Before the Office of Administrative Hearings 600 North Robert Street St. Paul, Minnesota 55101

For the Minnesota Public Utilities Commission 121 Seventh Place East, Suite 350 St. Paul, Minnesota 55101

In the Matter of a Petition by Minnesota Energy Resources Corporation for a Route Permit for the Rochester Natural Gas Pipeline in Olmsted County

MPUC Docket No. G011/GP-15-858 OAH Docket No. 8-2500-33180 Exhibit _____

Direct TestimonyEngineering and Design

October 24, 2016

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1		I. INTRODUCTION
2	Q.	PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.
3	A.	My name is Lindsay K. Lyle. My business address is 1995 Rahncliff Court, Suite 200,
4		Eagan, Minnesota 55122.
5		
6	Q.	BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?
7	A.	I am Engineering Manager at Minnesota Energy Resources Corporation ("MERC" or the
8		"Company"). MERC is a public utility subsidiary of WEC Energy Group, Inc. ("WEC"),
9		a utility holding company headquartered in Milwaukee, Wisconsin. WEC's operating
10		public utility subsidiaries provide electric and natural gas service to approximately 4.4
11		million customers over four states, including MERC's approximately 230,000 natural gas
12		customers in Minnesota.
13		
14	Q.	FOR WHOM ARE YOU PROVIDING TESTIMONY?
15	A.	I am testifying on behalf of MERC.
16		
17	Q.	PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.
18	A.	I received a Bachelor of Science degree in chemical engineering in 1998 from Oklahoma
19		State University. I received a Master's Degree in business administration in 2004 from
20		Oklahoma State University.
21		
22		I have been employed in the natural gas industry since 1999, holding engineering
23		positions with Oklahoma Natural Gas Company, Aquila, and now MERC. At MERC, I

1		lead the Engineering Group and oversee the delivery of engineering services for
2		construction, operation and maintenance projects for gas distribution within prescribed
3		budgets, scope and schedule.
4		
5		I have been actively involved in coordinating the design and engineering and construction
6		planning aspects of the Rochester Natural Gas Pipeline Project ("Rochester Project" or
7		"Project").
8		
9	Q.	WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?
10	A.	I am testifying in support of MERC's application to the Minnesota Public Utilities
11		Commission ("Commission") for a Route Permit for MERC's proposed Rochester
12		Project. Specifically, I am testifying in support of the following sections of MERC's
13		Route Permit Application ("Application"): Section 4 (Proposed Pipeline and Associated
14		Facilities Description (Minn. R. 7852.2200)), Section 5 (Land Requirements (Minn. R.
15		7852.2300)), Section 6 (Project Expansion (Minn. R. 7852.2400)), the portion of Section
16		8 (Environmental Impact of Preferred Route (Minn. R. 7852.2700)) regarding pipeline
17		accessibility, Section 10 (Right-of-Way Preparation Procedures and Construction
18		Activity Sequence (Minn. R. 7852.2500)), Section 11 Subpart 1 (Right-of-Way
19		Protection Measures (Minn. R. 7852.2800)), and Section 12 (Operation and Maintenance
20		(Minn. R. 7852.2900)).
21		
22	Q.	ARE YOU SPONSORING ANY SCHEDULES WITH YOUR DIRECT TESTIMONY?
23	A.	Yes. I am sponsoring the following:

1		Schedule 1. Examples of Development Around Natural Gas Pipelines.
2		
3	Q.	PLEASE SUMMARIZE YOUR TESTIMONY.
4	a.	My testimony sponsors the Company's Application for the Project related to engineering.
5		design, and safety related to both construction and maintenance. I am also testifying on
6		the incorporation of natural gas pipelines into private developments around the City of
7		Rochester. Finally, I am testifying as to the design/engineering and construction
8		considerations related to proposed Segment Alternatives for the Project based on review
9		of these alternatives with my staff and design/engineering consultants.
10		
11		II. DESCRIPTION OF THE ROCHESTER PROJECT
12	Q.	PLEASE PROVIDE MORE INFORMATION ON THE NEED FOR ADDITIONAL
13		NATURAL GAS CAPACITY IN ROCHESTER, AS DISCUSSED IN MERC'S
14		APPLICATION.
15	A.	MERC's Rochester distribution system is currently at capacity and must be upgraded to
16		meet our current needs, as well as to meet the expected growth in customer demand over
17		the next ten years.
18		
19		To meet the projected increase in demand, the capacity of both the interstate transmission
20		pipeline system (by Northern Natural Gas ("NNG")) in the Rochester area and MERC's
21		Rochester distribution system must be expanded.
22		

1	Q.	HOW WILL MERC EXPAND ITS DISTRIBUTION SYSTEM IN THE ROCHESTER
2		AREA?
3	A.	To handle the increased supply flow and operating pressure resulting from NNG's
4		upgrades to its pipeline system in the Rochester area, MERC will construct an
5		approximately 13.1-mile long main distribution pipeline that connects a new TBS 1D in
6		northwest Rochester, to the Proposed TBS in west Rochester, and to new District
7		Regulator Station ("DRS") in the vicinity of TBS 1B in southeast Rochester. This new
8		pipeline will be designed with a maximum allowable operating pressure ("MAOP") of
9		500 pounds per square inch gauge ("psig"), tying together the northern and southern
10		portions of our existing TBS system. Although the pipeline will have an MAOP of 500
11		psig, the 5.1 miles of 16-inch steel pipe from TBS 1D to the Proposed TBS will be
12		operated between 400 psig to 450 psig. The 8.0 miles of 12-inch steel pipe from the
13		Proposed TBS to the DRS will be operated between 250 psig to 275 psig.
14		
15		III. PROJECT LAND REQUIREMENTS
16	Q.	WHAT RIGHT-OF-WAY WILL BE REQUIRED FOR THE PROJECT?
17	A.	MERC will require a 50-foot permanent right-of-way and a 50-foot temporary right-of-
18		way for the length of the pipeline. The 50-foot permanent right-of-way will be used for
19		the location of the steel pipeline and to ensure access for inspections and maintenance
20		and to avoid encroachment on the natural gas pipeline. The 50-foot temporary right-of-
21		way will only be used for purposes of pipeline construction and will expire upon
22		completion of Project construction.

23

1	Q.	WILL THE PIPELINE BE CENTERED IN THE 50-FOOT PERMANENT RIGHT-OF-
2		WAY?
3	A.	Not necessarily. The pipeline will be located in the 50-foot right-of-way in the location
4		that makes the most sense given the location of the pipeline and surrounding
5		development. The pipeline may be offset to one side of the permanent right-of-way but
6		will maintain a minimum five-foot separation from the pipeline centerline and the edge
7		of the permanent right-of-way.
8		
9	Q.	WILL THE TEMPORARY RIGHT-OF-WAY BE EQUALLY DISTRIBUTED
10		BETWEEN THE TWO SIDES OF THE PERMANENT RIGHT-OF-WAY?
11	A.	It is unlikely that the 50-foot temporary right-of-way would measure 25 feet on each side
12		of the permanent right-of-way. The purpose of the temporary right-of-way is to provide
13		adequate space for construction equipment, the staging and welding of the pipe, and
14		storage of the soil spoil piles. Depending on the construction conditions, the temporary
15		right-of-way may be all located on one side of the permanent right-of-way or be divided
16		between the two sides of the permanent right-of-way.
17		
18	Q.	ARE THERE ANY LAND REQUIREMENTS NECESSARY FOR THE PROJECT
19		NOT ADDRESSED IN THE APPLICATION OR THE COMPARATIVE
20		ENVIRONMENTAL ASSESSMENT ("CEA")?
21	A.	Yes. MERC will need property for temporary workspace at horizontal directional drilling
22		("HDD") locations beyond the 225 square feet that will be excavated.
23		

1	Q.	WHY IS ADDITIONAL WORK SPACE FOR HDD NECESSARY?
2	A.	Although only approximately 225 square feet will be excavated at each end of an HDD
3		location, an area of appropriate size is necessary for staging equipment at each HDD
4		workspace. These work spaces need to be at least 20,000 square feet in total size,
5		although some HDD work spaces may need to be larger depending on the length, depth,
6		and angle of the HDD.
7		
8		It is MERC's intention to co-locate all temporary extra workspaces for HDD within the
9		construction right-of-way (the combined permanent and temporary right-of-way). There
10		may be feature (road or waterbody) constraints that would require the temporary extra
11		workspace to be located outside that construction right-of-way but within the 500-foot
12		route width. In rare circumstances, temporary extra workspace may be required outside
13		the 500-foot route width for pipe stringing where the route makes a turn in direction and
14		feature constraints do not allow pipe stringing within the route width. In any instance
15		where temporary extra workspace for HDD is necessary for construction of the pipeline,
16		MERC will obtain an easement from the affected landowner.
17		
18	Q.	DOES MERC REQUEST ANY SPECIAL CONDITIONS TO THE ROUTE PERMIT
19		TO ENSURE IT HAS APPROPRIATE AUTHORITY TO ACQUIRE THESE
20		NECESSARY WORK SPACES?
21	A.	Yes. Consistent with other Route Permits issued by the Commission, MERC requests
22		that the following special condition be included in the Route Permit for the Project.
23 24		The Permittee may obtain extra temporary workspace that is needed at locations where the project will cross features such as

1 2 3 4 5 6 7 8		waterbodies, roads, railroads, side slopes, and other special circumstances and HDD will be utilized. Extra temporary workspace will be allowed for construction activities including, but not limited to, staging equipment and stockpiling spoil material to facilitate construction of the pipeline. These dimensions will vary depending on actual site-specific conditions, but will typically be 20,000 square feet on each side of the features crossed.
9		IV. ROUTE DESIGN CONSIDERATIONS
10	Q.	HAVE YOU REVIEWED ALL THE ROUTES AND SEGMENT ALTERNATIVES
11		INCLUDED IN THE CEA?
12	A.	I have reviewed the Routes and Segment Alternatives included in the CEA with my staff
13		and with my consultants who will be responsible for the detailed engineering and design
14		of the Project.
15		
16	Q.	HAS MERC IDENTIFIED ANY DESIGN OR ENGINEERING CONCERNS WITH
17		ANY OF THE SEGMENT ALTERNATIVES?
18	A.	Yes. MERC has identified design or engineering concerns with Segment Alternatives
19		CD-2, DE-2, EF-2, EG-2, EG-3, and EG-4.
20		
21	Q.	PLEASE EXPLAIN.
22	A.	Segment Alternatives CD-2, DE-2, EF-2, EG-2, EG-3, and EG-4 all, in some form,
23		follow the existing BP Pipeline, a liquid petroleum pipeline constructed in the late 1940s.
24		This pipeline was constructed prior to the implementation of federal or state standards for
25		petroleum pipeline depth of cover. During both of the Public Information Meetings held
26		for the proposed Project (February 29, 2016, and September 28, 2016), landowners
27		commented that the BP Pipeline was located at varying depths of cover along its length

	and some commented that field or farm equipment had encountered the pipeline in recent
	years. Based on this information, any alternative that would follow any portion of the BP
	Pipeline would pose unique challenges for accessibility, both for construction and
	maintenance purposes, when compared to other alternatives in these areas. Any of these
	Segment Alternatives would also require more separation between the BP Pipeline and
	the proposed Project, resulting in additional impacts for the landowners' property.
	Construction accessibility would also be challenging and more costly as matting over the
	BP Pipeline right-of-way would also be necessary to minimize any possibility for contact
	with, or damage to, the BP Pipeline. Finally, any future maintenance activities could be
	challenging because vehicle traffic would not be able to traverse the BP Pipeline without
	additional matting.
Q.	DOES THIS MEAN THAT NONE OF THESE SEGMENT ALTERNATIVES CAN BE
	CONSTRUCTED?
A.	While MERC believes these Segment Alternatives (CD-2, DE-2, EF-2, EG-2, EG-3, and
	EG-4) could be constructed, accessibility of these Segment Alternatives is an issue that is
	unique to these Segment Alternatives. For each of these Segment Alternatives, there are
	other options in the record that would not have these accessibility concerns. Further, as
	discussed by Mr. Rick Moser, it appears that all Segment Alternatives, when comparing

EG-2, EG-3, EG-4, and EG-7 are not the preferred choices for the Project.

those that follow the BP Pipeline to those that do not follow the BP Pipeline, are

anticipated to have minimal impacts relative to environmental criteria. So, on balance,

with accessibility as the differentiating factor, Segment Alternatives CD-2, DE-2, EF-2,

was designed around a natural gas transmission line. I am also aware of a commercial

development in nearby Fillmore County occurring around a natural gas pipelines. I have

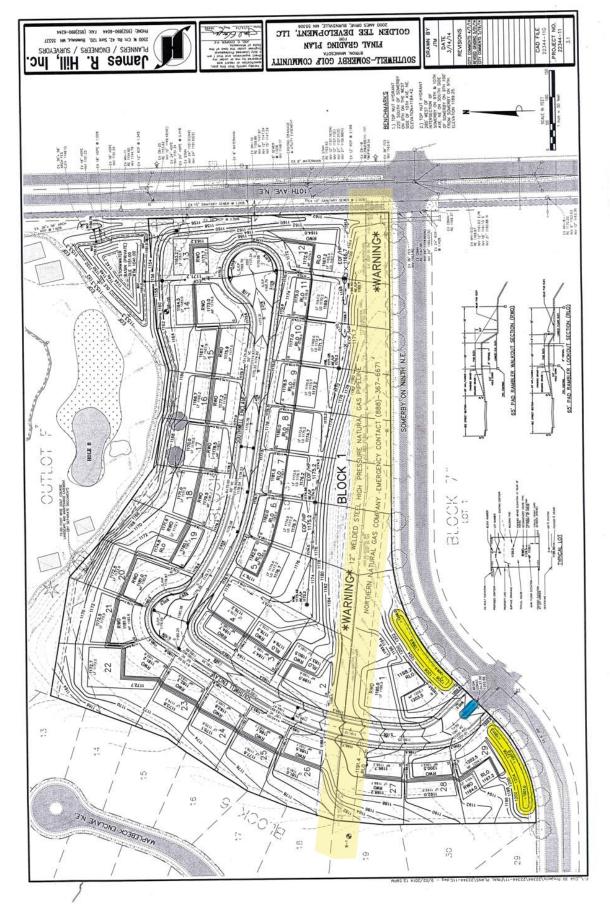
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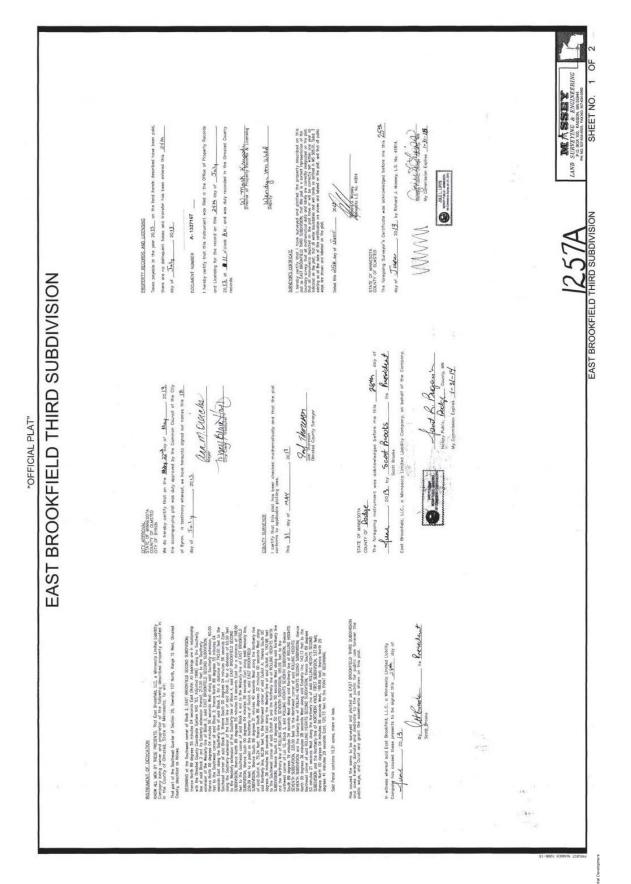
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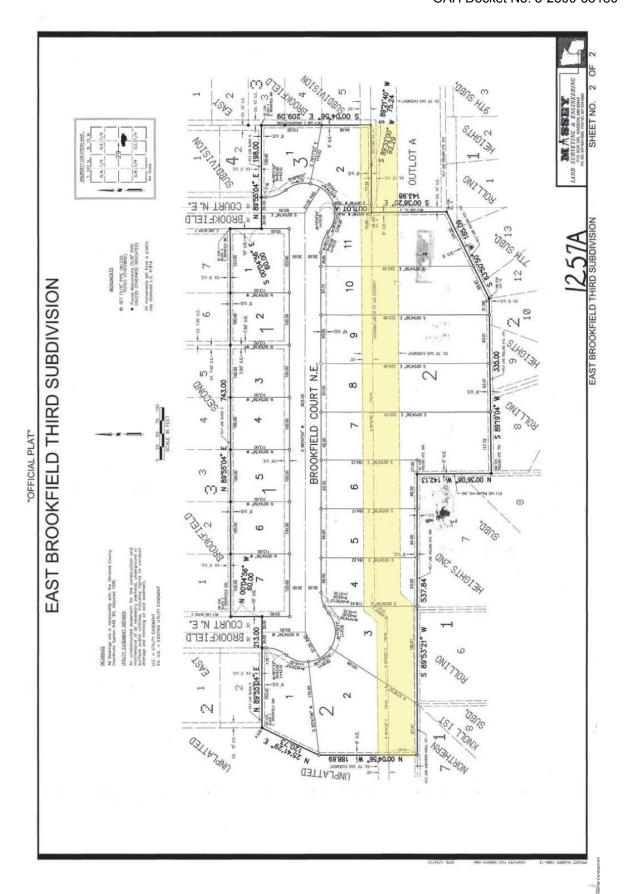
1		attached schematics of the residential and commercial developments and how they were
2		designed around the natural gas pipelines in Schedule 1 to my testimony.
3		
4	Q.	COULD A DEVELOPMENT THAT HAS NOT FINALIZED ITS DESIGN PLANS
5		REASONABLY DEVELOP A PLAN THAT COULD INCORPORATE THE
6		NATURAL GAS PIPELINE INTO ITS DEVELOPMENT?
7	A.	Yes. As I mentioned, it is feasible to design residential or commercial developments
8		around a natural gas pipeline, when incorporated early in the process. Given that the
9		Westridge Hills GDP is currently out-of-date, and the timing of the Rochester Project, it
10		is reasonable that the Westridge Hills development could be designed around the natural
11		gas distribution pipeline.
12		
13		B. Natural Resources
14	Q.	COULD IMPACTS TO THE SITE IDENTIFIED BY THE MNDNR NORTH OF 40TH
15		STREET SW BE MITIGATED?
16	A.	Yes. Based on the information available at this time, MERC believes it can complete
17		HDD under the area identified as an area of concern by the MnDNR. Mr. Moser's Direct
18		Testimony provides additional information on the area and the mitigation of impacts.
19		
20	Q.	HOW DOES MERC INTEND TO IDENTIFY KARST FEATURES COMMON TO
21		THE ROCHESTER AREA DURING PROJECT PLANNING AND CONSTRUCTION?
22		
	A	MERC has already identified that the Modified Preferred Route avoids high probability

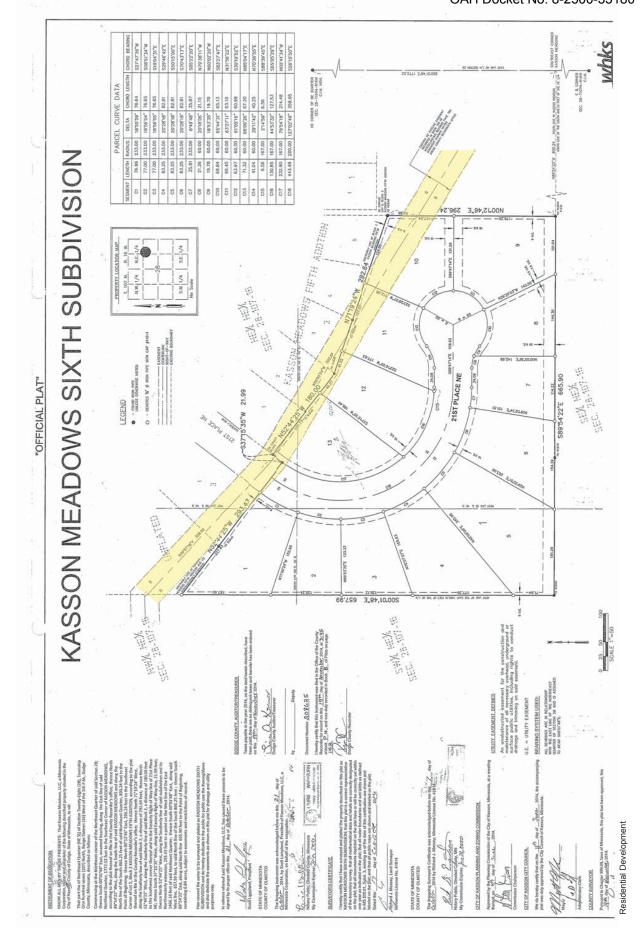
1		Commission, MERC intends to deploy ground-penetrating radar as part of the design
2		process in high potential sinkhole areas to identify any of these features. Should these
3		features be identified, the pipeline alignment may be modified to avoid them. Mitigation
4		measures, such as anti-seep collars will be utilized to prevent the movement of water
5		along the pipeline in areas adjacent to sinkholes as well as other sensitive geologic
6		features such as springs and underground stream features. The possibility of
7		encountering these features along any route selected for the Project further supports the
8		inclusion of the special condition identified in the Direct Testimony of Ms. Lee.
9		
10		C. Anticipated Alignment
11	Q.	ARE THERE ANY SEGMENT ALTERNATIVES THAT SHOULD HAVE A
12		DIFFERENT ALIGNMENT FROM THAT SHOWN IN THE CEA FOR DESIGN OR
13		ENGINEERING PURPOSES?
14	A.	Yes. After additional review of the alignments in the CEA and the existing topography in
15		the area, if any of the Segment Alternatives that continue east from the intersection of
16		11 th Avenue SW and 48 th Street SW were selected by the Commission for the Project
17		(HJ-3, HJ-4, IJ-3 and IJ-4), the alignment east of 11 th Avenue SW should continue along
18		the south side of 48 th Street SW to Fern Avenue.
19		

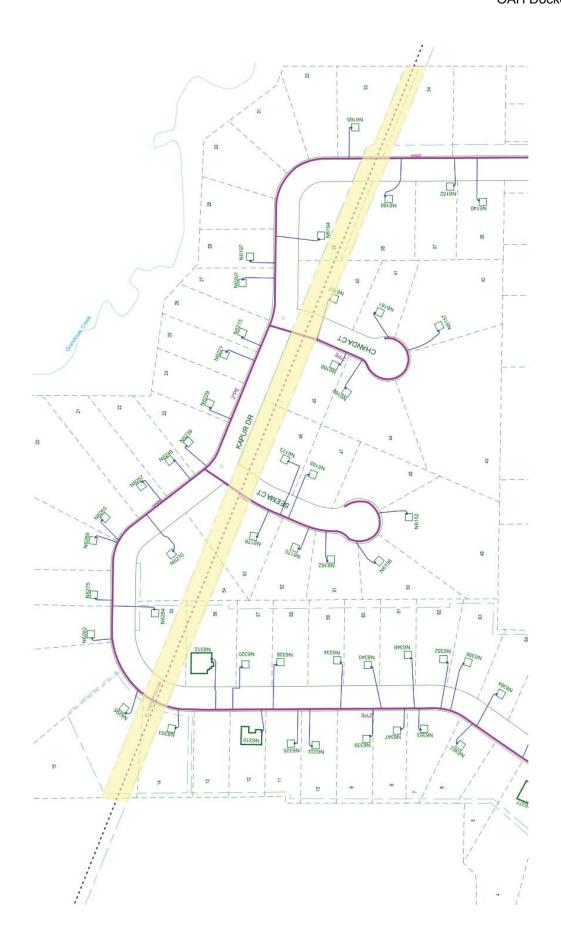
1	Q.	WHY SHOULD THE ALIGNMENT OF THESE SEGMENT ALTERNATIVES
2		CONTINUE ON THE SOUTH SIDE OF 48TH STREET SW INSTEAD OF
3		CROSSING NORTH, AS SHOWN IN THE CEA?
4	A.	In reviewing this area, the northeast corner of the intersection of 11 th Avenue SW and
5		48 th Street SW has a large change in topography and a water feature in this area. While
6		this does not make this alignment incapable of being constructed, given this dramatic
7		change in topography and the presence of the water feature, crossing to the north in this
8		area is not the best alignment for theses Segment Alternatives. If the Commission were
9		to determine that any of these Segment Alternatives were the most appropriate route for
10		the Project, the anticipated alignment should continue along the south side of 48 th Street
11		SW from 11 th Avenue SW east to Fern Avenue.
12		
13		V. CONCLUSION
14	Q.	DOES THIS COMPLETE YOUR DIRECT TESTIMONY?
15	A.	Yes, it does.











Sheboygan Natural Gas Pipeline and Residential Development

