MEQUON WI 53092-1930
WILLIAM JONES JR MEQUON CITY CLERK 11333 N CEDARBURG RD MEQUON WI 53092-1930	BRENDA J JASZEWSKI WASHINGTON CO CLERK 432 E WASHINGTON ST #2027 WEST BEND WI 53095	DEAN WOLTER GERMANTOWN PRESIDENT N112W17001 MEQUON RD GERMANTOWN WI 53022
BARBARA GOECKNER GERMANTOWN VIL CLERK PO BOX 337 GERMANTOWN WI 53022	ANDY HOLSCHBACH OZAUKEE CO CONSERVATN 121 W MAIN ST PORT WASHINGTON WI 53074	DANIEL O'NEIL OZAUKEE COUNTY UWEX 121 W MAIN ST PORT WASHINGTON WI 53074
PAUL SEBO WASHINGTON CO CONSRVTN 333 E WASHINGTON ST WEST BEND WI 53095	ALAN LINNEBUR WASHINGTON COUNTY UWEX 333 E WASHINGTON ST WEST BEND WI 53095-2003	W J NIEDERKORN LIBRARY 316 W GRAND AVE PORT WASHINGTON WI 53074
FRANK WEYENBERG LIBRARY 11345 N CEDARBURG RD MEQUON WI 53092-1930	DUERRWAECHTER MEMORIAL LIBRARY N112 W16879 MEQUON RD GERMANTOWN WI 53022- 3207	WEST BEND COMMUNITY MEMORIAL LIBRARY 230 S 6 <sup>TH</sup> AVE WEST BEND WI 53095-3380
HOMETOWN PUBLICATIONS W130 N10437 WASHINGTON GERMANTOWN WI 53022	LAKESHORE NEWSPAPERS 100 S 6 <sup>TH</sup> AVE WEST BEND WI 53095	OZAUKEE PRESS PO BOX 249 PORT WASHINGTON WI 53074







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State of Wisconsin  
Department of Agriculture,  
Trade & Consumer Protection



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