



# Maps & References

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## **Maps & References**

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Main Line Valves

Site Safety Plot Plan

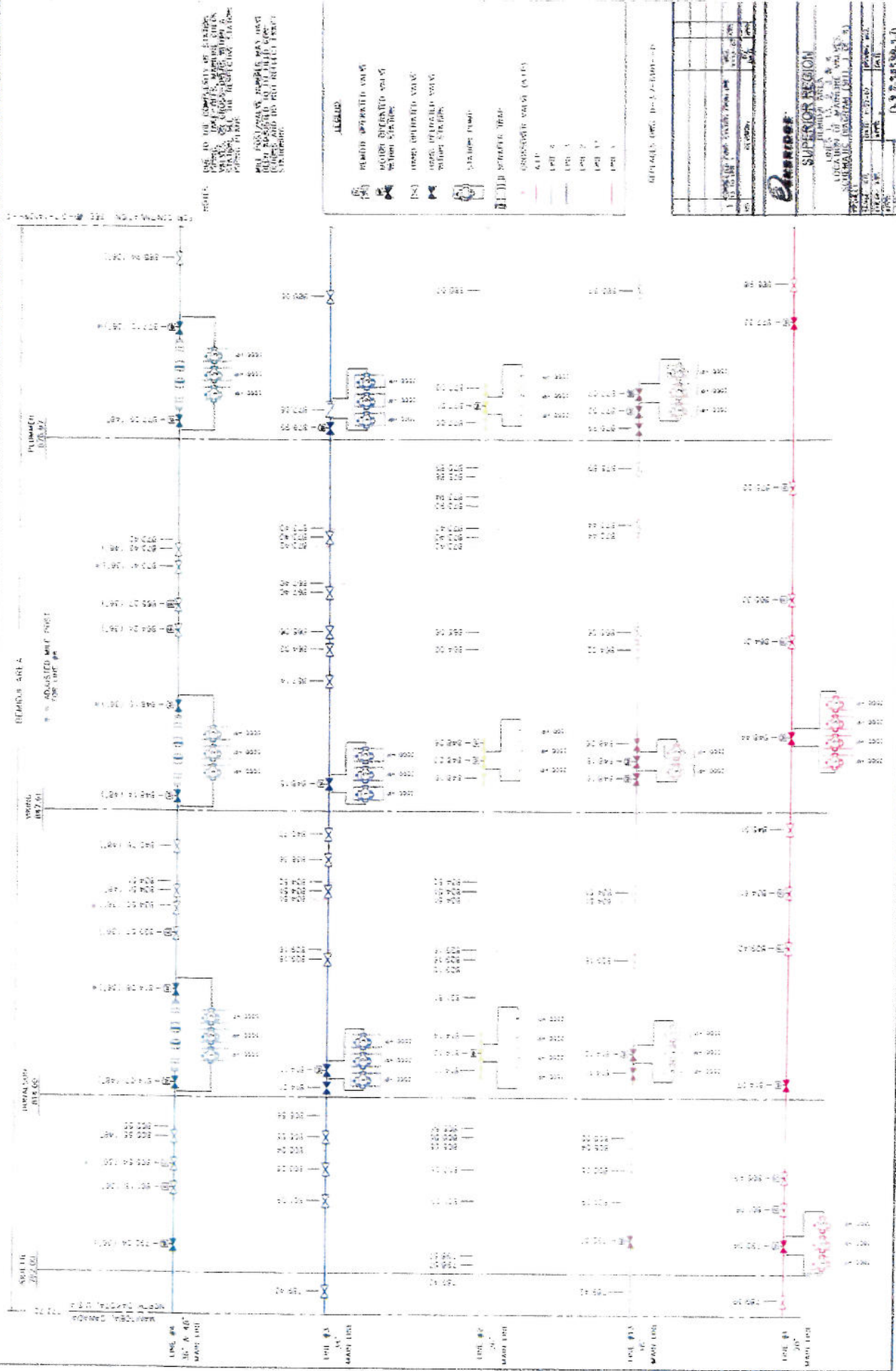
Pipeline Information  
Release Alert

Pipeline System Map

HCA Overview Map  
HCA Tables

Equipment Staging Area Map

Emergency Response Map



NO.	DESCRIPTION	UNIT	QTY	REMARKS
1	...	...	...	...
2	...	...	...	...
3	...	...	...	...
4	...	...	...	...
5	...	...	...	...
6	...	...	...	...
7	...	...	...	...
8	...	...	...	...
9	...	...	...	...
10	...	...	...	...












# ENBRIDGE ENERGY SITE SAFETY PLAN

LEAK LOCATION \_\_\_\_\_ DATE \_\_\_\_\_  
 SITE # (if more than one) \_\_\_\_\_

(Identify Incident Location and Evacuation Routes)

(Check Requirements for Each) (Identify Hot, Warm, & Cold Zone Boundaries)  
 Insert distances, directions, or landmarks for each zone

<p><b>Hot Zone Requirements</b>          Min. 24 hrs training (I.D.)          Fire Resistant Clothing          O2 Resistant Clothing          Respiratory Protection          S.C.B.A.          Air Purifying Respirator          Proper PPE          Other _____</p> <p><b>Warm Zone Requirements</b>          Min. 8 hrs training (I.D.)          Fire Resistant Clothing          O2 Resistant Clothing          Respiratory Protection          S.C.B.A.          Air Purifying Respirator          Proper PPE          Other _____</p>	
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(Identify on Env. Sensitivity map or other)

## Emergency Medical Facility

(Identify Route of Travel)

Emergency/Response Directory on Site? (Review Identification of Government Agencies pages)  
 (Review Identification Chart Page)

(Review Reporting Procedures pages)  
 (Review Safety Equipment/Leak List Procedures)  
 Material Safety Data Sheets (MSDS) Available?  
 (Review Emergency Response Directory pages)  
 (Locate Sheets from Suppliers)  
 Emergency Evacuation Routes & Means of Communication Established?  
 Risk Assessment of Site Conducted?  
 Book 7 Emergency Response Plan on Site?  
 Environmental Sensitivity Maps Available?  
 Book 2 Safety on Site?  
 Book 3 Pipeline Facilities on Site?

Monitoring Log Checklist  
 (Use one of 8a)  
 A. Continuous \_\_\_\_\_  
 B. Periodic \_\_\_\_\_  
 1. Date/Time/Temp/Location/Wind Direction \_\_\_\_\_  
 2. Name of person's conducting test \_\_\_\_\_  
 3. Type of instrument's used \_\_\_\_\_  
 4. Calibration dates, persons name \_\_\_\_\_  
 5. Types of hazards to be tested or sampling \_\_\_\_\_  
 6. Record conditions and/or ambient reading \_\_\_\_\_  
 7. Other conditions as appropriate \_\_\_\_\_  
 (Make a copy of daily log)

(Post City, County or Env. Sensitivity map and show Route)  
 (Attach 11.25.01)

Phone# \_\_\_\_\_  
 Address \_\_\_\_\_  
 Contact Person(s) (if any) \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 (Please write down name(s))

Name of Incident Commander \_\_\_\_\_  
 Name of Site Supervisor \_\_\_\_\_  
 Name of Site Safety Person(s) \_\_\_\_\_  
 Name of Contractors at Site \_\_\_\_\_  
 Number of Employees at Site \_\_\_\_\_

Update as follows in case of personnel changes:  
 Attachments should be kept at Command Post for reference and retention.



### Miles of Mainline Pipe

#### Enbridge Energy, Limited Partnership – Lakehead

Location	Active Miles	Inactive Miles	HCA Miles (Unlapped)
<b>U.S. Border to Superior</b>	<b>1,437</b>		<b>414</b>
20" Line 1 (U.S. Border to Clearbrook)-CO and NGL	136		31
18" Line 1 (Clearbrook to Superior)-CO and NGL	190		96
26" Line 2	325		85
34" Line 3	324		89
36"/48" Line 4 (U.S. Border to Clearbrook)(96.73)36"	136		20
36"/48" Line 4 (Clearbrook to Superior) (111.27) 36"	191		72
18" Line 13 (U.S. Border to Clearbrook)	135		21
<b>Superior to Sarnia (Canadian Border)</b>	<b>642</b>		<b>220</b>
30" Line 5 – CO and NGL	642		220
<b>Superior to Griffith</b>	<b>954</b>		<b>308</b>
34" Line 6A	465		174
24" Line 14	461		106
24" Line 64	26		26
34" Griffith Hartsdale Transfer (TL 1)	0.6		0.6
36" Griffith Hartsdale Interconnect (GFHT 2)	0.8		0.8
36" Griffith Hartsdale Interconnect (GFHT 3)	0.8		0.8
<b>Griffith to Sarnia (Canadian Border)</b>	<b>286</b>		<b>132</b>
30" Line 6B	286		118
30" Loops		103	14
<b>Buffalo Extension</b>	<b>23</b>		<b>22</b>
12/20" Line 10	23		22
<b>Enbridge Energy, Limited Partnership-Total Miles</b>	<b>3,342</b>	<b>103</b>	<b>1,096</b>



### ENBRIDGE -- Affiliated Entities

Location	Active Miles	Inactive Miles	HCA Miles (Unlapped)
<b>Enbridge Pipelines (North Dakota) LLC</b>	<b>501</b>	<b>57</b>	<b>41</b>
6", 10", 12" and 16"	501	57	41
<b>Enbridge Pipelines (Toledo) Inc.</b>	<b>88</b>		<b>39</b>
16" Line 17 (Stockbridge to Freedom Junction)	35		7
16" Line 17 (Freedom Junction to Toledo)	53		32
<b>Enbridge Pipelines (Ozark) L.L.C.</b>	<b>480</b>	<b>170</b>	<b>299</b>
22" Line 51	433		230
10" Line 52 (intra-state)	47		29
10" Kamo		170	40
<b>CCPS Transportation, LLC</b>	<b>657</b>	<b>7</b>	<b>211</b>
22" Line 55 (Hartsdale to Flanagan)	75		24
22" Line 55 (Flanagan to Key)	251		44
24" Line 66 (Key to Cushing)	331		140
16" Monee		7	3
<b>Enbridge Storage (Patoka) LLC</b>	<b>0</b>	<b>0</b>	<b>0</b>
This entity has tankage only, no pipeline miles			
<b>Enbridge (affiliated entities) Total Miles</b>	<b>1,783</b>	<b>234</b>	<b>509</b>
<b>Enbridge Total Miles</b>	<b>5,068</b>	<b>337</b>	<b>1686</b>

# Enbridge Pipelines - RELEASE ALERT

DATE: 05-Mar-2007 09:03

## RELEASE INFORMATION

A failure in the pipeline system which results in:

- Loss of 5 gallons or more of liquid OR
- Escape of more than 5 barrels NGL to atmosphere OR
- Unintentional explosion or fire OR
- Death of any person OR
- Bodily harm that resulted in medical treatment – loss of consciousness – modified work – or necessity to carry the person from the scene OR
- Estimated property damage exceeding \$50000 (including repair & cleanup) OR
- Pollution of a water body (river/stream/wetland/reservoir) including <5 gallon release indicated by a "sheen on water" OR
- Reportability to a state agency OR
- Contaminated soil left in place OR
- Any other event that the Region Manager deems significant for internal awareness but not external reporting purposes.

A. List all Federal, State, County, or Local Regulatory or Governmental Agencies that have been notified:

List Telephone report            NRC Report Number .....

NRC Report Date .....

B. Date of Incident (MM/DD/YY): .....

Time of Incident (MST): .....

C. Location .....

Region:..... Not Specified

Station:.....

State:.....

Service (Line No):.....

Mile Post: .....

D. Commodity Type Released:.....

Crude Type .....

Preliminary estimate of barrels released:.....

E. Other people to include in distribution of Release Alert:

F. Description of Incident: (Include significant Environmental, Safety, Public Affairs, Regulatory, or Financial concerns)

Site State:  
Site County:  
Site City:



**SUPERIOR REGION**

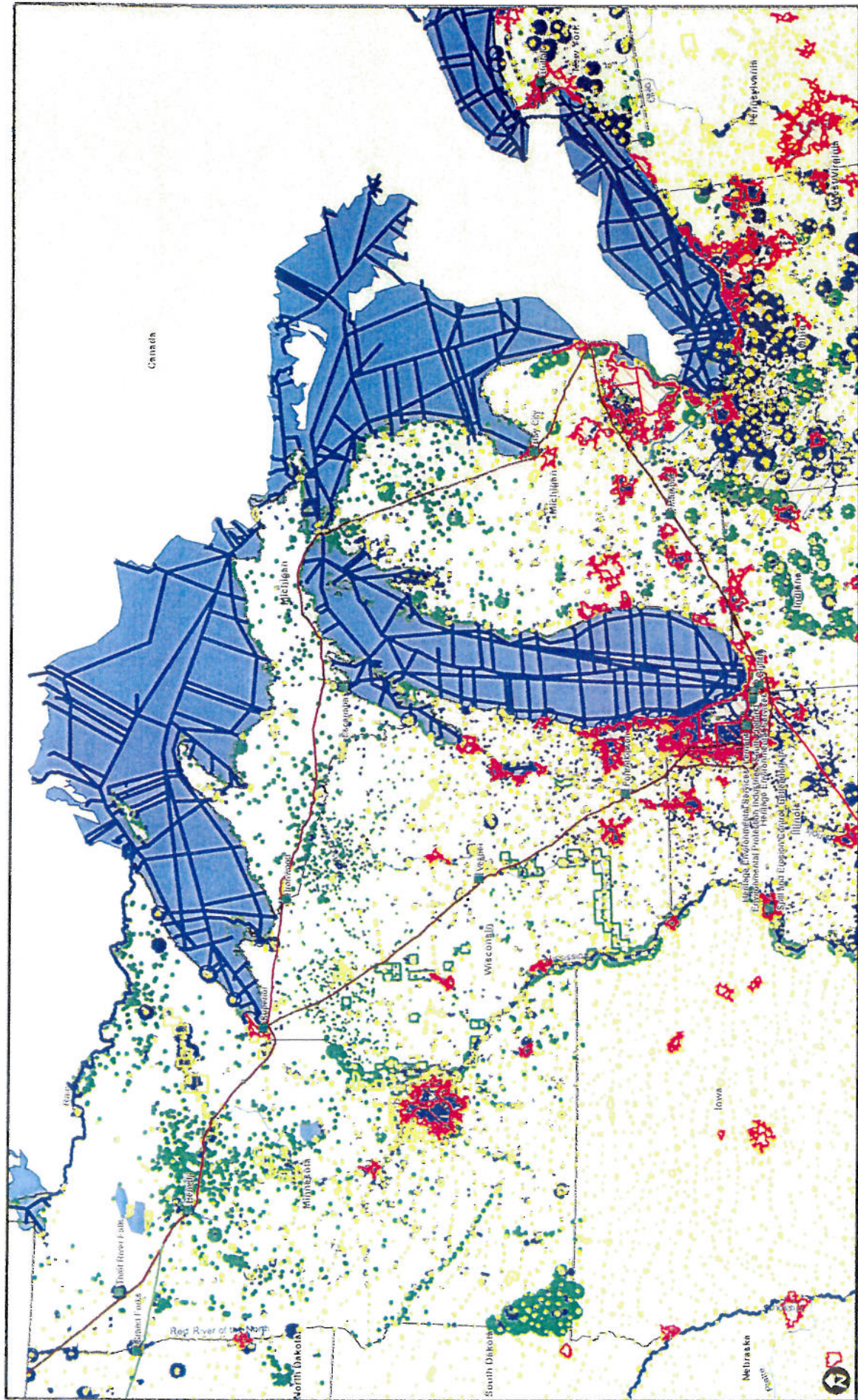
- U.S. BORDER (Grid) to SUPERIOR
  - LINE 1 - 20' - 30'
  - LINE 2 - 20'
  - LINE 3 - 34'
  - LINE 4 - 36.75'
  - LINE 5 - 30'
- SUPERIOR to MP 97.25 (U.S. HWY M)
  - LINE 6A - 35'
  - LINE 6B - 35'
- SUPERIOR to MP 154.25 (Densitometry)
  - LINE 7 - 30'

**CHICAGO REGION**

- MP 97.25 to GRIFFIN
  - LINE 6A - 35'
  - LINE 6B - 35'
  - LINE 6C - 35'
- GRIFFIN to U.S. BORDER (Sourin)
  - LINE 6A - 35'
  - LINE 6B - 35'
- MP 154.25 to U.S. BORDER (Sourin)
  - LINE 7 - 30'
- BUFFALO EXTENSION
  - LINE 8 - 30'
  - LINE 9 - 30'
- ENBRIDGE PIPELINES (HOLD) INC
  - LINE 10 - 30'

NO.	DESCRIPTION	DATE	BY
10	ISSUED FOR CONSTRUCTION	10/20/00	ENR
11	REVISED FOR MP 11	1/2/01	ENR
12	REVISED FOR MP 12	1/2/01	ENR
13	REVISED FOR MP 13	1/2/01	ENR
14	REVISED FOR MP 14	1/2/01	ENR
15	REVISED FOR MP 15	1/2/01	ENR
16	REVISED FOR MP 16	1/2/01	ENR
17	REVISED FOR MP 17	1/2/01	ENR
18	REVISED FOR MP 18	1/2/01	ENR
19	REVISED FOR MP 19	1/2/01	ENR
20	REVISED FOR MP 20	1/2/01	ENR

**ENBRIDGE**  
**PIPE LINE SYSTEM MAP**  
 (FOR CONSTRUCTION PURPOSES)  
 (NOT FOR PUBLIC RELEASE)  
 DATE: 10/20/00  
 BY: ENR  
 PROJECT NO.: 00-10149-10-0



DATE ISSUED: April 2007	ENBRIDGE
DATE REVISED:	ENBRIDGE
SCALE: 1:4,000,000	ENBRIDGE
DRAWN BY: JAI	ENBRIDGE
SERIES: HCA Overview Map	ENBRIDGE

# Enbridge Energy, Limited Partnership Superior and Chicago HCA Overview Map



Legend	
	High Consequence Areas (HCA)
	High Population HCA
	Other Population HCA
	Ecological HCA
	Commercially Navigable Waterways
	Waterways
	High Consequence Areas (HCA)
	Drinking Water HCA
	Ecological HCA
	Commercially Navigable Waterways
	Waterways
	High Consequence Areas (HCA)
	Drinking Water HCA
	Ecological HCA
	Commercially Navigable Waterways
	Waterways
	High Consequence Areas (HCA)
	Drinking Water HCA
	Ecological HCA
	Commercially Navigable Waterways
	Waterways





**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Stationing	Begin Stationing	End Stationing	Divertor Begin Stationing	End Stationing	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
<b>Crude Oil</b>										
<b>Gretna to Clearbrook 20" (0 - 716,232)</b>										
1	20-inch		141,918	148,648			1.27	802	Red River	Enbridge CNW / Red River
1	20-inch		155,168	158,248			0.58	903	Red River	Enbridge CNW / Red River
1	20-inch		688,310	691,010			0.51	904	Lost River	Enbridge DW / Lost River
1	20-inch		593,425	599,735			1.20	887	Oklee	Enbridge DW / Oklee
1	20-inch		477,118	482,548			1.03	864	St. Hilaire	Enbridge DW / St. Hilaire
1	20-inch		141,916	148,648			1.27	802	Red River	Enbridge ESA / Red River
1	20-inch		155,168	158,248			0.58	803	Red River	Enbridge ESA / Red River
1	20-inch		4,145	26,615			4.26	777	Pembina River	U.S. DW / Pembina River
1	20-inch		537,116	543,682			1.24	877	Plummer	U.S. DW / Plummer
1	20-inch		447,666	452,446			0.91	859	Thief River Falls	U.S. DW / Thief River Falls
1	20-inch		453,491	460,637			1.35	860	Thief River Falls	U.S. DW / Thief River Falls
1	20-inch		461,537	469,117			1.44	862	Thief River Falls	U.S. DW / Thief River Falls
1	20-inch		472,788	475,268			0.47	864	Thief River Falls	U.S. DW / Thief River Falls
1	20-inch		471,587	476,968			1.02	864	Thief River Falls	U.S. ESA / Thief River Falls
1	20-inch		472,268	475,268			0.57	864	Thief River Falls	U.S. ESA / Thief River Falls
1	20-inch		472,268	476,268			0.76	864	Thief River Falls	U.S. ESA / Thief River Falls
<b>Clearbrook to Superior 18" (716,232 - 1,742,883)</b>										
1	18-inch		880,614	886,199			1.06	941	Bemidji (South)	U.S. DW / Bemidji (South)
1	18-inch		914,232	919,514			1.00	948	Necktie River	U.S. DW / Necktie River
1	18-inch		1,051,554	1,062,863			2.14	974	Bena	U.S. ESA / Bena
1	18-inch		782,637	791,281			1.64	923	Buzzle Lake	U.S. ESA / Buzzle Lake
1	18-inch		976,614	987,254			2.02	959	Cass Lake	U.S. ESA / Cass Lake
1	18-inch		981,254	991,265			1.90	960	Cass Lake	U.S. ESA / Cass Lake
1	18-inch		864,816	877,340			2.37	939	Lake Irving	U.S. ESA / Lake Irving
1	18-inch		872,590	881,559			1.70	940	Lake Marquette	U.S. ESA / Lake Marquette
1	18-inch		917,632	922,090			0.84	948	Midge Lake	U.S. ESA / Midge Lake
1	18-inch		917,632	926,749			1.73	948	Midge Lake	U.S. ESA / Midge Lake
1	18-inch		793,524	804,430			2.07	925	Pinewood	U.S. ESA / Pinewood
1	18-inch		1,018,434	1,027,094			1.64	967	Portage Lake	U.S. ESA / Portage Lake
1	18-inch		1,019,044	1,030,644			2.20	967	Portage Lake	U.S. ESA / Portage Lake
1	18-inch		1,020,944	1,029,644			1.65	966	Portage Lake	U.S. ESA / Portage Lake
1	18-inch		1,038,085	1,044,985			1.31	971	Portage Lake East	U.S. ESA / Portage Lake East



**SUPERIOR REGION RESPONSE ZONE-Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Diversions		Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
				Begin Stationing	End Stationing				
<b>Crude Oil</b>									
1	18-inch	1,003.365	1,006.965			0.68	964	Sucker Lakes	U.S. ESA / Sucker Lakes
1	18-inch	828.908	838.066			1.73	932	Wilton	U.S. ESA / Wilton
1	18-inch	1,116.634	1,122.419			1.10	986	Mississippi River	Enbridge CNW / Mississippi River
1	18-inch	1,137.218	1,140.718			0.66	990	Mississippi River	Enbridge CNW / Mississippi River
1	18-inch	1,203.442	1,209.395			1.13	1,003	Blackwater Lake	Enbridge DW / Blackwater Lake
1	18-inch			3,899	25,080	4.01	1,007	Grand Rapids	Enbridge DW / Grand Rapids
1	18-inch	1,124.569	1,137.552			2.46	988	Ball Club Lake	U.S. ESA / Ball Club Lake
1	18-inch	1,133.292	1,141.065			1.47	989	Ball Club Lake	U.S. ESA / Ball Club Lake
1	18-inch	1,060.563	1,072.413			2.24	975	Ball Club Lake	U.S. ESA / Ball Club Lake
1	18-inch	1,061.963	1,072.813			2.05	976	Bena	U.S. ESA / Bena
1	18-inch	1,161.336	1,174.037			2.41	995	Bena	U.S. ESA / Bena
1	18-inch	1,162.660	1,171.974			1.76	995	Deer River	U.S. ESA / Deer River
1	18-inch	1,110.854	1,123.169			2.33	985	Deer River	U.S. ESA / Deer River
1	18-inch	1,083.003	1,094.503			2.18	980	Mississippi River	U.S. ESA / Mississippi River
1	18-inch	1,098.743	1,101.323			0.49	982	Nushka Lake	U.S. ESA / Nushka Lake
1	18-inch	1,181.637	1,183.137			0.28	998	Nushka Lake	U.S. ESA / Nushka Lake
1	18-inch	1,181.637	1,183.137			0.28	998	White Oak Lake	U.S. ESA / White Oak Lake
1	18-inch	1,684.273	1,687.523			0.62	1,093	White Oak Lake	U.S. ESA / White Oak Lake
1	18-inch	1,586.344	1,588.704			0.45	1,074	Pokegama	Enbridge DW / Pokegama
1	18-inch	1,610.869	1,612.369			0.28	1,079	Twin Lakes	Enbridge DW / Twin Lakes
1	18-inch	1,692.505	1,694.555			0.39	1,094	Wrenshall	Enbridge DW / Wrenshall
1	18-inch	1,706.250	1,712.883			1.26	1,098	Superior	U.S. CNW / Superior Harbor
1	18-inch	1,706.526	1,712.883			1.20	1,098	Superior	U.S. CNW / Superior Harbor
1	18-inch	1,667.493	1,676.697			1.74	1,091	Superior	U.S. DW / Superior
1	18-inch	1,692.505	1,702.550			1.90	1,095	Oliver	U.S. ESA / Oliver
1	18-inch	1,706.250	1,712.883			1.26	1,098	Superior	U.S. HPA / Superior
1	18-inch	1,706.250	1,712.883			1.26	1,098	Superior	U.S. HPA / Superior



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UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Diversion Stationing		Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
				Begin Stationing	End Stationing				
<b>Natural Gas Liquids</b>									
<b>Greina to Clearbrook 20" (0 - 716,232)</b>									
1	20-inch	134,268	160,618			4.99	802	Red River	Enbridge CNW / Red River
1	20-inch	469,037	477,868			1.67	864	Thief River Falls	U.S. ESA / Thief River Falls
1	20-inch	469,587	480,418			2.05	865	Thief River Falls	U.S. ESA / Thief River Falls
1	20-inch	469,787	480,418			2.01	865	Thief River Falls	U.S. ESA / Thief River Falls
<b>Clearbrook to Superior 18" (716,232 - 1,712,883)</b>									
1	18-inch	779,887	793,832			2.64	923	Pinewood	U.S. ESA / Pinewood
1	18-inch	791,132	807,382			3.08	925	Pinewood	U.S. ESA / Pinewood
1	18-inch	826,015	842,804			3.18	932	Wilton	U.S. ESA / Wilton
1	18-inch	862,404	879,290			3.20	939	Lake Irving	U.S. ESA / Lake Irving
1	18-inch	869,790	884,746			2.83	940	Lake Irving	U.S. ESA / Lake Irving
1	18-inch	914,164	930,052			3.01	948	Midge Lake	U.S. ESA / Midge Lake
1	18-inch	921,690	927,449			1.09	949	Midge Lake	U.S. ESA / Midge Lake
1	18-inch	973,130	989,654			3.13	959	Cass Lake	U.S. ESA / Cass Lake
1	18-inch	978,558	994,015			2.93	960	Cass Lake	U.S. ESA / Cass Lake
1	18-inch	982,654	990,904			1.56	960	Cass Lake	U.S. ESA / Cass Lake
1	18-inch	1,000,620	1,011,184			2.00	964	Sucker Lakes	U.S. ESA / Sucker Lakes
1	18-inch	1,016,044	1,030,394			2.72	966	Portage Lake	U.S. ESA / Portage Lake
1	18-inch	1,017,194	1,033,414			3.07	968	Portage Lake	U.S. ESA / Portage Lake
1	18-inch	1,017,544	1,032,764			2.88	968	Portage Lake	U.S. ESA / Portage Lake
1	18-inch	1,025,594	1,036,064			1.98	969	Portage Lake	U.S. ESA / Portage Lake
1	18-inch	1,034,414	1,048,854			2.73	971	Portage Lake	U.S. ESA / Portage Lake
1	18-inch	1,048,854	1,065,713			3.19	974	Bena	U.S. ESA / Bena
1	18-inch	1,057,404	1,075,163			3.36	976	Bena	U.S. ESA / Bena
1	18-inch	1,058,904	1,075,563			3.16	976	Bena	U.S. ESA / Bena
1	18-inch	1,061,713	1,069,213			1.42	976	Bena	U.S. ESA / Bena
1	18-inch	1,062,163	1,069,863			1.46	979	Bena	U.S. ESA / Bena
1	18-inch	1,062,813	1,072,363			1.81	977	Bena	U.S. ESA / Bena
1	18-inch	1,065,813	1,071,213			0.83	977	Bena	U.S. ESA / Bena
1	18-inch	1,079,881	1,097,380			3.31	980	Nushka Lake	U.S. ESA / Nushka Lake
1	18-inch	1,108,554	1,125,919			3.29	985	Mississippi River	U.S. ESA / Mississippi River



**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Diversion Stationing		Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
				Begin	End				
<b>Natural Gas Liquids</b>									
<b>Clearbrook to Superior 18" (716,232 - 1,712,883) cont.</b>									
1	18-inch	1,116,854	1,127,839			2.08	986	Mississippi River	U.S. ESA / Mississippi River
1	18-inch	1,120,019	1,139,752			3.74	988	Mississippi River	U.S. ESA / Mississippi River
1	18-inch	1,123,919	1,129,939			1.14	988	Mississippi River	U.S. ESA / Mississippi River
1	18-inch	1,130,752	1,147,463			3.16	989	Mississippi River	U.S. ESA / Mississippi River
1	18-inch	1,158,416	1,177,673			3.65	995	Deer River	U.S. ESA / Deer River
1	18-inch	1,158,416	1,179,073			3.91	995	Deer River	U.S. ESA / Deer River
1	18-inch	1,170,874	1,186,573			2.97	997	Deer River	U.S. ESA / Deer River
1	18-inch	1,172,124	1,183,573			2.17	997	Deer River	U.S. ESA / Deer River
1	18-inch	1,178,223	1,187,273			1.71	998	Deer River	U.S. ESA / Deer River
1	18-inch	1,210,400	1,214,266			0.73	1,003	Jay Gould	U.S. ESA / Jay Gould
1	18-inch	1,269,158	1,274,208			0.96	1,015	Blackberry Lake	U.S. ESA / Blackberry Lake
1	18-inch	1,314,822	1,324,902			1.91	1,023	Warba	U.S. ESA / Warba
1	18-inch	1,319,270	1,324,902			1.07	1,023	Warba	U.S. ESA / Warba



**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Begin	End	Stationing	Overturn		Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
							Stationing	Stationing				
<b>Crude Oil</b>												
<b>Gretna to Clearbrook (0 - 715,072)</b>												
2	26-inch	4,145	26,615						4.26	777	Pembina River	U.S. DW / Pembina River
2	26-inch	142,422	149,152						1.27	801	Red River	Enbridge CNW / Red River
2	26-inch	142,422	149,152						1.27	801	Red River	Enbridge ESA / Red River
2	26-inch	155,672	158,752						0.58	803	Red River	Enbridge CNW / Red River
2	26-inch	155,672	158,752						0.58	803	Red River	Enbridge ESA / Red River
2	26-inch	445,865	450,850						0.94	859	Thief River Falls	U.S. DW / Thief River Falls
2	26-inch	452,276	459,197						1.31	860	Thief River Falls	U.S. DW / Thief River Falls
2	26-inch	460,097	467,660						1.43	862	Thief River Falls	U.S. DW / Thief River Falls
2	26-inch	470,157	475,507						1.01	863	Thief River Falls	U.S. ESA / Thief River Falls
2	26-inch	470,807	473,807						0.57	863	Thief River Falls	U.S. ESA / Thief River Falls
2	26-inch	470,807	474,907						0.78	863	Thief River Falls	U.S. DW / Thief River Falls
2	26-inch	471,327	473,807						0.47	864	St. Hilaire	Enbridge DW / St. Hilaire
2	26-inch	475,657	481,087						1.03	876	Plummer	U.S. DW / Plummer
2	26-inch	535,540	542,206						1.26	904	Lost River	Enbridge DW / Lost River
2	26-inch	586,379	589,079						0.51	904	Oklee	Enbridge DW / Oklee
2	26-inch		598,014						1.26	886	Oklee	Enbridge DW / Oklee
<b>Clearbrook to Deer River (715,072 - 1,163,393 (855 - diversion))</b>												
2	26-inch	782,637	791,281						1.64	923	Buzzle Lake	U.S. ESA / Buzzle Lake
2	26-inch	793,524	804,430						2.07	925	Pinewood	U.S. ESA / Pinewood
2	26-inch	828,908	838,066						1.73	932	Wilton	U.S. ESA / Wilton
2	26-inch	864,696	877,340						2.39	939	Lake Irving	U.S. ESA / Lake Irving
2	26-inch	865,246	866,526						0.24	938	Bemidji	U.S. DW / Bemidji
2	26-inch	872,590	881,559						1.70	940	Lake Marquette	U.S. ESA / Lake Marquette
2	26-inch	880,614	886,199						1.06	941	Bemidji (South)	U.S. DW / Bemidji (South)
2	26-inch	914,232	919,514						1.00	947	Necktie River	U.S. DW / Necktie River
2	26-inch	917,632	922,390						0.90	948	Midge Lake	U.S. ESA / Midge Lake
2	26-inch	917,632	926,749						1.73	948	Midge Lake	U.S. ESA / Midge Lake
2	26-inch	976,614	987,254						2.02	960	Cass Lake	U.S. ESA / Cass Lake
2	26-inch	981,254	991,265						1.90	961	Cass Lake	U.S. ESA / Cass Lake
2	26-inch	1,003,365	1,006,965						0.68	964	Sucker Lakes	U.S. ESA / Sucker Lakes



**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNDW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Diversion Begin Stationing	Diversion End Stationing	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area	
										Stationing
<b>Crude Oil</b>										
<b>Clearbrook to Deer River (715,072 - 1,163,393 (855 - diversion)) cont.</b>										
2	26-inch	1,018,434	1,027,094			1.64	967	Portage Lake	U.S. ESA / Portage Lake	
2	26-inch	1,019,044	1,030,644			2.20	968	Portage Lake	U.S. ESA / Portage Lake	
2	26-inch	1,020,944	1,029,644			1.65	968	Portage Lake	U.S. ESA / Portage Lake	
2	26-inch	1,038,085	1,044,985			1.31	971	Portage Lake East	U.S. ESA / Portage Lake East	
2	26-inch	1,051,554	1,062,863			2.14	974	Bena	U.S. ESA / Bena	
2	26-inch	1,060,563	1,072,413			2.24	976	Bena	U.S. ESA / Bena	
2	26-inch	1,061,863	1,072,813			2.07	976	Bena	U.S. ESA / Bena	
2	26-inch	1,063,003	1,094,503			2.18	980	Nushka Lake	U.S. ESA / Nushka Lake	
2	26-inch	1,098,743	1,101,323			0.49	982	Nushka Lake	U.S. ESA / Nushka Lake	
2	26-inch	1,111,084	1,123,169			2.29	985	Mississippi River	U.S. ESA / Mississippi River	
2	26-inch	1,116,634	1,122,419			1.10	985	Mississippi River	Enbridge CNW / Mississippi River	
2	26-inch	1,124,569	1,137,552			2.46	988	Ball Club	U.S. ESA / Ball Club	
2	26-inch	1,124,639	1,140,718			3.05	988	Ball Club	U.S. ESA / Ball Club	
2	26-inch	1,133,702	1,141,063			1.39	989	Mississippi River	U.S. ESA / Mississippi River	
2	26-inch	1,137,218	1,140,718			0.66	989	Mississippi River	Enbridge CNW / Mississippi River	
2	26-inch	1,161,336		855		0.41	995	Deer River	U.S. ESA / Deer River	
2	26-inch	1,162,138		1,165		1.45	995	Deer River	U.S. ESA / Deer River	
<b>Deer River to Superior (1,163,393 (855 - diversion) - 1,712,887)</b>										
2	26-inch			855	1,165	1.20	995	Deer River	U.S. ESA / Deer River	
2	26-inch	1,174,037		855		2.02	995	Deer River	U.S. ESA / Deer River	
2	26-inch	1,181,537	1,183,237			0.32	998	White Oak Lake	U.S. ESA / White Oak Lake	
2	26-inch	1,181,537	1,183,237			0.32	998	White Oak Lake	U.S. ESA / White Oak Lake	
2	26-inch	1,203,442	1,209,395			1.13	1,002	Blackwater Lake	Enbridge DW / Blackwater Lake	
2	26-inch	1,207,014	1,210,091			0.58	1,003	Blackwater Creek	U.S. ESA / Blackwater Creek	
2	26-inch	1,225,900	1,244,449			3.51	1,008	Grand Rapids	Enbridge DW / Grand Rapids	
2	26-inch	1,246,763	1,250,263			0.66	1,010	Grand Rapids	U.S. DW / Grand Rapids	
2	26-inch	1,586,344	1,588,804			0.47	1,074	Twin Lakes	Enbridge DW / Twin Lakes	
2	26-inch	1,610,869	1,612,369			0.28	1,079	Wrenshall	Enbridge DW / Wrenshall	
2	26-inch	1,665,783	1,676,697			2.07	1,090	Oliver	U.S. ESA / Oliver	
2	26-inch	1,684,023	1,687,523			0.66	1,093	Pokegama	Enbridge DW / Pokegama	



**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Diversior		Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
				Begin	End				
<b>Crude Oil</b>									
<b>Deer River to Superior (1,163,393 (655 - diversion) - 1,712,887) cont.</b>									
2	26-inch	1,692,505	1,694,555			0.39	1,094	Superior	U.S. CNW/ Superior Harbor
2	26-inch	1,706,396	1,712,887			1.23	1,096	Superior	U.S. DW / Superior
2	26-inch	1,706,150	1,712,887			1.28	1,097	Superior	U.S. CNW/ Superior Harbor

**ENBRIDGE**

**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Begin Stationing	End Stationing	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area	Diversions	
										Begin	End
<b>Crude Oil</b>											
<b>Gretna to Clearbrook (0-715,082)</b>											
3	34-inch	4,126	26,615			4.26	777	Pembina River	U.S. DW / Pembina River		
3	34-inch	158,672	158,752			0.58	803	Red River	Enbridge CNW / Red River		
3	34-inch	155,672	158,752			0.58	803	Red River	Enbridge ESA / Red River		
3	34-inch	445,865	450,850			0.94	859	Thief River Falls	U.S. DW / Thief River Falls		
3	34-inch	452,276	459,197			1.31	860	Thief River Falls	U.S. DW / Thief River Falls		
3	34-inch	460,097	467,600			1.42	862	Thief River Falls	U.S. DW / Thief River Falls		
3	34-inch	469,607	476,007			1.21	863	Thief River Falls	U.S. ESA / Thief River Falls		
3	34-inch	470,857	473,957			0.59	863	Thief River Falls	U.S. ESA / Thief River Falls		
3	34-inch	470,857	475,057			0.80	863	Thief River Falls	U.S. ESA / Thief River Falls		
3	34-inch	471,007	474,807			0.72	863	Thief River Falls	U.S. DW / Thief River Falls		
3	34-inch	475,657	481,087			1.03	864	St. Hillaire	U.S. DW / St. Hillaire		
3	34-inch	535,540	542,206			1.26	876	Plummer	U.S. DW / Plummer		
3	34-inch	686,379	689,079			0.51	904	Lost River	U.S. DW / Lost River		
3	34-inch		149,152	59,422		1.29	802	Red River	Enbridge CNW / Red River		
3	34-inch		597,714	3,540		1.14	886	Oklee	Enbridge DW / Oklee		
3	34-inch		149,152	59,422		1.29	802	Red River	Enbridge ESA / Red River		
<b>Clearbrook to Superior (715,082-1,712,752)</b>											
3	34-inch	715,082	716,406			0.06	909	Clearbrook	U.S. DW / Clearbrook		
3	34-inch	781,852	791,427			1.81	923	Buzzle Lake	U.S. ESA / Buzzle Lake		
3	34-inch	864,446	872,240			1.48	938	Lake Irving	U.S. ESA / Lake Irving		
3	34-inch	864,821	867,081			0.43	938	Bemidji	U.S. DW / Bemidji		
3	34-inch	872,590	881,859			1.76	940	Lake Marquette	U.S. ESA / Lake Marquette		
3	34-inch	880,314	886,639			1.20	941	Bemidji (South)	U.S. DW / Bemidji (South)		
3	34-inch	914,182	919,954			1.09	947	Necktie River	U.S. DW / Necktie River		
3	34-inch	976,614	987,604			2.06	960	Cass Lake	U.S. ESA / Cass Lake		
3	34-inch	981,254	991,104			1.87	960	Cass Lake	U.S. ESA / Cass Lake		
3	34-inch			12,657	15,853	0.61	955	Cass Lake	Enbridge DW / Cass Lake		
3	34-inch	793,632	804,682			2.09	925	Pinewood	U.S. ESA / Pinewood		
3	34-inch	827,668	838,122			1.98	931	Wilton	U.S. ESA / Wilton		
3	34-inch	917,782	923,378			1.06	948	Midge Lake	U.S. ESA / Midge Lake		



**Clearbrook to Superior (715,082-1,712,752) cont.**

3	34-inch	917,782	927,057	1.76	948	Midge Lake	U.S. ESA / Midge Lake
3	34-inch	1,002,904	1,007,484	0.87	964	Sucker Lakes	U.S. ESA / Sucker Lakes
3	34-inch	1,017,964	1,027,194	1.75	967	Portage Lake	U.S. ESA / Portage Lake
3	34-inch	1,019,394	1,031,064	2.21	968	Portage Lake	U.S. ESA / Portage Lake
3	34-inch	1,020,644	1,030,094	1.79	968	Portage Lake	U.S. ESA / Portage Lake
3	34-inch	1,037,485	1,045,820	1.58	971	Portage Lake East	U.S. ESA / Portage Lake East
3	34-inch	1,051,343	1,062,913	2.19	974	Bena	U.S. ESA / Bena
3	34-inch	1,060,563	1,072,363	2.23	976	Bena	U.S. ESA / Bena
3	34-inch	1,061,613	1,072,913	2.14	976	Bena	U.S. ESA / Bena
3	34-inch	1,082,613	1,101,713	3.62	981	Nushka Lake	U.S. ESA / Nushka Lake
3	34-inch	1,110,754	1,123,419	2.40	985	Mississippi River	U.S. ESA / Mississippi River
3	34-inch	1,116,895	1,124,368	1.42	986	Mississippi River	Enbridge CNW / Mississippi River
3	34-inch	1,124,719	1,137,652	2.45	988	Ball Club Lake	U.S. ESA / Ball Club Lake
3	34-inch	1,133,452	1,141,338	1.49	989	Mississippi River	U.S. ESA / Mississippi River
3	34-inch	1,137,028	1,140,328	0.63	989	Mississippi River	Enbridge CNW / Mississippi River
3	34-inch	1,160,666		2.33	995	Deer River	U.S. ESA / Deer River
3	34-inch	1,161,622		1.53	995	Deer River	U.S. ESA / Deer River
3	34-inch	1,586,375	1,588,535	0.41	1,074	Twin Lakes	Enbridge DW / Twin Lakes
3	34-inch	1,610,844	1,612,144	0.25	1,079	Wrenshall	Enbridge DW / Wrenshall
3	34-inch	1,692,292	1,695,042	0.52	1,094	Superior	U.S. CNW / Superior Harbor
3	34-inch	1,707,930	1,712,752	0.91	1,098	Superior	U.S. CNW / Superior Harbor
3	34-inch		52,616	0.58	1,004	Bass Brook	U.S. DW / Bass Brook
3	34-inch		20,194	1.27	998	Stevens Lake	U.S. ESA / Stevens Lake
3	34-inch	1,225,900	1,244,749	3.57	1,008	Grand Rapids	U.S. DW / Grand Rapids
3	34-inch	1,246,349	1,250,562	0.80	1,010	Grand Rapids	U.S. DW / Grand Rapids
3	34-inch	1,316,045	1,316,940	0.17	1,023	McGuire Lake	U.S. ESA / McGuire Lake
3	34-inch	1,664,493	1,676,697	2.31	1,090	Oliver	U.S. ESA / Oliver
3	34-inch	1,663,373	1,688,873	1.04	1,093	Pokegama	U.S. DW / Pokegama
3	34-inch	1,694,812	1,697,202	0.45	1,095	Superior	U.S. DW / Superior
3	34-inch	1,707,930	1,712,752	0.91	1,098	Superior	U.S. DW / Superior



**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Diversion Begin Stationing	Diversion End Stationing	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
<b>Gretna to Donaldson 36" (0-168,408)</b>									
4	36-inch	4,145	26,615			4.26	777	Pembina River	U.S. DW / Pembina River
4	36-inch	142,737	149,081			1.20	801	Red River	Enbridge CNW / Red River
4	36-inch	142,737	149,081			1.20	801	Red River	Enbridge ESA / Red River
4	36-inch	155,601	158,681			0.58	803	Red River	Enbridge CNW / Red River
4	36-inch	155,601	158,681			0.58	803	Red River	Enbridge ESA / Red River
<b>Gretna to Donaldson 48" (168,041-212,348)</b>									
<b>Donaldson to Viking 48" (212,348 - 213,109)</b>									
<b>Donaldson to Viking 36" (213,461-322,423)</b>									
<b>Donaldson to Viking 48" (320,971-392,075)</b>									
<b>Viking to Plummer 48" (392,075-393,021)</b>									
<b>Viking to Plummer 36" (394,395-527,703)</b>									
4	36-inch	446,720	451,415			0.89	859	Thief River Falls	U.S. DW / Thief River Falls
4	36-inch	453,970	459,960			1.13	860	Thief River Falls	U.S. DW / Thief River Falls
4	36-inch	461,730	468,260			1.24	862	Thief River Falls	U.S. DW / Thief River Falls
4	36-inch	471,280	475,957			0.89	863	Thief River Falls	U.S. ESA / Thief River Falls
4	36-inch	472,477	474,957			0.47	863	Thief River Falls	U.S. DW / Thief River Falls
4	36-inch	472,830	474,780			0.37	863	Thief River Falls	U.S. ESA / Thief River Falls
<b>Viking to Plummer 36" (394,395-527,703) cont.</b>									
4	36-inch	476,782	482,488			1.08	865	St. Hillaire	U.S. DW / St. Hillaire
<b>Viking to Plummer 48" (526,404-545,165)</b>									
4	48-inch	535,540	542,206			1.26	876	Plummer	U.S. DW / Plummer
<b>Plummer to Clearbrook 48" (545,165 - 545,840)</b>									
<b>Plummer to Clearbrook 36" (547,141-647,345)</b>									
4	36-inch	594,325	599,475			0.98	887	Oklee	U.S. DW / Oklee



**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (C.N/W)**  
**UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Begin Stationing	End Stationing	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area	Diversion	
										Begin Stationing	End Stationing
<b>Crude Oil</b>											
<b>Plummer to Clearbrook 48" (646,406-716,261)</b>											
4	48-inch	666,639	688,619			0.34	904	Lost River	U.S. DW / Lost River		
4	48-inch	711,856	712,706			0.16	909	Clearbrook	Enbridge DW / Clearbrook		
<b>Clearbrook to Cass Lake 36" (716,411-878,827)</b>											
4	36-inch	782,710	791,996			1.76	923	Buzzle Lake	U.S. ESA / Buzzle Lake		
<b>Clearbrook to Cass Lake 36" (716,411-878,827) cont.</b>											
4	36-inch	794,600	805,248			2.02	925	Pinewood	U.S. ESA / Pinewood		
4	36-inch	829,674	839,365			1.84	932	Wilton	U.S. ESA / Wilton		
4	36-inch	865,247	878,927			2.59	939	Lake Irving	U.S. ESA / Lake Irving		
4	36-inch	865,547	868,197			0.50	938	Bemidji	U.S. DW / Bemidji		
4	36-inch	873,310	878,927			1.06	940	Lake Marquette	U.S. ESA / Lake Marquette		
<b>Clearbrook to Cass Lake 48" (877,981-946,695)</b>											
4	48-inch	877,981	882,229			0.80	940	Lake Marquette	U.S. ESA / Lake Marquette		
4	48-inch	880,559	886,739			1.17	941	Bemidji (South)	U.S. DW / Bemidji (South)		
4	48-inch	919,654	919,654	10,314		1.14	947	Necktie River	U.S. DW / Necktie River		
4	48-inch	917,082	922,578			1.04	948	Midge Lake	U.S. ESA / Midge Lake		
4	48-inch	917,082	928,052			2.08	948	Midge Lake	U.S. ESA / Midge Lake		
<b>Clearbrook to Cass Lake 36" (946,641-946,717)</b>											
<b>Cass Lake to Deer River 36" (946,717-1,059,670)</b>											
4	36-inch	951,005	954,358			0.64	954	Cass Lake	Enbridge DW / Cass Lake		
4	36-inch	973,739	985,336			2.20	959	Cass Lake	U.S. ESA / Cass Lake		
<b>Cass Lake to Deer River 36" (946,717-1,059,670) cont.</b>											
4	36-inch	978,989	989,639			2.02	960	Cass Lake	U.S. ESA / Cass Lake		
4	36-inch	1,000,388	1,005,253			0.92	964	Sucker Lakes	U.S. ESA / Sucker Lakes		
4	36-inch	1,015,913	1,025,213			1.76	967	Portage Lake	U.S. ESA / Portage Lake		
4	36-inch	1,016,813	1,029,060			2.32	967	Portage Lake	U.S. ESA / Portage Lake		
4	36-inch	1,018,263	1,027,813			1.81	967	Portage Lake	U.S. ESA / Portage Lake		
4	36-inch	1,035,426	1,043,677			1.56	971	Portage Lake East	U.S. ESA / Portage Lake East		
4	36-inch	1,048,687	1,059,570			2.06	973	Bena	U.S. ESA / Bena		

\*\*Please note that the 36-inch pipeline south of Bena used to be diversion stationing but no longer is



**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Begin Stationing	End Stationing	Diversion	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
<b>Crude Oil</b>										
<b>Cass Lake to Deer River 48" (127,102 (diversion)-1,173,198)</b>										
4	48-inch			127,102	133,177		1.15	974	Bena	U.S. ESA / Bena
4	48-inch			131,027	139,677		1.64	976	Bena	U.S. ESA / Bena
4	48-inch			133,177	140,864		1.46	976	Bena	U.S. ESA / Bena
4	48-inch			135,577	140,627		0.96	976	Bena	U.S. ESA / Bena
4	48-inch			152,551	171,650		3.62	980	Nushka Lake	U.S. ESA / Nushka Lake
4	48-inch			180,741	193,363		2.39	985	Mississippi River	U.S. ESA / Mississippi River
<b>Cass Lake to Deer River 48" (127,102 (diversion)-1,173,198) cont.</b>										
4	48-inch			189,775	195,374		1.06	986	Mississippi River	Enbridge CNW / Mississippi River
4	48-inch			194,414			2.41	987	Mississippi River	U.S. ESA / Mississippi River
4	48-inch			1,137,259	1,140,745		1.42	989	Mississippi River	U.S. ESA / Mississippi River
4	48-inch			1,137,448	1,140,948		0.66	989	Mississippi River	Enbridge CNW / Mississippi River
4	48-inch			1,159,148		5,334	2.66	995	Deer River	U.S. ESA / Deer River
4	48-inch			1,161,166		5,648	1.30	995	Deer River	U.S. ESA / Deer River
<b>Cass Lake to Deer River 36" (1,173,161-1,173,232)</b>										
<b>Deer River to Floodwood 36" (1,173,232-1,308,304)</b>										
4	36-inch			1,173,232	1,174,813		0.30	996	Deer River	U.S. ESA / Deer River
4	36-inch			1,184,735	1,190,218		1.04	999	Stevens Lake	U.S. ESA / Stevens Lake
4	36-inch			1,227,596	1,248,223		3.91	1,008	Grand Rapids	U.S. DW / Grand Rapids
<b>Deer River to Floodwood 48" (1,299,854-1,428,994 (47,009 - diversion))</b>										
4	48-inch			1,313,945	1,317,895		0.75	1,023	McGuire Lake	U.S. ESA / McGuire Lake
4	48-inch			1,321,100	1,325,000		0.74	1,024	McGuire Lake	U.S. ESA / McGuire Lake
<b>Deer River to Floodwood 36" (1,429,072-1,429,146)</b>										
<b>Floodwood to Wrenshall 36" (1,429,145-1,512,231)</b>										
<b>Floodwood to Wrenshall 48" (1,512,091-1,618,806)</b>										
4	48-inch			1,565,155	1,588,315		0.41	1,074	Twin Lakes	U.S. DW / Twin Lakes
4	48-inch			1,610,969	1,612,119		0.22	1,079	Wrenshall	Enbridge DW / Wrenshall
<b>Floodwood to Wrenshall 48" (1,512,091-1,618,806)</b>										
<b>Floodwood to Wrenshall 36" (1,618,840-1,617,041)</b>										



**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Diversions		Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
				Begin Stationing	End Stationing				
<b>Crude Oil</b>									
<b>Wrenshall to Superior 36" (1,617,041-1,712,760)</b>									
4	36-inch	1,667,008	1,677,717			1.88	1,091	Oliver	U.S. ESA / Oliver
4	36-inch	1,684,401	1,687,701			0.63	1,093	Pokegama	Enbridge DW / Pokegama
4	36-inch	1,692,395	1,695,245			0.54	1,095	Superior	U.S. CNW / Superior Harbor
4	36-inch	1,705,541	1,712,760			1.37	1,097	Superior	U.S. DW / Superior
4	36-inch	1,705,541	1,712,760			1.37	1,097	Superior	U.S. CNW / Superior Harbor



**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Begin Stationing	End Stationing	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
<b>Crude Oil</b>									
5	30-inch	0	6,407			1.21	1,099	Nemadji River	U.S. CNW / Superior Harbor
5	30-inch	0	41,516			7.86	1,102	Superior	U.S. DW / Superior
5	30-inch	16,661	19,541			0.55	1,102	Bear Creek	U.S. ESA / Bear Creek
5	30-inch	45,854	48,654			0.53	1,107	Amnicon River	U.S. ESA / Amnicon River
5	30-inch	64,700	66,450			0.33	1,111	Hanson Creek	U.S. ESA / Hanson Creek
5	30-inch	122,153	125,234			0.58	1,122	Bois Brule River	U.S. ESA / Bois Brule River
5	30-inch	150,480	154,480			0.76	1,127	Oulu	U.S. DW / Oulu
5	30-inch	254,764	256,834			0.39	1,147	Pine Creek Tributaries	U.S. ESA / Pine Creek Trib.
5	30-inch	260,264	263,064			0.53	1,148	Pine Creek Tributaries	U.S. ESA / Pine Creek Trib.
5	30-inch	267,488	269,488			0.38	1,149	North Fish Creek Tributary	U.S. DW / N. Fish Creek Trib.
5	30-inch	272,788	275,788			0.57	1,150	North Fish Creek	U.S. DW / N. Fish Creek
5	30-inch	272,788	275,788			0.57	1,150	North Fish Creek	U.S. ESA / N. Fish Creek
5	30-inch	273,858	276,858			0.57	1,150	Fish Creek	U.S. ESA / Fish Creek
5	30-inch	284,017	291,058			1.33	1,153	South Fish Creek	U.S. DW / South Fish Creek
5	30-inch	284,017	291,058			1.33	1,153	South Fish Creek	U.S. DW / South Fish Creek
5	30-inch	293,953	295,773			0.34	1,154	Ashland	U.S. ESA / Ashland
5	30-inch	297,100	339,943			8.04	1,158	Ashland	U.S. DW / Ashland
5	30-inch	306,317	310,549			0.80	1,157	Ashland Harbor	U.S. ESA / Ashland Harbor
5	30-inch	417,900	422,074			0.79	1,176	Saxon Harbor	U.S. CNW / Saxon Harbor
5	30-inch	480,427	482,827			0.45	1,189	Montreal River	U.S. DW / Montreal River
5	30-inch	489,451	491,461			0.38	1,191	Welch Creek	U.S. DW / Welch Creek
5	30-inch	501,287	508,867			1.40	1,194	Siemens Creek	U.S. DW / Siemens Creek
5	30-inch	521,858	541,805			3.78	1,199	Black River	Enbridge DW / Black River
5	30-inch	752,142	758,594			1.22	1,241	Watersmeet	U.S. DW / Watersmeet
5	30-inch	770,114	773,664			0.67	1,244	Watersmeet	U.S. DW / Watersmeet
5	30-inch	886,450	889,470			0.57	1,266	Beechwood	U.S. DW / Beechwood
5	30-inch	417,900	422,074			0.79	1,178	Saxon Harbor	U.S. ESA / Saxon Harbor
5	30-inch	661,500	666,070			0.87	1,224	Slate River	U.S. ESA / Slate River
5	30-inch	735,413	738,071			0.50	1,236	M.B. Ontonagon River	U.S. ESA / M.B. Ontonagon River
5	30-inch	752,142	758,594			1.22	1,241	Watersmeet	U.S. ESA / Watersmeet
5	30-inch	770,114	773,664			0.67	1,244	Duck Creek	U.S. ESA / Duck Creek
5	30-inch	848,363	860,133			2.23	1,260	Golden Lake	U.S. ESA / Golden Lake
5	30-inch	887,427	907,991			2.00	1,269	South Branch Iron River	U.S. DW / South Branch Iron River
5	30-inch	911,189	919,218			1.52	1,271	Mineral Hills	U.S. DW / Mineral Hills



**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Begin Stationing	End Stationing	Diversion	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
<b>Crude Oil</b>										
<b>Iron River to North Straits (919,037 - 1,993,306)</b>										
5	30-inch	1,012,800	1,015,858				0.58	1,290	Paint River	U.S. ESA / Paint River
5	30-inch	1,013,190	1,016,340				0.60	1,290	Little Mud Lake	U.S. ESA / Little Mud Lake
5	30-inch	1,027,963	1,030,450				0.47	1,293	Michigan River	U.S. ESA / Michigan River
5	30-inch	1,027,963	1,030,450				0.47	1,293	Michigan River	U.S. ESA / Michigan River
5	30-inch	1,032,489	1,039,934				1.41	1,294	Michigan River	U.S. ESA / Michigan River
5	30-inch	1,032,489	1,039,934				1.41	1,294	Michigan River	U.S. ESA / Michigan River
5	30-inch	1,046,855	1,053,411				1.24	1,297	Parks Creek	U.S. ESA / Parks Creek
5	30-inch	1,046,855	1,053,411				1.24	1,297	Parks Creek	U.S. ESA / Parks Creek
5	30-inch	1,105,748	1,109,148				0.64	1,308	Sturgeon River	U.S. ESA / Sturgeon River
5	30-inch	1,111,348	1,116,279				0.93	1,309	Sturgeon River	U.S. ESA / Sturgeon River
5	30-inch	1,121,129	1,126,321				0.98	1,311	Genes Pond Tributary	U.S. ESA / Genes Pond Tributary
5	30-inch	1,133,501	1,136,251				0.52	1,313	Pickereel Lake	U.S. ESA / Pickereel Lake
5	30-inch	1,136,684	1,147,440				2.04	1,314	Pickereel Lake	U.S. ESA / Pickereel Lake
5	30-inch	1,261,790	1,263,110				0.25	1,337	Escanaba River Tributary	U.S. ESA / Escanaba River Trib.
5	30-inch	1,276,402	1,288,640				2.32	1,341	Escanaba River	U.S. ESA / Escanaba River
5	30-inch	1,283,092	1,288,035				0.94	1,342	Escanaba River	U.S. ESA / Escanaba River
5	30-inch	1,283,092	1,288,035				0.94	1,342	Escanaba River	U.S. ESA / Escanaba River
5	30-inch	1,373,117	1,374,340				0.23	1,358	Rapid River	U.S. CNW / Lake Michigan
5	30-inch	1,373,117	1,374,340				0.23	1,358	Rapid River	U.S. CNW / Lake Michigan
5	30-inch	1,552,804	1,566,788				2.65	1,394	Manistique	U.S. DW / Rapid River
5	30-inch	1,568,558	1,572,244				0.70	1,396	Manistique	Enbridge DW / Manistique
5	30-inch	1,654,066	1,660,111				1.14	1,412	Blaney Park	U.S. ESA / Manistique
5	30-inch	1,749,210	1,752,951				0.71	1,430	Engadine	U.S. DW / Blaney Park
5	30-inch	1,752,801	1,756,201				0.64	1,430	O'Neil Creek	U.S. DW / Engadine
5	30-inch	1,752,801	1,756,201				0.64	1,430	O'Neil Creek	U.S. DW / Engadine
5	30-inch	1,771,514	1,775,654				0.64	1,430	O'Neil Creek	U.S. ESA / O'Neil Creek
5	30-inch	1,771,514	1,775,654				0.78	1,434	Lower Millecoquins R.	U.S. ESA / O'Neil Creek
5	30-inch	1,771,514	1,775,654				0.78	1,434	Lower Millecoquins R.	U.S. ESA / Lower Millecoquins River
5	30-inch	1,780,721	1,790,891				1.93	1,436	West Mile Creek	U.S. ESA / Lower Millecoquins River
5	30-inch	1,785,611	1,791,070				1.03	1,437	East Mile Creek	U.S. ESA / West Mile Creek
5	30-inch	1,785,611	1,791,070				1.03	1,437	East Mile Creek	U.S. ESA / East Mile Creek
5	30-inch	1,799,948	1,803,150				0.61	1,439	Peters Creek	U.S. ESA / East Mile Creek
5	30-inch	1,799,948	1,803,150				0.61	1,439	Peters Creek	U.S. ESA / Peters Creek



**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNUW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Direction	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
<b>Crude Oil</b>								
<b>Iron River to North Straits (919,037 - 1,993,306) cont.</b>								
5	30-inch	1,789,947	1,803,150		0.61	1,439	Peters Creek	U.S. ESA / Paters Creek
5	30-inch	1,804,400	1,807,000		0.49	1,440	Black River Tributary	U.S. ESA / Black River Tributary
5	30-inch	1,804,400	1,907,000		0.49	1,440	Black River Tributary	U.S. ESA / Black River Tributary
5	30-inch	1,810,100	1,812,930		0.54	1,441	Borgstrom Creek	U.S. ESA / Borgstrom Creek
5	30-inch	1,810,100	1,812,930		0.54	1,441	Borgstrom Creek	U.S. ESA / Borgstrom Creek
5	30-inch	1,815,230	1,817,680		0.46	1,442	East Branch Black Creek	U.S. ESA / East Branch Black Creek
5	30-inch	1,815,230	1,817,680		0.46	1,442	East Branch Black Creek	U.S. ESA / East Branch Black Creek
5	30-inch	1,823,680	1,826,530		0.54	1,444	Hog Island Creek	U.S. ESA / Hog Island Creek
5	30-inch	1,828,586	1,830,560		0.37	1,445	Davenport Creek	U.S. ESA / Davenport Creek
5	30-inch	1,870,964	1,872,284		0.25	1,453	Cut River	U.S. ESA / Cut River
5	30-inch	1,895,289	1,899,558		0.83	1,457	Brevort River	U.S. ESA / Brevort River
5	30-inch	1,915,001	1,919,327		0.82	1,461	Brevort River	U.S. ESA / Brevort River
5	30-inch	1,915,001	1,936,157		4.01	1,463	Brevort River	U.S. ESA / Brevort River
5	30-inch	1,916,827	1,918,077		0.24	1,461	Brevort River	U.S. ESA / Brevort River
5	30-inch	1,926,252	1,936,157		1.88	1,464	Brevort River	U.S. ESA / Brevort River
5	30-inch	1,926,252	1,936,157		1.88	1,464	Brevort River	U.S. ESA / Brevort River
5	30-inch	1,957,912	1,966,312		1.59	1,470	Kitchens Creek	U.S. ESA / Kitchens Creek
5	30-inch	1,964,134	1,967,266		0.59	1,474	St. Ignace	U.S. DW / St. Ignace
5	30-inch	1,991,316	1,993,306		0.38	1,475	Mackinac Straits	U.S. CMW / Mackinac Straits
5	30-inch	1,936,625	1,953,246		2.77	1,467	Point Aux Chenes	U.S. ESA / Point Aux Chenes
5	30-inch	1,942,509	1,949,051		1.24	1,467	Point Aux Chenes	U.S. ESA / Point Aux Chenes
5	30-inch	1,944,589	1,953,246		1.64	1,467	Point Aux Chenes River	U.S. ESA / Point Aux Chenes River
5	30-inch	1,944,589	1,953,246		1.64	1,467	Point Aux Chenes River	U.S. ESA / Point Aux Chenes River
5	30-inch	1,953,246	1,954,206		0.18	1,468	Point Aux Chenes River	U.S. ESA / Point Aux Chenes River
5	30-inch	1,957,912	1,966,312		1.59	1,470	Kitchens Creek	U.S. ESA / Kitchens Creek
5	30-inch	1,957,912	1,966,312		1.59	1,470	Kitchens Creek	U.S. ESA / Kitchens Creek
5	30-inch	1,990,444	1,993,306		0.54	1,475	Point La Barbe	U.S. ESA / Point La Barbe
5	30-inch	1,991,244	1,993,306		0.39	1,475	Point La Barbe	U.S. ESA / Point La Barbe
5	30-inch	1,991,844	1,993,306		0.28	1,475	Point La Barbe	U.S. ESA / Point La Barbe
<b>North Straits to Mackinac - Straits of Mackinac East (1,993,308 - 2,016,016)</b>								
5	20-inch	1,993,306	2,014,331		3.98	1,478	Mackinac Straits	U.S. CMW / Mackinac Straits
5	20-inch	1,993,306	1,994,041		0.14	1,476	Point La Barbe	U.S. ESA / Point La Barbe



**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
 UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Diversion Begin Stationing	Diversion End Stationing	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
<b>Crude Oil</b>									
5	20-inch	1,993,306	1,994,466			0.22	1,476	Point La Barbe	U.S. ESA / Point La Barbe
5	20-inch	1,993,306	1,994,766			0.28	1,476	Point La Barbe	U.S. ESA / Point La Barbe
5	20-inch	1,996,006	2,010,431			2.73	1,477	Straits of Mackinac	Enbridge ESA / Straits of Mackinac
5	20-inch	2,012,731	2,015,016			0.43	1,480	Mackinaw City	U.S. ESA / Mackinaw City
5	20-inch	2,014,614	2,015,016			0.08	1,480	Mackinaw City	U.S. ESA / Mackinaw City
5	20-inch	1,993,306	2,014,331			3.98	1,478	Mackinac Straits	U.S. CNW / Mackinac Straits
5	20-inch	1,993,306	1,994,041			0.14	1,476	Point La Barbe	U.S. ESA / Point La Barbe
5	20-inch	1,993,306	1,994,466			0.22	1,476	Point La Barbe	U.S. ESA / Point La Barbe
5	20-inch	1,993,306	1,994,766			0.28	1,476	Point La Barbe	U.S. ESA / Point La Barbe
5	20-inch	1,996,006	2,010,431			2.73	1,477	Straits of Mackinac	Enbridge ESA / Straits of Mackinac
5	20-inch	2,012,731	2,015,016			0.43	1,480	Mackinaw City	U.S. ESA / Mackinaw City
5	20-inch	2,014,614	2,015,016			0.08	1,480	Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,015,016	2,018,814			0.72	1,480	Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,015,016	2,024,454			1.79	1,481	Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,015,270	2,028,250			2.46	1,481	Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,017,914	2,025,025			1.35	1,481	Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,019,926	2,036,149			3.07	1,482	Mackinaw City	U.S. DW / Mackinaw City
5	30-inch	2,043,697	2,048,226			0.86	1,486	Carp Lake	U.S. ESA / Carp Lake
5	30-inch	2,074,436	2,101,529			5.13	1,494	Douglas Lake	U.S. ESA / Douglas Lake
5	30-inch	2,110,560	2,114,942			1.02	1,498	Mullet Creek	U.S. ESA / Mullet Creek
5	30-inch	2,119,371	2,117,637			1.34	1,498	Burt Lake	U.S. ESA / Burt Lake
5	30-inch	2,149,187	2,129,456			1.91	1,500	Burt Creek	U.S. ESA / Burt Creek
5	30-inch	2,149,187	2,158,607			1.78	1,506	Indian River	U.S. ESA / Indian River
5	30-inch	2,149,187	2,158,607			1.78	1,506	Indian River	U.S. ESA / Indian River
5	30-inch	2,156,987	2,161,130			0.78	1,507	Indian River	U.S. ESA / Indian River
5	30-inch	2,156,987	2,161,130			0.78	1,507	Indian River	U.S. ESA / Indian River
5	30-inch	2,161,130	2,168,753			1.44	1,508	Indian River	U.S. ESA / Indian River
5	30-inch	2,161,130	2,168,753			1.44	1,508	Indian River	U.S. ESA / Indian River
5	30-inch	2,162,130	2,164,541			0.46	1,508	Indian River	U.S. ESA / Indian River
5	30-inch	2,162,130	2,164,541			0.46	1,508	Indian River	U.S. ESA / Indian River
5	30-inch	2,162,130	2,164,541			0.46	1,508	Indian River	U.S. ESA / Indian River
5	30-inch	2,162,130	2,164,541			0.46	1,508	Indian River	U.S. ESA / Indian River
5	30-inch	2,168,567	2,171,067			0.47	1,509	Little Sturgeon River	U.S. ESA / Little Sturgeon River



**SUPERIOR REGION RESPONSE ZONE - Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
 UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Stationing	Begin	End	Stationing	Stationing	Stationing	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area	
												Overseer
<b>Crude Oil</b>												
<b>North Straits to Mackinaw - Straits of Mackinac West (1,993,308 - 2,010,016) cont.</b>												
5	30-inch	2,168,567	2,171,067					0.47	1,509	Little Sturgeon River	U.S. ESA / Little Sturgeon River	
5	30-inch	2,168,567	2,171,067					0.47	1,509	Little Sturgeon River	U.S. ESA / Little Sturgeon River	
5	30-inch	2,173,990	2,186,665					2.40	1,511	Little Sturgeon River	U.S. ESA / Little Sturgeon River	
5	30-inch	2,173,990	2,186,665					2.40	1,511	Little Sturgeon River	U.S. ESA / Little Sturgeon River	
5	30-inch	2,173,990	2,186,665					2.40	1,511	Little Sturgeon River	U.S. ESA / Little Sturgeon River	
5	30-inch	2,173,990	2,186,665					2.40	1,511	Little Sturgeon River	U.S. ESA / Little Sturgeon River	
5	30-inch	2,355,270	2,364,226					1.70	1,545	Caulkins Lake	U.S. ESA / Caulkins Lake	
5	30-inch	2,363,801	2,385,211					0.27	1,550	Middle Branch Big Creek	U.S. ESA / Au Sable	
5	30-inch	2,403,452	2,414,694					2.13	1,554	Au Sable	U.S. ESA / Au Sable	
5	30-inch	2,415,195	2,421,136					1.13	1,556	East Branch Big Creek	U.S. ESA / E.B. Big Creek	
5	30-inch	2,436,969	2,446,089					1.35	1,561	Au Sable River	U.S. ESA / Au Sable River	
5	30-inch	2,447,809	2,451,028					0.59	1,562	Au Sable River	U.S. ESA / Au Sable River	
5	30-inch	2,455,445	2,458,302					0.54	1,563	Red Creek	U.S. ESA / Red Creek	
5	30-inch	2,468,162	2,470,052					0.36	1,566	Luzerne	U.S. ESA / Luzerne	
5	30-inch	2,578,283	2,595,183					3.20	1,588	Rifle Lake	U.S. ESA / Rifle Lake	
5	30-inch	2,578,377	2,594,307					1.12	1,587	Rifle Lake	U.S. DW / Rifle Lake	
5	30-inch	2,580,983	2,582,333					0.26	1,587	Rifle Lake	U.S. ESA / Rifle Lake	
5	30-inch	2,625,748	2,627,349					0.30	1,596	Gustafson Airport	U.S. DW / Gustafson Airport	
<b>Bay City to Sarnia (2,843,835 - 3,364,529)</b>												
5	30-inch	2,662,551	2,694,953					2.35	1,645	Bay City	U.S. ESA / Bay City	
5	30-inch	2,866,617	2,898,938					2.33	1,646	Bay City	U.S. ESA / Bay City	
5	30-inch	2,866,987	2,890,487					0.66	1,645	Saginaw River	Enbridge CNW / Saginaw River	
5	30-inch	2,978,598	3,000,756					4.16	1,664	Tinglan	U.S. ESA / Tinglan	
5	30-inch	2,996,109	3,013,609					3.31	1,667	Vassar	Enbridge DW / Vassar	
5	30-inch	3,002,538	3,014,974					2.36	1,668	Vassar	U.S. ESA / Vassar	
5	30-inch	3,024,586	3,034,636					1.90	1,672	Goodings Creek	U.S. ESA / Goodings Creek	
5	30-inch	3,026,236	3,029,936					0.70	1,672	Vassar	Enbridge DW / Vassar	
5	30-inch	3,119,516	3,131,492					2.27	1,690	North Branch	Enbridge DW / North Branch	
5	30-inch	3,133,953	3,136,016					0.38	1,692	North Branch	Enbridge DW / North Branch	
5	30-inch	3,262,310	3,267,662					1.01	1,716	Quaker Bush Drain	U.S. ESA / Quaker Bush Drain	
5	30-inch	3,268,262	3,274,478					1.18	1,716	Pine River	U.S. ESA / Pine River	
5	30-inch	3,296,537	3,336,849					7.63	1,726	Port Huron	U.S. ESA / Port Huron	



**SUPERIOR REGION RESPONSE ZONE - Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Diversion Begin Stationing	Diversion End Stationing	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
<b>Crude Oil</b>									
<b>Bay City to Sarnia (2,843,835 - 3,364,529) cont.</b>									
5	30-inch	3,312,487	3,331,824			3.66	1,727	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,312,497	3,331,824			3.66	1,727	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,312,497	3,331,824			3.66	1,727	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,315,724	3,336,849			4.00	1,728	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,320,218	3,336,849			3.15	1,729	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,325,808	3,336,849			2.09	1,729	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,340,663	3,344,688			0.76	1,731	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,340,663	3,344,688			0.76	1,731	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,340,663	3,344,688			0.76	1,731	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,345,488	3,354,120			1.63	1,733	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,345,488	3,356,061			2.00	1,733	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,345,488	3,356,061			2.00	1,733	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,350,771	3,352,091			0.25	1,733	Cuttle Creek	U.S. ESA / Port Huron
5	30-inch	3,354,971	3,364,529			1.81	1,734	St. Clair River	Enbridge DW / Cuttle Creek Enbridge DW / St. Clair River
5	30-inch	3,357,886	3,358,476			0.11	1,734	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,357,886	3,362,189			0.81	1,734	Port Huron	U.S. ESA / Port Huron
5	30-inch	3,362,550	3,364,529			0.37	1,735	St. Clair River	Enbridge CNW / St. Clair River
<b>Mackinaw to Bay City (2,355,270 - 2,843,835)</b>									
5	30-inch	2,355,270	2,364,226			1.70	1,545	Caulkins Lake	U.S. ESA / Caulkins Lake
5	30-inch	2,383,801	2,385,211			0.27	1,550	Middle Branch Big Creek	U.S. ESA / Au Sable



**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Begin Stationing	End Stationing	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area	Diversions	
										Begin Stationing	End Stationing
<b>Natural Gas Liquids</b>											
<b>Superior to Iron River (0 - 919,037)</b>											
5	30-inch	0	13,511			2.56	1,099	Nemadji River	Enbridge CNW / Nemadji River		
5	30-inch	10,913	11,913			0.19	1,100	Superior	U.S. ESA / Superior		
5	30-inch	262,094	280,237			3.44	1,149	Fish Creek	U.S. ESA / Fish Creek		
5	30-inch	263,064	281,487			3.49	1,150	Fish Creek	U.S. ESA / Fish Creek		
5	30-inch	265,858	284,017			3.44	1,150	Fish Creek	U.S. ESA / Fish Creek		
5	30-inch	635,890	650,670			2.80	1,220	Sundance Lake	U.S. ESA / Sundance Lake		
5	30-inch	709,389	723,239			2.62	1,234	Beaton's Lake	U.S. ESA / Beaton's Lake		
5	30-inch	743,581	756,186			2.39	1,240	Sucker Lake	U.S. ESA / Sucker Lake		
5	30-inch	844,200	864,020			3.75	1,260	Golden Lake	U.S. ESA / Golden Lake		
<b>Iron River to North Straits (919,037 - 1,993,306)</b>											
5	30-inch	928,653	932,503			0.73	1,274	Mineral Hills	U.S. ESA / Mineral Hills		
5	30-inch	1,126,321	1,141,785			2.93	1,313	Pickereel Lake	U.S. ESA / Pickereel Lake		
5	30-inch	1,130,703	1,153,580			4.33	1,314	Pickereel Lake	U.S. ESA / Pickereel Lake		
5	30-inch	1,269,200	1,295,595			5.00	1,341	Escanaba River	U.S. ESA / Escanaba River		
5	30-inch	1,443,600	1,448,350			0.90	1,372	Sturgeon River	U.S. ESA / Sturgeon River		
5	30-inch	1,515,000	1,526,750			2.23	1,386	Hiawatha National Forest	U.S. ESA / Hiawatha NF		
5	30-inch	1,540,823	1,543,822			1.33	1,393	Southtown	U.S. ESA / Southtown		
5	30-inch	1,553,398	1,560,422			2.53	1,396	Manistique River	U.S. CNW / Manistique River		
5	30-inch	1,564,091	1,577,431			1.21	1,433	Manistique	U.S. ESA / Manistique		
5	30-inch	1,765,336	1,771,734			2.81	1,434	Millecoquins	U.S. ESA / Millecoquins		
5	30-inch	1,766,506	1,781,361			3.48	1,436	Millecoquins	U.S. ESA / Millecoquins		
5	30-inch	1,774,414	1,792,762			2.87	1,437	Millecoquins	U.S. ESA / Millecoquins		
5	30-inch	1,775,104	1,790,270			1.40	1,437	Millecoquins	U.S. ESA / Millecoquins		
5	30-inch	1,787,490	1,794,872			0.87	1,438	Millecoquins	U.S. ESA / Millecoquins		
5	30-inch	1,790,870	1,795,442			3.49	1,441	Millecoquins	U.S. ESA / Millecoquins		
5	30-inch	1,799,688	1,818,096			1.78	1,450	Sucker Creek	U.S. ESA / Sucker Creek		
5	30-inch	1,850,770	1,860,194			2.12	1,452	Epoufette	U.S. ESA / Epoufette		
5	30-inch	1,862,054	1,873,255			0.66	1,454	Cut River	U.S. ESA / Cut River		
5	30-inch	1,879,674	1,883,174			1.57	1,456	Manitou	U.S. ESA / Manitou		
5	30-inch	1,886,121	1,894,427			2.75	1,457	Little Brevort	U.S. ESA / Little Brevort		
5	30-inch	1,889,541	1,904,082			2.84	1,461	Little Brevort	U.S. ESA / Little Brevort		
5	30-inch	1,909,657	1,924,652					Brevort	U.S. ESA / Brevort		



**SUPERIOR REGION RESPONSE ZONE-Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Stationing	Begin Stationing	End Stationing	Begin Stationing	End Stationing	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
<b>Natural Gas Liquids</b>										
<b>Iron River to North Straits (819,037 - 1,993,306) cont.</b>										
5	30-inch	1,910,301	1,941,609				5.93	1,463	Brevort	U.S. ESA / Brevort
5	30-inch	1,910,721	1,937,177				5.01	1,462	Brevort	U.S. ESA / Brevort
5	30-inch	1,911,707	1,918,477				1.28	1,461	Brevort	U.S. ESA / Brevort
5	30-inch	1,932,134	1,941,859				1.84	1,465	Brevort	U.S. ESA / Brevort
5	30-inch	1,933,564	1,958,180				4.66	1,467	Pointe Au Chenes	U.S. ESA / Pointe Au Chenes
5	30-inch	1,936,565	1,955,366				3.56	1,467	Pointe Au Chenes	U.S. ESA / Pointe Au Chenes
5	30-inch	1,940,459	1,941,009				0.10	1,466	Pointe Au Chenes	U.S. ESA / Pointe Au Chenes
5	30-inch	1,945,789	1,953,106				1.39	1,467	Pointe Au Chenes	U.S. ESA / Pointe Au Chenes
5	30-inch	1,951,786	1,954,854				2.48	1,469	Pointe Au Chenes	U.S. ESA / Pointe Au Chenes
5	30-inch	1,953,416	1,967,559				2.68	1,469	Kitchens Creek	U.S. ESA / Kitchens Creek
5	30-inch	1,956,551	1,966,139				1.82	1,470	Kitchens Creek	U.S. ESA / Kitchens Creek
5	30-inch	1,965,739	1,993,306				5.22	1,473	Mackinac	U.S. ESA / Mackinac
5	30-inch	1,970,509	1,980,829				1.95	1,472	Mackinac	U.S. ESA / Mackinac
5	30-inch	1,972,029	1,982,164				1.92	1,473	Mackinac	U.S. ESA / Mackinac
5	30-inch	1,982,314	1,987,982				1.07	1,474	Mackinac	U.S. ESA / Mackinac
5	30-inch	1,985,366	1,987,266				0.36	1,474	St. Ignace	U.S. EPA / St. Ignace
5	30-inch	1,985,893	1,993,306				1.40	1,475	Mackinac	U.S. ESA / Mackinac
5	30-inch	1,986,693	1,993,306				1.25	1,475	Mackinac	U.S. ESA / Mackinac
5	30-inch	1,987,266	1,993,306				1.14	1,475	Mackinac Straits	U.S. CNW / Mackinac Straits
5	30-inch	1,987,303	1,993,306				1.14	1,475	Mackinac	U.S. ESA / Mackinac
<b>North Straits to Mackinaw - Straits of Mackinac East (1,993,306 - 2,015,016)</b>										
5	20-inch	1,993,306	1,997,016				0.70	1,476	Mackinac	U.S. ESA / Mackinac
5	20-inch	1,993,306	1,998,536				0.99	1,476	Mackinac	U.S. ESA / Mackinac
5	20-inch	1,993,306	1,998,886				1.06	1,476	Mackinac	U.S. ESA / Mackinac
5	20-inch	1,993,306	1,999,086				1.09	1,476	Mackinac	U.S. ESA / Mackinac
5	20-inch	1,993,306	2,015,016				4.11	1,478	Mackinac Straits	U.S. CNW / Mackinac Straits
5	20-inch	1,997,566	2,011,431				2.63	1,478	Straits of Mackinac	Enbridge ESA / Straits of Mackinac
5	20-inch	2,010,264	2,015,016				0.90	1,479	Mackinaw City	U.S. ESA / Mackinaw City
5	20-inch	2,012,064	2,015,016				0.56	1,479	Mackinaw City	U.S. ESA / Mackinaw City
5	20-inch	2,012,931	2,015,016				0.39	1,480	Mackinaw City	U.S. ESA / Mackinaw City
5	20-inch	2,015,009	2,015,016				0.00	1,480	Mackinaw City	U.S. ESA / Mackinaw City



**SUPERIOR REGION RESPONSE ZONE-Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Stationing	Begin	End	Stationing	End	Stationing	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
<b>Natural Gas Liquids</b>											
<b>North Straits to Mackinaw - Straits of Mackinac West (1,993,306 - 2,015,016)</b>											
5	20-inch	1,993,306	1,997,016				0.70	1.476		Mackinac	U.S. ESA / Mackinac
5	20-inch	1,993,306	1,998,536				0.99	1.476		Mackinac	U.S. ESA / Mackinac
5	20-inch	1,993,306	1,998,886				1.06	1.476		Mackinac	U.S. ESA / Mackinac
5	20-inch	1,993,306	1,999,086				1.09	1.476		Mackinac	U.S. ESA / Mackinac
5	20-inch	1,993,306	2,015,016				4.11	1.478		Mackinac Straits	U.S. CNW / Mackinac Straits
5	20-inch	1,997,566	2,011,431				2.63	1.478		Straits of Mackinac	Enbridge ESA / Straits of Mackinac
5	20-inch	2,010,284	2,015,016				0.90	1.479		Mackinaw City	U.S. ESA / Mackinaw City
5	20-inch	2,012,064	2,015,016				0.56	1.479		Mackinaw City	U.S. ESA / Mackinaw City
5	20-inch	2,012,931	2,015,016				0.39	1.480		Mackinaw City	U.S. ESA / Mackinaw City
5	20-inch	2,015,009	2,015,016				0.00	1.480		Mackinaw City	U.S. ESA / Mackinaw City
<b>Mackinaw to Bay City (2,015,016 - 2,843,835)</b>											
5	30-inch	2,015,016	2,020,184				0.98	1.480		Mackinac Straits	Enbridge CNW / Mackinac Straits
5	30-inch	2,015,016	2,025,224				1.93	1.481		Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,015,016	2,031,324				3.09	1.481		Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,015,016	2,033,502				3.50	1.481		Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,015,016	2,051,534				5.94	1.483		Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,017,014	2,025,374				1.58	1.481		Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,017,714	2,030,724				2.46	1.481		Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,019,044	2,024,084				0.95	1.481		Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,019,244	2,028,834				1.82	1.481		Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,029,564	2,031,989				0.46	1.483		Mackinaw City	U.S. ESA / Mackinaw City
5	30-inch	2,067,938	2,133,766				12.47	1.496		Douglas Lake	U.S. ESA / Douglas Lake
5	30-inch	2,087,274	2,118,372				5.89	1.496		Douglas Lake	U.S. ESA / Douglas Lake
5	30-inch	2,106,148	2,124,291				3.44	1.499		Douglas Lake	U.S. ESA / Douglas Lake
5	30-inch	2,108,217	2,114,647				1.22	1.498		Douglas Lake	U.S. ESA / Douglas Lake
5	30-inch	2,108,487	2,119,512				2.10	1.498		Douglas Lake	U.S. ESA / Douglas Lake
5	30-inch	2,113,432	2,151,702				7.25	1.502		Douglas Lake	U.S. ESA / Douglas Lake
5	30-inch	2,143,085	2,165,541				4.25	1.506		Indian River	U.S. ESA / Indian River
5	30-inch	2,150,987	2,170,067				3.61	1.507		Indian River	U.S. ESA / Indian River
5	30-inch	2,154,340	2,169,769				2.92	1.508		Indian River	Enbridge CNW / Indian River
5	30-inch	2,349,556	2,370,215				3.91	1.545		Pigeon River	U.S. ESA / Pigeon River
5	30-inch	2,352,056	2,367,473				2.92	1.545		Pigeon River	U.S. ESA / Pigeon River

**ENBRIDGE**

**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Diversions		Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
				Begin Stationing	End Stationing				
<b>Crude Oil</b>									
6A	34-inch	0	13,124			2.49	1	Superior	U.S. HPA / Superior
6A	34-inch	0	13,124			2.49	1	Superior	U.S. OPA / Superior
6A	34-inch	0	13,124			2.49	1	Superior	U.S. DW / Superior
6A	34-inch	2,800	13,124			1.96	2	Nemadji River	Enbridge CNW / Nemadji River
6A	34-inch	14,612	19,960			1.01	3	Bluff Creek	U.S. OPA / Bluff Creek
6A	34-inch	14,612	19,960			1.01	3	Superior	U.S. DW / Superior
6A	34-inch	137,360	141,641			0.81	26	Solon Springs	U.S. OPA / Solon Springs
6A	34-inch	140,682	143,856			0.60	27	Solon Springs	U.S. DW / Solon Springs
6A	34-inch	143,106	144,856			0.33	27	Solon Springs	Enbridge OPA / Solon Springs
6A	34-inch	145,410	153,406			1.33	28	Leo Creek	U.S. OPA / Solon Springs
6A	34-inch	145,410	153,406			1.33	28	St. Croix Lake	U.S. ESA / St. Croix Lake
6A	34-inch	174,497	178,256			0.71	33	St. Croix River	U.S. ESA / St. Croix River
6A	34-inch	179,894	184,111			0.80	34	Eau Claire River	U.S. ESA / Eau Claire River
6A	34-inch	202,319	204,927			0.49	39	Red Lake	U.S. ESA / Red Lake
6A	34-inch	212,233	218,365			1.16	41	Totogatic River	U.S. ESA / Totogatic River
6A	34-inch	289,154	292,802			0.69	55	Namekagon River	U.S. ESA / Namekagon River
6A	34-inch	353,462	356,277			0.53	67	Ham Lake	U.S. ESA / Ham Lake
6A	34-inch	363,881	389,594			4.87	71	Lac Courte Oreilles t.R.	U.S. OPA / Lac Courte Oreilles t.R.
6A	34-inch	436,188	437,938			0.33	83	Exeland	U.S. DW / Exeland
6A	34-inch	436,188	437,938			0.33	83	Exeland	U.S. OPA / Exeland
6A	34-inch	463,964	471,291			1.39	89	Chippewa River	U.S. ESA / Chippewa River
6A	34-inch	463,964	471,291			1.39	89	Chippewa River	U.S. ESA / Chippewa River
6A	34-inch	463,964	471,291			1.39	89	Chippewa River	U.S. ESA / Chippewa River
6A	34-inch	476,862	502,422			4.84	93	Thomapple	U.S. ESA / Thomapple
6A	34-inch	504,187	507,317			0.59	96	Thomapple	U.S. ESA / Thomapple
6A	34-inch	522,218	533,540			2.14	100	Flambeau River	U.S. ESA / Flambeau River
6A	34-inch	528,040	530,240			0.42	100	Flambeau River	U.S. ESA / Flambeau River
6A	34-inch	528,040	530,240			0.42	100	Flambeau River	U.S. ESA / Flambeau River



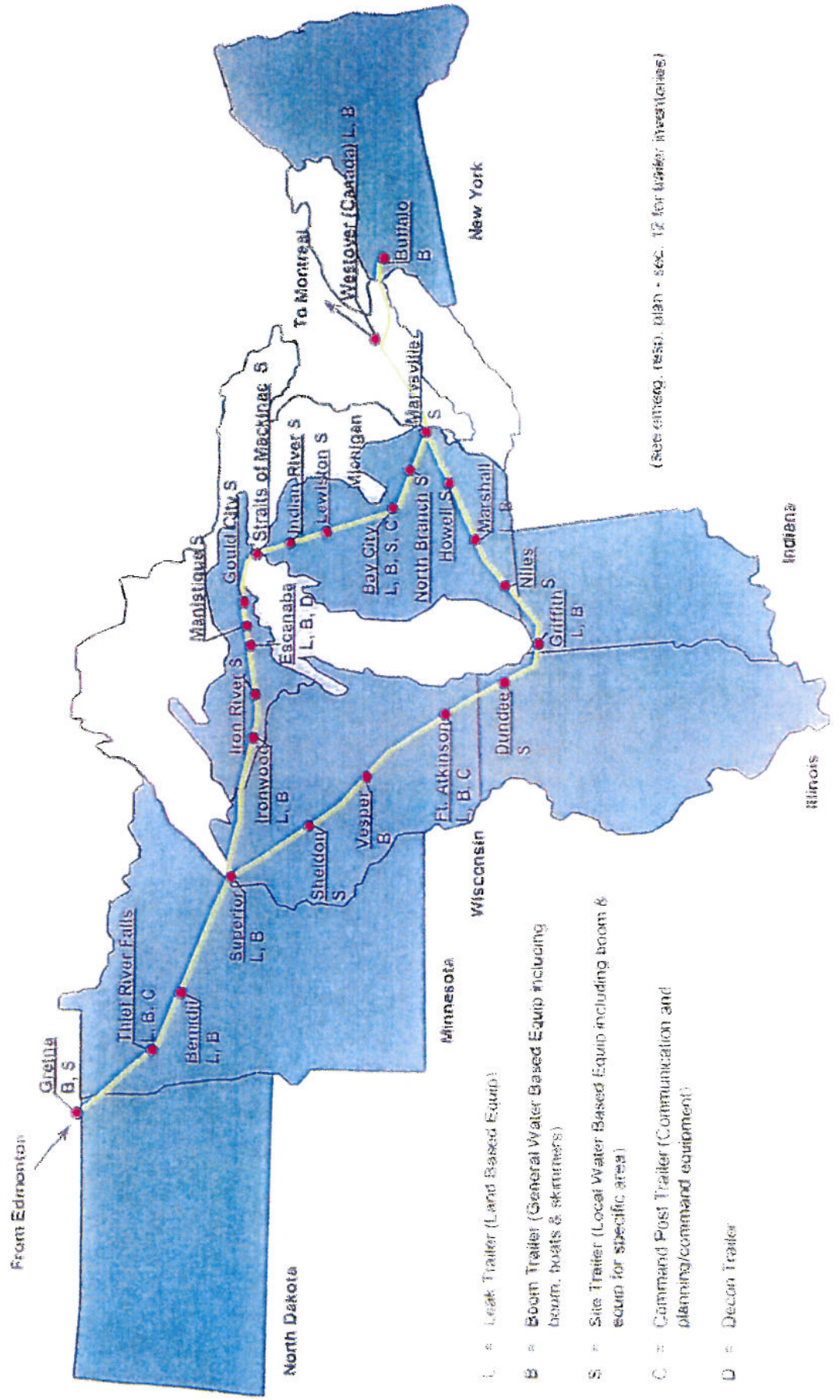
**SUPERIOR REGION RESPONSE ZONE- Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Begin	End	Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area	
										Diversion
				Begin	End					
<b>Crude Oil</b>										
<b>Oraina to Clearbrook (0 - 715,074)</b>										
13	18-inch	4,145	26,615			4.26	777	Pembina River	U.S. DW / Pembina River	
13	18-inch	142,422	149,292			1.30	801	Red River	Enbridge CNW / Red River	
13	18-inch	142,422	149,292			1.30	801	Red River	Enbridge ESA / Red River	
13	18-inch	155,672	159,572			0.74	804	Red River	Enbridge CNW / Red River	
13	18-inch	155,672	159,572			0.74	804	Red River	Enbridge ESA / Red River	
13	18-inch	445,865	450,850			0.94	859	Thief River Falls	U.S. DW / Thief River Falls	
13	18-inch	452,276	459,197			1.31	860	Thief River Falls	U.S. DW / Thief River Falls	
13	18-inch	460,097	467,600			1.42	862	Thief River Falls	U.S. DW / Thief River Falls	
13	18-inch	470,157	475,507			1.01	863	Thief River Falls	U.S. ESA / Thief River Falls	
13	18-inch	470,807	473,807			0.57	863	Thief River Falls	U.S. ESA / Thief River Falls	
13	18-inch	470,807	474,907			0.78	863	Thief River Falls	U.S. ESA / Thief River Falls	
13	18-inch	471,007	474,807			0.72	863	Thief River Falls	U.S. DW / Thief River Falls	
13	18-inch	475,657	481,087			1.03	864	St. Hilaire	Enbridge DW / St. Hilaire	
13	18-inch	535,540	542,206			1.26	876	Plummer	U.S. DW / Plummer	
13	18-inch	686,159	689,159			0.57	904	Lost River	Enbridge DW / Lost River	
13	18-inch		598,014	3,190		1.21	886	Oklee	Enbridge DW / Oklee	

**SUPERIOR REGION RESPONSE ZONE-Drinking Water (DW), Environmentally Sensitive Areas (ESA) and Commercially Navigable Waterways (CNW)  
 UNUSUALLY SENSITIVE AREA PIPE SEGMENTS BY STATIONING - TRANSPORT IMPACT**

Line	Diameter	Begin Stationing	End Stationing	Diversion		Segment Length (mile)	Approximate Milepost	Approximate Location	High Consequence Area
				Begin	End				
<b>Crude Oil</b>									
14	24-inch	0	11,559			2.19	1	Nemadji River	Enbridge CNW / Nemadji River
14	24-inch	0	11,559			2.19	1	Superior	U.S. DW / Superior
14	24-inch	13,278	18,639			1.02	3	Superior	U.S. DW / Superior
14	24-inch	139,269	141,819			0.48	27	Solon Springs	U.S. DW / Solon Springs
14	24-inch	173,944	176,971			0.57	33	St. Croix River	U.S. ESA / St. Croix River
14	24-inch	173,944	176,971			0.57	33	St. Croix River	U.S. ESA / St. Croix River
14	24-inch	178,555	182,755			0.80	34	Eau Claire River	U.S. ESA / Eau Claire River
14	24-inch	178,555	182,755			0.80	34	Eau Claire River	U.S. ESA / Eau Claire River
14	24-inch	212,024	216,124			0.78	41	Totogatic River	U.S. ESA / Totogatic River
14	24-inch	212,024	216,124			0.78	41	Totogatic River	U.S. ESA / Totogatic River
14	24-inch	287,314	290,431			0.59	55	Namekagon River	U.S. ESA / Namekagon River
14	24-inch	352,809	355,625			0.53	67	Ham Lake	U.S. ESA / Ham Lake
14	24-inch	435,470	437,220			0.33	83	Exeland	U.S. DW / Exeland
14	24-inch	440,783	447,274			1.23	84	Big Weirgor Creek	U.S. ESA / Murry
14	24-inch	449,424	452,524			0.59	85	Big Weirgor Creek	U.S. ESA / Murry
14	24-inch	454,108	457,158			0.58	86	Buff Creek	U.S. ESA / Murry
14	24-inch	463,278	469,719			1.22	88	Chippewa River	U.S. ESA / Chippewa River
14	24-inch	463,278	469,719			1.22	88	Chippewa River	U.S. ESA / Chippewa River
14	24-inch	463,278	469,719			1.22	88	Chippewa River	U.S. ESA / Chippewa River
14	24-inch	476,368	500,460			4.56	93	Thornapple	U.S. ESA / Thornapple
14	24-inch	504,246	506,657			0.46	96	Thornapple	U.S. DW / Bruce
14	24-inch	504,246	506,657			0.46	96	Thornapple	U.S. ESA / Bruce
14	24-inch	504,246	506,657			0.46	96	Thornapple	U.S. ESA / Thornapple
14	24-inch	521,542	532,738			2.12	100	Flambeau River	U.S. ESA / Flambeau River
14	24-inch	526,967	529,267			0.44	100	Flambeau River	U.S. ESA / Flambeau River
14	24-inch	526,967	529,267			0.44	100	Flambeau River	U.S. ESA / Flambeau River

# Major Response Equipment Staging Areas



(See enbrg. resp. plan - sec. 12 for water investigations)





# Control Point Maps



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## CONTROL POINTS

Control Point Map Process

Control Point Map Record



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## CONTROL POINT MAPPING

### **Enbridge Transportation North Liquids System**

As part of an emergency response readiness program, Enbridge has developed Control Point Map sets to be used as a tool for training, during spill response activities, and communications. Information gathered on other projects (High Consequence Area analysis, river bank stabilizations, etc...) is used in conjunction with relevant pre-existing information, data from governmental agencies such as the U.S. Army Corps of Engineers and the U.S. Geological Survey. Aerial and ground confirmation of the control points is performed as a means to field truth the data. Efficiency and control point mapping enhancements are made by qualified emergency response personnel.

Refer to Book 7: Emergency Response for criteria relevant to Control Point Mapping procedures

Attached is a list of the Control Point Maps significant to this region. Full sets of Control Point Maps are retained in Enbridge Region Offices, along with holders of Book 7 Emergency Response.



**Superior Region Control Point Maps- Refer to Region Control Point Map Books**

**Lines 1-4, 13**

Tongue River	MP 786.00
Red River of the North	MP 801.73
Red Lake	MP 864.20
Clearwater River	MP 875.37
Cass Lake	MP 956.00
Mississippi River	MP 985.97
Ball Club River	MP 989.43
Deer River	MP 994.88
Prairie River	MP 1011.00
East Savanna River	MP 146.04

**Line 5**

Nemadji River	MP 1098.85
Amnicon River	MP 1107.07
Brule River	MP 1121.46
North Fish Creek	MP 1150.20
South Fish Creek	MP 1152.60
Bay City Creek	MP 1156.55
Beartrap Creek	MP 1160.40
Bad River	MP 1165.00
Montreal River	MP 1189.32
Siemens Creek	MP 1193.50
Iron River	MP 1271.65
Paint River	MP 1290.10
Whitefish River	MP 1358.16
Indian River	MP 1393.57
Straits of Mackinac	MP 1475.63
Indian River	MP 1507.78

**Line 6A and 14**

Nemadji River (14)	MP 1.33
Nemadji River (6A)	MP 1.58
St. Croix River	MP 33.13
Totogatic River	MP 40.53
Namekagon River	MP 53.78



# Region Security Plan

# Superior Region Security Response Plan

## Purpose

The security procedures in this tab are specific to Superior Region. For information applicable to all sites at all times, see Book 7: Emergency Response, 01-02-04, General Site Security Standards, 03-02-05, Security Threat Condition Levels and 03-02-08, Bomb and Security Threats. For contact lists, see the Superior Region Emergency Response Directory.

In accordance with pipeline security guidance provided by the Pipeline and Hazardous Materials Safety Administration (PHMSA), the following two locations in Superior Region have been identified as "critical facilities".

Superior (WI) Terminal  
Clearbrook (MN) Terminal

All other locations within Superior Region do not meet the PHMSA/QPS thresholds for being designated critical. Accordingly this document is divided into two sections. The first section outlines security measures to be taken within Superior Region at its critical facilities. The second section outlines security measures to be taken at all other facilities within Superior Region.

All information in the Superior Region Security Response Plan must be reviewed annually.

## Threat Condition Levels



# Superior Region Security Response Plan

Level	Critical Facilities: Clearbrook/Superior Terminals
<p><b>Low (Green)</b></p>	<p><u>Signage</u>            Post signs at the main gate directing visitors to the check-in location and to designated parking areas            Post "No Trespassing" signs every 100 – 150 ft along the perimeter fencing and at each gate</p>
	<p><u>Access Control</u>            Electric gates will serve as access control.</p> <ul style="list-style-type: none"> <li>• Employees will use scan cards that will record time, date and access card number at the time of entering.</li> <li>• Visitors will use speaker phone to gain access. On site employees will ensure that the visitor:               <ul style="list-style-type: none"> <li>• Has a legitimate business purpose for being at the facility (verify with intended on-site company personnel that a visitor is expected)</li> <li>• Shows a photo ID if visitor is unknown. If no ID is available, confirm identity of visitor with on-site personnel</li> <li>• Is aware of site specific safety information.</li> </ul> </li> </ul> <p>Area site supervisors or designates must be aware of the whereabouts of contractors working at the facility at all times</p>
	<p><u>Vehicle Control</u>            Vehicles must be parked in areas designated by signage</p>
	<p><u>Fences/Gates</u>            The perimeter of the facility must be fenced            Gates must be locked or secured in the closed position at all times            The integrity of fences and gates must be maintained at all times. All stations under construction will maintain proper fencing at the height of existing fence            Vegetation growth must be controlled on the interior and exterior of the fencing to the extent possible (e.g. Non-company property).</p>
	<p><u>Keys and Padlocks</u>            Spare keys and padlocks must be stored in a locked box maintained by the Supervisor or designate            All spare keys must be signed in/out with the Supervisor or designate using a log sheet kept with the locked box            All staff will be issued one key and spares will be controlled with a sign-out sheet maintained by the Supervisor or designate            Only the Region Manager has the authority to acquire additional keys            Contractors may be issued keys only with approval from the Regional Manager or designate            The Region Accountant is responsible for distributing and tracking keys in the Region            Supervisor or designates are responsible to ensure any keys issued are returned when an employee is transferred or leaves the company or when a contractor completes their work.</p>
	<p><u>Lighting</u>            Building and perimeter lighting must be functional at all times, with perimeter lighting directed toward the fence line</p>
	<p><u>Cameras and Alarms</u>            Cameras installed at the four locations within the Superior Terminal and the main gate at the Clearbrook Terminal must be adequately maintained</p>

# Superior Region Security Response Plan

Level	Critical Facilities: Clearbrook/Superior Terminals	
	<p><u>Monitoring</u></p> <p>Employee will make rounds, which includes driving the perimeter of the terminal and checking within pump rooms, at least twice per shift.</p> <p>Quarterly site security inspections must be completed using the Safety Inspection form (for more information, see Book 2, Safety 01-03-01, Completing Safety Inspections)</p>	
	<p><u>Employee Awareness</u></p> <p>Unless they are of immediate concern, security issues should be identified and documented at local monthly EH&amp;S meetings. Items of immediate concern should be brought to Management's immediate attention.</p> <p>Safety coordinators are responsible to ensure all company security standards and procedures are reviewed annually with employees.</p> <p>Employees must be aware of vehicles frequently driving by or parking along roadways adjacent to company facilities, including:</p> <ul style="list-style-type: none"> <li>• Clearbrook, County Road # 49 and township road north of station</li> <li>• Superior, Barton Avenue, East 21<sup>st</sup> Street, and 31<sup>st</sup> Avenue</li> </ul> <p>Secure sensitive company information (e.g., route sheets, employee information) in locked filing cabinets, desk drawers or offices outside regular working hours.</p> <p>Shred discarded sensitive company information.</p>	
	<p><u>Communications</u></p> <p>Test and maintain communication systems (e.g., cellular phones, radio systems) as part of emergency response exercises (see Book 7, Emergency Response, 01-02-01, Training and Exercises).</p> <p>As part of public awareness, provide security awareness information to landowners along the right-of-way and to emergency response organizations.</p>	
	<p><b>Guarded (Blue)</b></p>	<p><b>All of above:</b></p> <p>Regional Manager is responsible to notify areas when the threat level changes.</p>
	<p><b>Elevated (Yellow)</b></p>	<p><b>All of above, PLUS:</b></p> <p><u>Access Control</u></p> <p>Tours of the facilities must be approved by the General Manager.</p> <p>Unknown visitors must be escorted by an employee at all time.</p> <p><u>Monitoring</u></p> <p>Employees will make rounds, which include driving the perimeter of the terminal and checking within pump rooms, at least three times per shift.</p> <p>Employees must perform undocumented weekly inspections of buildings (including those that are not regularly used), storage areas, tanks, and perimeter fencing (after days and times).</p> <p><u>Communications</u></p> <p>Area site supervisors or designates are responsible to establish contact with local law enforcement to discuss changes in threat condition levels, company security standards and procedures, sharing of resources, and to provide quarterly updates. Consider arranging site visits.</p> <p><u>Employee Awareness</u></p> <p>Area site supervisors or designates are responsible to immediately notify employees when threat condition levels change (e.g., emails, bulletin board), and review all company security standards and procedures pertaining to the new threat level.</p> <p>In addition, safety coordinators are responsible to ensure all company security standards and procedures are reviewed quarterly with employees.</p>

# Superior Region Security Response Plan

Level	Critical Facilities: Clearbrook/Superior Terminals
<b>High (Orange)</b>	<p><b>All of above, PLUS:</b></p> <p><u>Access Control</u></p> <p>Upon entry into the facility, security must ensure the visitor (including office employees visiting field locations):</p> <ul style="list-style-type: none"> <li>• Signs in at the designated guard house</li> <li>• Records vehicle description/license number</li> <li>• Shows photo ID</li> </ul> <p>An outside security service will be utilized to man the front gates and be responsible for the preceding bullets.</p> <p>Restrict access through main gates only.</p> <p>At Superior, the guard house at the main gate will be used as a checkpoint. Visitors must be escorted within the terminal after initial check-in.</p> <p>At Clearbrook, a checkpoint will be established outside of the main gate. Visitors must be escorted within the terminal after initial check-in.</p> <p>During construction, contractor identities should be verified by inspector before entry.</p> <p>Request police to assist with securing access to the facility. For example, extra patrols on the following:</p> <ul style="list-style-type: none"> <li>• Clearbrook: County Road # 49 and township road north of station</li> <li>• Superior: Bardon Ave, East 21<sup>st</sup> St, and 31<sup>st</sup> Ave access to back gate</li> </ul> <p>Tours of the facilities will be postponed during Orange and Red Alert Levels.</p>
	<p><u>Vehicle Control</u></p> <p>Use a 24-hour security service to monitor and inspect all vehicles entering the main gate, including cargo areas, undercarriage, glove box and any area where dangerous items could be concealed. All vehicles will be routed through the main gate. All other perimeter gates will be shut down to traffic.</p> <p>Move vehicles to a central parking area away from equipment/buildings as specified by the site supervisor or designate (where possible, at least 30 yds from critical buildings, tanks and equipment).</p>
	<p><u>Lighting</u></p> <p>If necessary, install temporary lighting at all gates to ensure all areas are adequately lit.</p>
	<p><u>Security Officers</u></p> <p>PerMar Security will be used for outside security services for Superior Terminal. They can be reached at 1-715-297-1466 (Brian Thacker) or 1-715-848-4932 (Tami Artz).</p> <p>Professional and Trustworthy Security of Park Rapids, MN will be used for outside security services for Clearbrook Terminal. They are on retainer and can be reached at 1-866-867-8790. The contact is Dwight Patterson.</p> <p>Review site security standards and procedures with the security service weekly.</p>
	<p><u>Monitoring</u></p> <p>Employees must perform undocumented inspections of buildings (including those that are not regularly used), storage areas, and tank areas at least once per day. This is over and above normal rounds, which include driving the perimeter of the terminal and checking pump rooms, at least three times per shift.</p> <p>Monitor media (television, radio and internet) and company communications for status changes, additional instructions or information.</p> <p>Area site supervisors or designates are responsible to coordinate all employee travel (e.g., remote job sites). Maintain scheduled contact with employees at remote locations.</p> <p>Request police to increase the frequency of patrols.</p>
	<p><u>Employee Awareness</u></p> <p>Area site supervisors or designates are responsible to immediately notify employees when threat condition levels change (e.g., emails, bulletin board) and review all company security standards and procedures pertaining to the new threat level.</p>

# Superior Region Security Response Plan

Level	Critical Facilities: Clearbrook/Superior Terminals
<p style="text-align: center;"><b>High (Orange)</b></p>	<p><u>Communication</u> Area site supervisors will keep an open line of communication with local law enforcement concerning our protective measures</p> <p><u>General</u> All security response activities must be logged</p> <p>Review all contract maintenance and capital project work, and consider canceling or delaying non-essential work</p>
	<p style="text-align: center;"><b>Severe (Red)</b></p>
<p><u>Vehicle Control</u> Restrict vehicle access to employees and emergency vehicles only</p>	
<p><u>General</u> Lock doors at all times</p>	
<p>Suspend all maintenance and capital project work involving contractors</p>	

## Superior Region Security Response Plan

Level	<b>Non-Critical Facilities: Pump Stations, Remote Valve Sites, ROW, PLM Shops and Offices</b>
<b>Low (Green)</b>	<p><u>Signage</u></p> <p>Post signs identifying company emergency contact information on each side of the perimeter fencing.</p> <p>Post "No Trespassing" signs every 100 – 150 ft along the perimeter fencing and at the main gate.</p> <p>Along the right-of-way, post warning signs in accordance with Book 3, Pipeline Facilities, 03-02-05, Right-Of-Way Signs.</p>
	<p><u>Access Control</u></p> <p>Upon entry to the site, an employee must review site-specific safety information with visitors. This does not apply at shops and offices.</p> <p>For the Superior Office, outside regular working hours, the alarms at the main doors are monitored by Arrowhead Security. For the Bemidji Office, outside regular working hours, the alarms at the main doors are monitored by Bonded Lock and Alarm. The first/last employee to enter/leave the facility at the start/end of the day is responsible to enter the security code to enable the alarms.</p>
	<p><u>Vehicle Control</u></p> <p>Vehicles must be parked in designated areas.</p>
	<p><u>Buildings/Gates/Fences/Maintenance Valves</u></p> <p>The perimeter of the facility must be fenced. Stations under construction will maintain proper fencing around station at the height of existing fence. This does not apply for Offices.</p> <p>Gates must be locked or secured in the closed position when facility is unattended.</p> <p>The integrity of fences and gates must be maintained at all times.</p> <p>Vegetation growth must be controlled on the exterior perimeter of the fencing.</p> <p>Buildings must be locked when employees are offsite.</p> <p>Maintenance valves must be chained and locked at all times.</p>
	<p><u>Keys and Padlocks</u></p> <p>Spare keys and padlocks must be stored in a locked box maintained by the Supervisor or designate.</p> <p>All spare keys must be signed in/out with the Supervisor or designate using a log sheet kept with the locked box.</p> <p>All staff will be issued one key and spares will be controlled with a sign-out sheet maintained by the Supervisor or designate.</p> <p>Only the Region Manager has the authority to acquire additional keys.</p> <p>Contractors may be issued keys only with approval from the Regional Manager or designate.</p> <p>The Region Accountant is responsible for distributing and tracking keys in the Region.</p> <p>Supervisor or designates are responsible to ensure any keys issued are returned when an employee is transferred or leaves the company or when a contractor completes their work.</p>
	<p><u>Lighting</u></p> <p>Facility and perimeter lighting must be functional at all times, with perimeter lighting directed toward the fence line.</p>
	<p><u>Monitoring</u></p> <p>Quarterly site security inspections must be completed using the Safety Inspection form (for more information, see Book 2, Safety, 01-03-01, Completing Safety Inspections).</p>
	<p><u>Employee Awareness</u></p> <p>Unless they are of immediate concern, security issues should be identified and documented at each local EH&amp;S monthly meeting. Items of immediate concern should be brought to management's immediate attention.</p> <p>Safety coordinators are responsible to ensure all company security standards and procedures are reviewed annually with employees.</p> <p>Secure sensitive company information (e.g., route sheets, employee information) in locked filing cabinets, desk drawers or office outside regular working hours.</p> <p>Shred discarded sensitive company information.</p>

## Superior Region Security Response Plan

Level	<b>Non-Critical Facilities: Pump Stations, Remote Valve Sites, ROW, PLM Shops and Offices</b>
<b>Low (Green)</b>	<p><u>Communications</u> Test and maintain communication systems (e.g., cellular phones, radio systems) as part of emergency response exercises (see Book 2 Emergency Response, 01-02-01 Training and Exercises).</p>
<b>On Hold (Blue)</b>	<p><b>All of above</b> Regional Manager is responsible to notify areas when the threat level changes.</p>
<b>Elevated (Yellow)</b>	<p><b>All of above, PLUS</b></p> <p><u>Access Control</u> Visitors must be checked in by an employee and escorted when possible. This does not apply to shops and offices.</p> <p><u>Monitoring</u> Employees must complete weekly site inspections of manned and unmanned pump stations, including valves, buildings and perimeter fencing (after days and times).</p> <p><u>Employee Awareness</u> Area site supervisors or designates are responsible to immediately notify employees when threat condition levels change (e.g., emails, bulletin board) and review all company security standards and procedures.</p> <p>In addition, safety coordinators are responsible to ensure all company security standards and procedures are reviewed quarterly with employees.</p>
<b>High (Orange)</b>	<p><b>All of above, PLUS</b></p> <p><u>Access Control</u> No visitors or contractors are permitted without approval from the regional manager. This does not apply to offices and PLM shops.</p> <p><u>Vehicle Control</u> Restrict vehicle access to employees and emergency vehicles only. No visitor or contractor vehicles are permitted without approval from the regional manager. This does not apply to offices and PLM shops.</p> <p><u>Security Officers</u> Regional management must assess need for 24-hour security services on a site-specific basis.</p> <p><u>Monitoring</u> Employees must complete site inspections of all manned and unmanned pump stations to include valves, buildings and perimeter fencing, at least twice per week.</p> <p>All valve sites, densitometers and other remote facilities will be inspected once per week. This includes all manual valves. Inspect for tampering and condition of locking devices.</p> <p>In consultation with Aviation and Operation Services, increase frequency of Aerial Patrols to weekly.</p> <p>Maintain scheduled contact with employee(s) at remote locations.</p> <p>Request police to increase the frequency of patrols.</p>

## Superior Region Security Response Plan

Level	Non-Critical Facilities: Pump Stations, Remote Valve Sites, ROW, PLM Shops and Offices
<p style="text-align: center;"><b>High (Orange)</b></p>	<p><u>Employee Awareness</u> Area site supervisors or designates are responsible to immediately notify employees when threat condition levels change (e.g. emails, bulletin board) and review all company security standards and procedures.</p>
	<p>In addition, area site supervisors or designates are responsible to ensure all company security standards and procedures are reviewed weekly with employees.</p>
	<p><u>Communications</u> Area site supervisors or designates will keep an open line of communication with local law enforcement concerning our protective measures.</p>
	<p>Advise landowners of security status and provide emergency contact information if unusual or suspicious activity is observed.</p>
<p style="text-align: center;"><b>Severe (Red)</b></p>	<p><u>General</u> All security response activities must be logged.</p>
	<p>Review all contract maintenance and capital work, and consider canceling or delaying non-essential work.</p>
	<p><b>All of above, PLUS:</b></p>
	<p><u>Access Control</u> Regional management must establish contact with ETN Crisis Management Center and ETN Incident Screening Committee in Edmonton.</p>
	<p>Prepare for or shut down or evacuate facilities as identified or directed by senior management.</p>
	<p>Restrict access to area staff unless approved in advance by regional management.</p>
<p><u>Vehicle Control</u> Restrict vehicle access to employees and emergency vehicles only.</p>	
<p><u>General</u> Lock doors at all times.</p>	
<p>Suspend all maintenance and capital work involving contractors.</p>	
<p><u>Monitoring</u> Regarding Aerial Patrols, confirm with Aviation Department as no fly restrictions could apply.</p>	



# Appendix

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## **Appendix - Information Summary**

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## 1. OPERATOR IDENTIFICATION

Enbridge (U.S.) Inc.  
Operates the Enbridge Energy, Limited Partnership Pipeline System  
1100 Louisiana, Suite 3200  
Houston, TX 77002-5216  
(713) 650-8900 (Phone Number)  
(800) 858-5253 (24 hr. Emergency Number)  
(713) 653-8711 (Fax)

## 2. RESPONSE ZONE DESCRIPTION

The Enbridge Liquids Pipeline System (Lakehead System) consists of four response zones. These response zones represent the regional boundaries designated in the normal operating structure. The response zones include:

- **Superior Region**
- Chicago Region
- Cushing Region
- Enbridge Pipelines North Dakota

### **Superior Region Response Zone (#866)**

The Superior Region response zone begins at the Canadian border near Nêche, North Dakota at M.P. 773.72 and continues across northern Minnesota into Superior Wisconsin at M.P. 1098. This section of response zone includes eight pipelines that transport crude and natural gas liquids. The response zone continues south from M.P. 1098 in Superior WI to M.P. 97.23 with pipelines transporting crude oil products. A 30 inch pipeline originates in Superior WI at M.P. 1098 and transports crude oil and natural gas liquids across northern Wisconsin, the Upper Peninsula of Michigan and into lower Michigan where the response zone ends at M.P. 1544.30. The Superior Region system is comprised of:

- Approximately 2,085 miles of pipeline, with pipe diameters ranging from 18 to 48 inches;
- 29 Pump Stations are located along the pipes;
- The Superior System also includes 42 tanks (33 Tanks at Superior; 9 at Clearbrook). Breakout tanks are located at Superior, WI (6.8 million barrels storage capacity) and Clearbrook, MN (1.3 million barrels storage capacity).



Counties included in the Superior Region response zone are:

<b>North Dakota</b>	<b>Minnesota</b>	<b>Wisconsin</b>	<b>Michigan</b>
Pembina	Kittson	Douglas	Cheboygan
	Marshall	Bayfield	Delta
	Red Lake	Washburn	Dickinson
	Polk	Sawyer	Emmet
	Clearwater	Ashland	Gogebic
	Beltrami	Iron	Iron
	Cass	Rusk	Mackinac
	Itasca		Marquette
	Aitkin		Otsego
	St. Louis		Schoolcraft
	Carlton		



This response zone includes the following pipelines:

Line	Pipeline Sections	Begin Stationing	End Stationing	Miles	Pipeline Diameter	Product
1	Gretna, Manitoba to Clearbrook, MN	0	716,232	135.7	20"	Crude Oil & Natural Gas Liquids
1	Clearbrook, MN to Superior, WI	716,232	1,712,883	159.6	18"	Crude Oil & Natural Gas Liquids
2	Gretna, Manitoba to Superior, WI	0	1,712,887	324.5	26"	Crude Oil
3	Gretna, Manitoba to Superior, WI	0	1,712,887	324.2	34"	Crude Oil
4	Gretna, Manitoba to Donaldson, MN	0	168,406	31.9	36"	Crude Oil
4	Donaldson, MN to Viking, MN	168,041	213,109	5.5	48"	Crude Oil
4	Donaldson, MN to Viking, MN	213,461	322,423	20.6	38"	Crude Oil
4	Donaldson, MN to Plummer, MN	320,971	393,021	13.6	48"	Crude Oil
4	Viking, MN to Plummer, MN	394,395	527,703	25.2	36"	Crude Oil
4	Viking, MN to Clearbrook, MN	526,404	545,840	3.7	48"	Crude Oil
4	Plummer, MN to Clearbrook, MN	547,141	647,345	19.0	36"	Crude Oil
4	Plummer, MN to Clearbrook, MN	645,406	716,261	13.4	48"	Crude Oil
4	Clearbrook, MN to Cass Lake, MN Loop	716,411	878,927	30.8	36"	Crude Oil
4	Cass Lake, MN Loop (MP939.67 to MP953.04)	877,981	946,695	13.1	48"	Crude Oil
4	Clearbrook, MN to Deer River, MN Loop	946,641	1,059,570	21.4	36"	Crude Oil
4	Deer River, MN Loop (MP974.73 to MP995.83)	(127,102)	1,173,196	22.0	48"	Crude Oil



Line	Pipeline Sections	Begin Stationing	End Stationing	Miles	Pipeline Diameter	Product
4	Cass Lake, MN to Floodwood, MN Loop	1,173,151	1,306,304	25.2	36"	Crude Oil
4	Floodwood, MN Loop (MP1019.73 to 1044.33)	1,299,654	(47,009)	24.6	48"	Crude Oil
4	Deer River, MN to Wrenshall, MN Loop	1,429,072	1,512,231	15.7	36"	Crude Oil
4	Wrenshall, MN Loop (MP1060.11 to MP1079.91)	1,512,091	1,616,806	20.0	48"	Crude Oil
4	Wrenshall, MN Loop to Superior, WI	1,616,840	1,712,760	18.2	36"	Crude Oil
13	Gretna, Manitoba to Clearbrook, MN	0	715,074	135.5	18"	Crude Oil
5	Superior, WI to Mackinaw, MI	0	1,993,306	377.5	30"	Crude Oil & Natural Gas
5	Straits of Mackinac East and West (*2)	1,993,306	2,015,016	8.2	20"	Crude Oil & Natural Gas
5	Straits of Mackinac to Lewiston Pump Station M.P. 1544.3	2,015,016	2,378,371	68.8	30"	Crude Oil & Natural Gas
6A	Superior, WI to M.P. 97.23 (Ladysmith, WI)	0	513,368	97.2	34"	Crude Oil
14	Superior, WI to M.P. 97.23 (Ladysmith, WI)	0	512,719	97.1	24"	Crude Oil

(Number) Diversion Stationing



### **3. CONSISTENCY WITH NATIONAL AND AREA CONTINGENCY PLANS**

#### **National Contingency Plan**

Enbridge (U.S.) Inc. has reviewed the National Contingency Plan to ensure our emergency response planning and structure is consistent. The Incident Command Structure established for Enbridge assumes Enbridge, as a "responsible party" will work in a "unified command structure" with local, state and/or federal agencies to manage the emergency.

The Enbridge Emergency Response Plan (ERP) adheres to all Federal, State and Local emergency response requirements for the crude oil pipeline transportation industry. This section of the appendix was developed to address specific protocol questions common to ERP requirements.

Enbridge identifies the technical training and qualification standards for operations employees in accordance with company policy, industry standards, and applicable government regulations. For the Liquid Pipeline side, these can be found in our Operations and Maintenance Procedures (O&MP) Book 1 Tab 5 – Training and Qualifications. For the Gathering Systems, this can be found in Gathering Systems O&MP Section 4. Specifically:

1. Characteristics and hazards of oil: This training is conducted annually during HAZWOPER refresher training, specifically in the hazardous materials and Material Safety Data Sheet (MSDS) training components.
2. Conditions that are likely to worsen emergencies, including the consequence of facility malfunctions or failures and appropriate corrective actions: These are covered in our O&MP Books 7 both General & Region Specific under the High Consequence Areas (HCA) identified On individual maps and covered as part of the Emergency Response Training
3. Steps necessary to control an accidental discharge of oil: Training on general operations procedures cover the precautions to prevent discharges and reviewed during our annual table-top exercises, field exercises and HAZWOPER training.
4. Steps necessary to minimize the potential for fire, explosion, or environmental damage. Covered in annual ignition source, HAZWOPER and emergency response training
5. Proper firefighting procedures and use of personal protective equipment (PPE). fire fighting procedures or extinguisher use is provided within three months of initial hire or before an individual is assigned to a specific response position and every three years thereafter. PPE training is covered in annual refresher training for all employees.



Additional Comments:

The Enbridge O&MP Book 1 section 05-02-02, which covers specific duties in the Emergency Response Training Matrix, and O&MP Book 7 section 02-01-01 "Overview of Emergency Response Actions", addresses the appropriate levels of training and the requirements specified in OSHA 29 CFR 1910.120.

The O&MP Book 1 section 04 describes the company's procedures for maintenance of response training records for response personnel.

The O&MP Book section 05-02-02 describes the requirements for maintaining drill documentation for three years and ensuring the availability of such records for inspectors.

**Area Contingency Plan**

Enbridge has reviewed the applicable Area Contingency Plans and established communication, where necessary, with the appropriate Area Contingency Plan coordinator to ensure that Enbridge information is accurate. Enbridge will, on an on-going basis, continue to review these plans, provide input as necessary and participate in the Area Committees as appropriate. The identification of environmentally sensitive (high consequence areas) will be reviewed with Area Contingency Plans in order to establish consistency.

The Area Contingency Plans that must be considered within Enbridge's Emergency Response Plan have been identified and are listed below according to the response zone affected.

Superior Response Zone

<b>USCG</b>	<i>USCG Ninth District</i>	216-902-2045
	1240 E. 9 <sup>th</sup> Street Cleveland, OH 44199	
	<i>USCG Marine Safety Office</i>	218-720-5286
	600 S. Lake Ave., Canal Park Duluth, MN 55802-2352	
	<i>USCG Marine Safety Office</i>	906-635-3233
	337 Water Street Sault Ste. Marie, MI 49783	
<b>EPA</b>	<i>EPA Region V</i>	312-886-3000
	77 W. Jackson Blvd. Chicago, IL 60604	
	<i>EPA Region VIII</i>	303-312-6312
	999 - 18 <sup>th</sup> St., Ste. 300 Denver, CO 80202-2466	

#### 4. CALCULATION OF WORST CASE DISCHARGE

##### **Worst Case Discharge Volume Calculation Methodology**

The approach for calculating Worst Case Discharge (WCD) volume utilizes American Innovation's Integrity Assessment Program (IAP) software. The IAP model performs two calculations to determine the total volume out at any given point along the pipeline in the event of a rupture, maximum initial and maximum stabilization loss.

The calculations used to determine the worst case discharge volume use:

- An assumption of a guillotine rupture (100% volume out)
- Design pipeline capacity to determine the amount of product released prior to a rupture being isolated by closure of remote-controlled mainline valves
- An assumption that all of the product in the pipe except that isolated by either elevation or the location of existing remote-controlled valves will be discharged at a rupture location.

This yields a conservative estimate of the worst case discharge volume.

IAP software and data is in custody of, and maintained by the Enbridge Liquid Pipelines Operational Risk Management Group.

##### Maximum Initial Loss

Initial volume out is the amount of product that is released before a pipeline is shutdown and remote-controlled isolation valves closed in vicinity of the rupture

##### Maximum Initial Loss

= pipeline flow rate x (time to recognize rupture and isolate the pipeline)

##### *Time to Recognize Rupture*

A full mainline rupture will show up as alarms on SCADA screens within 1 minute of its occurrence.

The Material Balance Leak Detection will recognize a rupture within 5 minutes of a rupture occurring (runs in a 5 minute cycle). The Material Balance Leak Detection is a backup to operator recognition

The volume out calculation uses a time to recognize rupture of 5 minutes.

##### *Valve Closure Rate*

All motor operated valves in the Enbridge liquid mainline system close in three minutes or less. This is a design criteria requirement for motorized mainline valves used by Enbridge.



*Time to Isolate Line (Remote Controlled Valves Only)*

The time to isolate a line is the time it takes to recognize the rupture plus the time it takes to close the remote-controlled mainline valves. For the Enbridge liquid mainline system this time is 8 minutes.

Maximum Stabilization Loss

The maximum stabilization loss is a worst case calculation of the amount of oil that will escape to ground after isolation has occurred. The calculation takes into consideration the outer diameter and wall thickness of the pipe, the pipeline elevation profile, and the location of remote-controlled valves.

Worst Case Discharge Volume

Worst Case Discharge (WCD) Volume  
= Maximum Initial Loss + Maximum Stabilization Loss

Calculation of Worst Case Discharge for Mainline Piping

Line	Capacity (bbls/day)	Time to Isolate (min)	Worst Case Discharge (bbls)	Location (ft Stationing)	Location (MP)
1	236770	8	12336	1712719	1098.1
2	431480	8	20850	1712815	1098.12
3	471110	8	18804	34147 Eqn 60	1041.93
4	790000	8	45961	1159859	993.39
5	529600	8	27939	341304	1162.63
6A	656660	8	33614	4902	0.93
13	187560	8	5143	214434	814.33
14	387360	8	18179	13745	2.6

Calculation of Worst Case Discharge for Tankage

Prevention Measure	Standard	Credit (percent)
Secondary containment > 100%	NFPA 30	50
Built/repaired to API standards	API STD 620/650/653	10
Overfill protection standards	API RP 2350	5
Testing/cathodic protection	API STD 650/651/653	5
Tertiary containment/drainage/treatment	NFPA 30	5
<b>Maximum allowable credit</b>		<b>75</b>

25% of largest tank in Superior Region Zone = 390,000 x 25% (75% PHMSA credit) = 97,500 bbls



## **5. IDENTIFICATION OF ENVIRONMENTALLY SENSITIVE AREAS**

Enbridge utilizes the criteria described in its integrity management plan (HCA Management Plan) to identify and evaluate varying degrees of sensitivity to a number of public safety and environmental concerns along its right-of-way.

Spatial data regarding the HCA sites were derived from the National Pipeline Mapping System (NPMS) database maintained by PHMSA and mapped using the Geographic Information System (GIS) software ESRI (Environmental Systems Research Institute) ArcMap. In addition to the HCA's identified by PHMSA, Enbridge considered the following features in its Unusually Sensitive Area assessment.

- Rivers identified as high volume areas
- Additional drinking water resources verified through state databases
- Environmentally sensitive areas identified through regional or field knowledge

In addition, HCA's were identified that may be affected by a release from Enbridge pipelines via transport mechanisms. The types of transport mechanisms considered were:

- Overland flow of crude oil to an HCA which is a function of topographic gradients, locations of ditches, and barriers to flow, in addition to stationing-specific volumes of crude oil that could be potentially released from an Enbridge pipeline.
- Flow of crude oil with/on water to an HCA from static lakes and ponds or perennial streams
- Spray of crude oil from a potential rupture to an HCA

The Enbridge HCA maps are an integral part of Enbridge emergency planning and response and are distributed to the Enbridge Regional Offices. The HCA maps are available upon request.



## **6. SIGNIFICANT AND SUBSTANTIAL HARM**

Enbridge has determined that the Superior Response Zone meets the criteria that requiring the zone to be considered as having the potential to cause "significant and substantial" harm.