TESTIMONY OF SUSAN M. CONNOLLY

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BEFORE THE HOUSE TRANSPORTATION AND INFRASTRUCTURE COMMITTEE

REGARDING THE ENBRIDGE OIL SPILL

MARSHALL, MICHIGAN

HEARING HELD: SEPTEMBER 15, 2010

Introduction:

I would like to thank the Chairman and the members for this opportunity. I come to you today as a concerned parent speaking on behalf of the children, families and staff of a day care center ("Center") located approximately six tenths of a mile from Talmadge Creek and the Kalamazoo River in Marshall. My husband and I have a two and a half year old daughter and a four-year-old son who are at the Center five days a week, from seven thirty in the morning until six o'clock in the evening.

On Monday, July 26, at seven twenty a.m., my husband and I dropped off our children at day care. Our home is about two miles north of Talmadge Creek. Driving just two blocks south from our home, I could smell a strong "odd" odor in the air. When we arrived at the Center, the odor was even stronger which is why I am before you today. As the weeks have passed, I have many concerns, questions and doubts. I would like to start with the following:

Health – Symptoms:

As of July 26, the following symptoms have been noted of some children, staff and/or the owners of the Center:

- Personal Experiences:
    - Our son vomited the night of July 26 and our daughter had a rash that appeared the second week of the spill and lasted about six days.
    - My husband and I have experienced at the Center:
        - Headaches, eye irritation, lethargy/tiredness, a burning sensation in the throat, nausea and/or a cough.
    - At hour home on Saturday, July 31, our dog (a Boston terrier) was in the yard most of the day. Over the course of the night, he had diarrhea and vomited numerous times. I contacted our vet Monday morning and was told it, most likely, was a reaction to the Benzene or VOCs in the air.
    - At our home, there were times that we would not run our HVAC or open our windows due to the strong odor.
    - On Friday, August 28, I spent the day at the Center. I smelled a slight odor in the front entryway and in the staff lunchroom. I occasionally had a slight burning sensation in my throat and watery eyes. The following day I had a migraine as well. While I cannot verify my symptoms to the air quality, I note that I did not have those symptoms prior to the time at the Center.
    - In addition, in the first week or two of the spill the children at the Center were playing outdoors when an oil covered goose landed on the property. The Center called the Enbridge Hotline but it was several hours before there was a response and the animal had flown away.
- Other Children, Staff and the Owners:
    - Reported cases of vomiting, asthma, shortness of breath, lethargy, headaches, rashes, eye irritation, migraines and/or a sore/burning throat.
    - Several staff lost time from work due to their symptoms. A parent who I spoke to said when he went to the Center to withdraw his daughter, he was there 15 minutes and got a migraine immediately.

Parent Meeting Held August 17 at the Center:

The following representatives attended:

- Jim Rutherford of the Calhoun County Health Department;
- Two toxicologists on behalf of CTEH (one was Dr. Angela Harris);
- Two representatives for the EPA;
- Don DeBlasio of the EPA;
- Dr. Don Lou, an environmental hygienist for Enbridge; and
- Larry Springer, Senior Manager US Public Affairs for Enbridge.

The following statements were made:

- Jim Rutherford said, "The air quality has never been a problem at the Center." He "would have his own child stay at the Center without reservation." He stated, "No Benzene or VOCs have been detected at the Center."
- Dr. Angela Harris, CTEH toxicologist, stated that the positive Benzene reading seen on the data provided (*See Exh-015*) was "just a misread." Dr. Harris said that the "machine was not calibrated before coming to the Center and it was reading data from the last location tested."
- The two toxicologists from CTEH stated, "certain VOCs identified are the cleaning chemicals used to sanitize the machines or are the cleaning chemicals used by the owners of the Center."
- We were told that the "acceptable" levels of Benzene and/or VOCs are for infants, children and adults. There is no differential between infants and adults.

Personal Conversation with Dr. Angela Harris, Toxicologist for CTEH on Thursday, September 2:

When I arrived at the Center on September 2nd, I had a conversation with Dr. Harris. Here are a few of her comments:

- You know, "whether Benzene or VOCs have been detected, you would have to be exposed to these chemicals at a high level for a long period of time, I am talking exposure 24 hours a day / 365 days a year." She made no comment about "short term" health effects.
- "There is nothing detected here, you will need to get your own toxicologist." I explained to Dr. Harris that the Center could not afford a private toxicologist to perform tests. She chuckled and said, "I know, I know how much Enbridge is paying me every day."

- Dr. Harris, a toxicologist for Enbridge, told me that if I or anyone from the Center would be going to DC to testify: "What do you have to say? You are not a toxicologist. You have no experience or expertise in this. There is nothing you can validate. Why would they have you come there?"
- The answer is: I may not be a toxicologist, but I am a mother.

The week following the Parent Meeting (August 24th) :

- Four parents withdrew a total of six children due to short-term health concerns, uncertainty of the ongoing smell, air quality and potential long-term health effects. Many parents expressed concern of the truthfulness provided by the County Health Department, the EPA and Enbridge officials who attended the parent meeting. Parents felt they have been lied to.
- An employee who has been with the Center since it opened resigned September 3rd due to personal health problems since the spill and concerns of the air quality.

Air Monitoring/Validity:

The EPA and CTEH stated tests of the air at the Center were taken as of Wednesday, July 28 (*See Exh-009*). The first air test was not performed at the Center until Sunday, August 1 – **ONE WEEK AFTER THE SPILL!** (*See Exh-032*). On August 2, Benzene is reported at 4.5 and, on other dates, higher. I understand that 4.5 is well below the "accepted" level but this test is ONE WEEK AFTER THE SPILL and you must take into consideration the health, safety and well being of infants and children.

CTEH , the EPA and the County Health Department stated "NO BENZENE OR VOC DETECTIONS HAVE BEEN NOTED AT THIS LOCATION" (*See Exh-009 & 10*). When you review the reports, it shows otherwise! I know I am not a toxicologist but when you make a simple comparison of the data, they do not match! That raises suspicion and questions the validity of the results and data provided. As I previously stated, even if the levels of Benzene and/or VOCs were "below the MSDS level", why state "No Detections" when there absolutely were? How can you refer to the MSDS levels when they are for ADULTS not infants/children?

You will note that in the parent data provided by CTEH, certain tests are marked * TIC (modified by validation). When you view the same report on the EPA/Enbridge sheet, *TIC is not there, just the results. No modifications (*See Exh-013 through 029*).

Request for Notice from the CCPHD/EPA:

On Friday, August 28, I called Jim Rutherford and requested he and/or the EPA provide the Center a Notice certifying the air quality has been safe as of July 26. He said he would get something put together immediately as he was "sure the Center would have a claim against Enbridge so they should have something."

The first response I received from Mr. Rutherford was a week later, September 3rd at 4:50 p.m. by email stating it was "taking time as it has to go through several state and federal agencies" and "it should be ready by the middle of next week."

At noon on Sunday, September 12, I received an email from Mr. Rutherford attaching a letter dated September 8 from Linda Dykema ("Dykema") from the Department of Community Health. Dykema's letter is very well scripted and makes several accusations (*See Exh-036 through 041*):

- MDCH states the chemicals monitored at the Center could come from other sources than the spill. While I understand that accusation, children and staff were not stricken with the health effects prior to the Enbridge spill.
- It is stated, "acute health effects at levels lower than could be detected by the instruments used to monitor the air at the Center." I understand that tests more elaborate were performed closer to the spill site but you cannot rule out the effects of those at the Center.
- I also understand the Benzene level, if at or below 60 ppbv, no immediate evacuation was recommended. What is taken into consideration the first test at the Center was not until a week later and the Benzene and/or VOCs were effecting infants and children, not only adults. On page three of the letter it is stated "children are at greater risk of harm than adults from exposure to contaminants in the air."
- Dykema states no benzene was detected in samples taken from "*summa canisters*" between August 1 and August 15 (*See Exh-038 & 039*) but it should be acknowledged that Benzene (while at low levels) WAS DETECTED from "*Tedlar Bags*" on August 2, 3 and as late as August 18 (See *Exh-032 through 035*).
- Dykema comments on the health effects reported by staff. To state how the staff works closely together, are influenced by discussions or concerns, overstated reporting of symptoms related to publicity or legal issues is absurd and insulting.
- Not one MDCH staff member spoke to a single parent whose children were experiencing health concerns. Why?

- MDCH states the Center is not "expected to cause long-term harm." I am thankful for that confirmation but that does not address the short-term effects to the children.
- The letter states at page five no Benzene was found in any air sample taken at the Center (*See Exh-040*). Again, while levels have been below the accepted level there were detections.
- MDCH also cannot determine in the days following the spill of the air effected short-term effects.

It has been almost seven weeks since the spill and the following questions remain:

1. Should the Center have been evacuated during the first two or three weeks since the spill considering infants/children were exposed to low levels of Benzene and VOCs?
2. The Material Safety Data Sheet for what was in Enbridge's line when the Marshall rupture occurred said a mandatory evacuation of at least 1000 feet on all sides of the river for large spills and 200 feet was established for ground water testing which Enbridge adopted for dealing with claims.
3. Why is Enbridge in control of air quality monitoring and posting the reports? Wasn't the EPA suppose to be in control of all monitoring? Why would you trust Enbridge in controlling the data against themselves?
4. If you view the air data on Google Earth for the Center, many do not appear on the EPA/Enbridge primary list (*See Exh-001*). Why?
5. What are the known short and long-term risks for infants and children subject to low levels of Benzene and/or VOCs? How can you rely of levels of that for an adult?
6. Will there be a long-term health study of those affected by the spill?
7. CTEH monitoring states testing was performed at the Center on 7/28, 7/30 and 7/31. Do they exist? (*See Exh-010*)
8. CTEH claims the indoor and outdoor air was monitored on Aug. 5 and "No VOCs or Benzene were detected." (*See Exh-010*) When you view the August 5th reports, there was a low detection of Benzene and VOCs. (*See Exh-015 - 018*). Why not state the low detection?
9. The results provided by CTEH at the parent meeting on Aug. 17 shows "Modified by Validation" next to positive findings (*See Exh-013 through 029*). When you view the CTEH data chart posted by the EPA/Enbridge there is no "modification." Why the discrepancies?
10. The data provided by Weston Solutions states ALL testing was provided in relation to the Center, yet reports are missing. Why?

11. Who will be held accountable in the future if our children develop leukemia, various cancers or other health problems? The argument made by Enbridge is you cannot prove their spill was the cause. . . you cannot prove it is NOT.
12. It should be addressed that the Department of Transportation ("DOT") has been aware of Enbridge violations for, at least, eight years. Aside from Enbridge, shouldn't this tragedy be directed to the DOT for allowing Enbridge to continue the operation of the pipeline? Is the DOT going to admit their accountability?

I would like to thank you for your time. On behalf of my family and everyone at the childcare Center, we hope our voices will be heard and our questions answered. Thank you again.

GOOGLE EARTH - AIR TESTING DATA
FOR DAY CARE CENTER

I am unable to locate the highlighted reports on the EPA/Enbridge Data Sheet

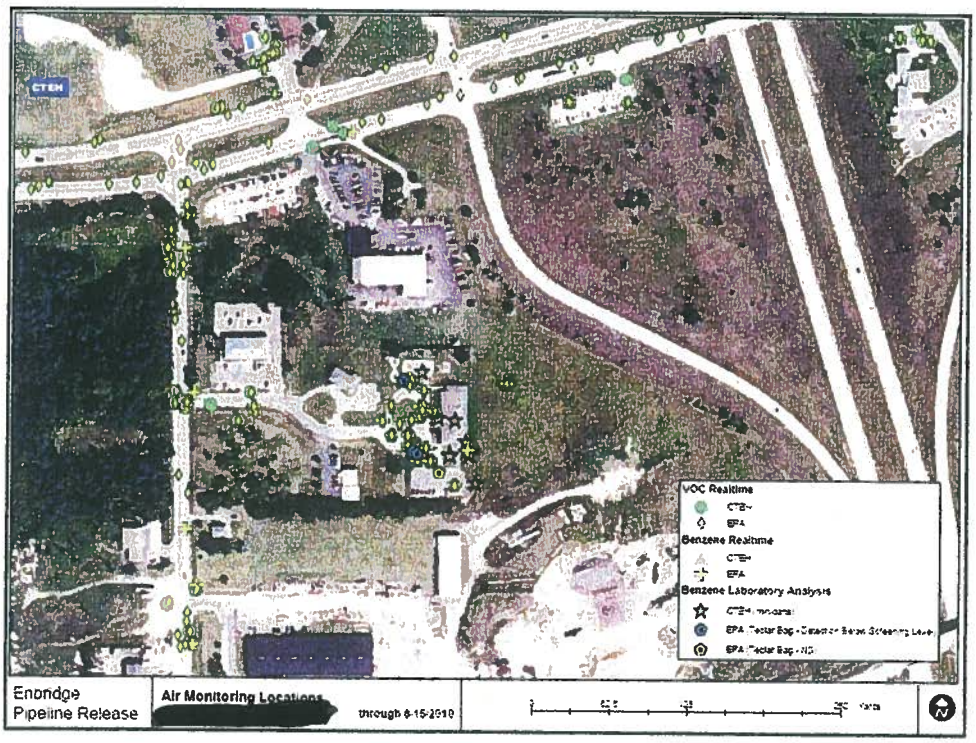
EOS	TB	B01	80210	T9a		
EOS	TB	B01	80210	T3P		
EOS	SC	B22	80210			
TEAM3			80210	PM-01	TEAM3	20100802 PM-01
EOS	SC	B22	80210			
EOS	SC	B24	80210			
EOS	TB	B01	80310	T4P		
EOS	TB	B01	80510	T9a		
EOS	TB	C05	80510	T2P		
EOS	TB	C04	80710	T2A		
EOS	TB	B07	80710	T2P		
EOS	TB	B20	80910	T2P		
EOS	TB	B64	80910	T2P		
EOS	TB	C14	81010	T2A		
EOS	TB	B116	81010	T2A		
EOS	TB	B144	81110	T2P		
AST9			81110	AM-155		
EOS	TB	B50	81110	T4A		
EOS	TB	B190	81210	T2P		
EOS	TB	B72	81210	T4A		
EOS	TB	B220	81310	T2P		
EOS	TB	B94	81310	T4A		
EOS	TB	B145	81410	T4P		
EOS	TB	B121	81410	AT4		
EOS	TB	B180	81510	AT4		
EOS	TB	B203	81510	T4P		
EOS	TB	B237	81610	T4P		
EOS	TB	B270	81710	AT4		
EOS	TB	b310	81810	T4P		
EOS	TB	B309	81810	AT4		
eos	tb	b332	81910	at4		
EOS	TB	B359	82010	AT4		
EOS	TB	B385	82110	AT4		
eos	tb	b436	82210	at4		
EOS	TB	B456	82310	T4P		
eos	tb	b465	82310	at4		
EOS	TB	B494	82410	AT4		
EOS	TB	B534	82510	T4P		
EOS	TB	B527	82510	AT4		
EOS	TB	B554	82610	AT4		
EOS	TB	B581	82710	AT4		

[redacted] Center
Air Monitoring & Sampling Update

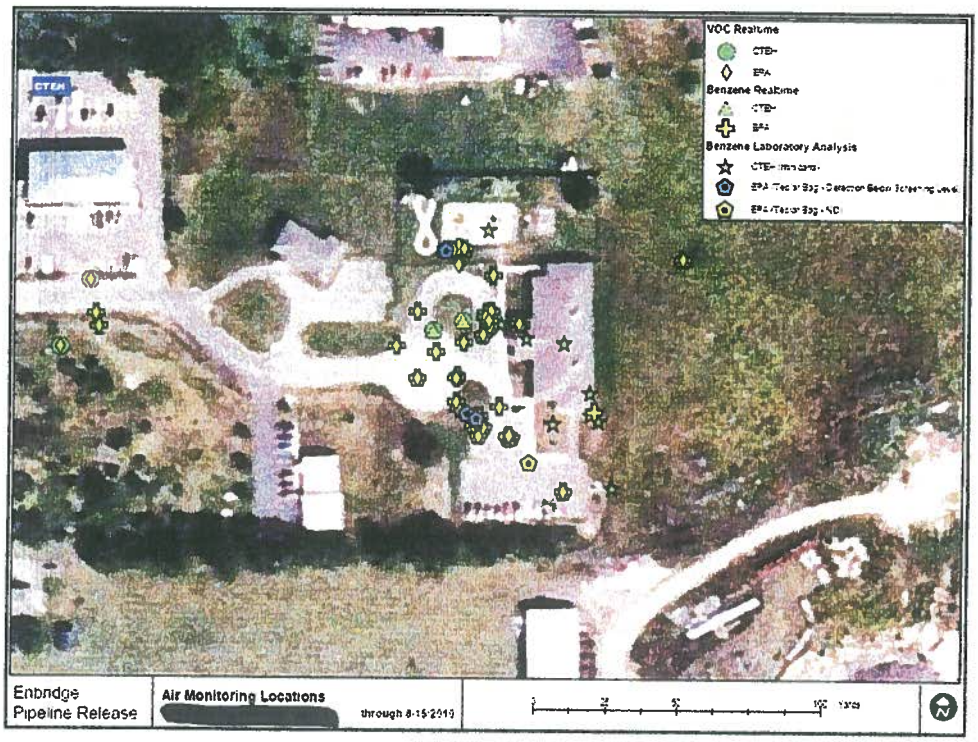
August 17, 2010

Air Monitoring and Sampling Methods

- MultiRAE Plus
  - VOC (0.1 ppm DL)
  - H2S (1.0 ppm DL)
- UltraRAE – Benzene (0.05 - 0.1 ppm)
- Gastec (121L) – Benzene (0.05 ppm)
- Tedlar Bags – EPA (TO-15)
- Minicans – CTEH (TO-15)



Compare these locations to Google Earth - they are not there.



[redacted] Center CTEH Air Monitoring Results
July 30 – August 16, 2010

Analytes	Total Number of Readings	Number of Detects	Geometric Mean Concentration (ppm)	Maximum Concentration (ppm)	Geometric Mean Concentration of Detects
Benzene	36	0	<0.1	<0.1	<0.1
Volatile Organic Compounds (VOCs)	99	0	<0.1	<0.1	<0.1
Total	135	0			

CTEH - Zero

EPA - 3 detects (where are they ?)

[See next page]

8/1/2010 – 8/14/2010
Summary of Benzene Data from Air Sampling at [redacted]

	Number of Samples	Number of Detects	Concentration Range of Detects (ppb)	Health Based Screening Level (ppb)
CTEH	15	0	--	6
EPA	26	3	2.0 – 5.1	6

?

[redacted] Center
CTEH Analytical Results Summary
August 1 - 11, 2010

SampleDate	SampleTime	Samp_No	Analyte	Result	Result_Units	Lab_Result_Qualifier	Location
8/1/2010	14:10	MAMI0801MC019	ACETONE	13	PPBV		Outside
8/2/2010	16:55	MAMI0802MC024	ACETONE	42	PPBV		Outside
8/4/2010	17:45	MAMI0804MC028	ACETONE	11	PPBV		Outside
8/5/2010	17:56	MAMI0805MC029	ACETONE	16	PPBV		Inside / Office
8/5/2010	17:51	MAMI0805MC030	ACETONE	17	PPBV		Inside / Ed. Room
8/6/2010	18:00	MAMI0806MC032	ACETONE	12	PPBV		Outside
8/7/2010	10:51	MAMI0807MC033	ACETONE	29	PPBV		Inside / Ed. Room
8/7/2010	10:49	MAMI0807MC034	ACETONE	24	PPBV		Inside / Office
8/7/2010	18:15	MAMI0807MC035	ACETONE	17	PPBV		Outside
8/8/2010	18:15	MAMI0808MC036	ACETONE	22	PPBV		Outside
8/9/2010	18:20	MAMI0809MC037	ACETONE	19	PPBV		Outside
8/10/2010	18:16	MAMI0810MC038	ACETONE	17	PPBV		Outside
8/11/2010	18:10	MAMI0811MC039	ACETONE	13	PPBV		Outside
8/1/2010	14:10	MAMI0801MC019	ISOPROPYL ALCOHOL	31	PPBV		Outside
8/2/2010	16:55	MAMI0802MC024	ISOPROPYL ALCOHOL	250	PPBV		Outside
8/3/2010	17:50	MAMI0803MC027	ISOPROPYL ALCOHOL	70	PPBV		Outside
8/4/2010	17:45	MAMI0804MC028	ISOPROPYL ALCOHOL	26	PPBV		Outside
8/5/2010	17:56	MAMI0805MC029	ISOPROPYL ALCOHOL	88	PPBV		Inside / Office
8/5/2010	17:51	MAMI0805MC030	ISOPROPYL ALCOHOL	60	PPBV		Inside / Ed. Room
8/6/2010	18:00	MAMI0806MC032	ISOPROPYL ALCOHOL	28	PPBV		Outside
8/7/2010	10:51	MAMI0807MC033	ISOPROPYL ALCOHOL	22	PPBV		Inside / Ed. Room
8/7/2010	10:49	MAMI0807MC034	ISOPROPYL ALCOHOL	12	PPBV		Inside / Office
8/7/2010	18:15	MAMI0807MC035	ISOPROPYL ALCOHOL	29	PPBV		Outside
8/8/2010	18:15	MAMI0808MC036	ISOPROPYL ALCOHOL	31	PPBV		Outside
8/9/2010	18:20	MAMI0809MC037	ISOPROPYL ALCOHOL	94	PPBV		Outside
8/10/2010	18:16	MAMI0810MC038	ISOPROPYL ALCOHOL	13	PPBV		Outside
8/11/2010	18:10	MAMI0811MC039	ISOPROPYL ALCOHOL	15	PPBV		Outside
8/3/2010	17:50	MAMI0803MC027	TOLUENE	5.9	PPBV		Outside
8/7/2010	10:49	MAMI0807MC034	TOLUENE	15	PPBV		Inside / Office
8/3/2010	17:50	MAMI0803MC027	ACETALDEHYDE	20	PPBV	NJ	Outside
8/7/2010	10:51	MAMI0807MC033	ACETALDEHYDE	7.5	PPBV	NJ	Inside - Ed. Room

NJ - Tentatively identified compound, estimated concentration

[redacted]

GTEH Analytical Results Summary
August 1 - 11, 2010

SampleDate	SampleTime	Samp_No	Analyte	Result	Result_Units	Lab_Result_Qualifier	Location
8/5/2010	17:56	MAMI0805MC029	BENZENE, 1,2-DIETHYL-	6	PPBV	NJ	Inside / Office
8/9/2010	19:20	MAMI0809MC037	BENZENE, 1,2-DIETHYL-	6.7	PPBV	NJ	Outside
8/11/2010	19:10	MAMI0811MC039	BUTANAL	9.6	PPBV	NJ	Outside
8/5/2010	17:56	MAMI0805MC029	BUTANE	35	PPBV	NJ	Inside / Office
8/5/2010	17:51	MAMI0805MC030	BUTANE	27	PPBV	NJ	Inside / Ed. Room
8/5/2010	17:56	MAMI0805MC029	ETHYL ALCOHOL	77	PPBV	NJ	Inside / Office
8/5/2010	17:51	MAMI0805MC030	ETHYL ALCOHOL	90	PPBV	NJ	Inside / Ed. Room
8/7/2010	10:51	MAMI0807MC033	ETHYL ALCOHOL	56	PPBV	NJ	Inside / Ed. Room
8/7/2010	10:49	MAMI0807MC034	ETHYL ALCOHOL	20	PPBV	NJ	Inside / Office
8/7/2010	10:51	MAMI0807MC033	HEXANAL	8.5	PPBV	NJ	Inside / Ed. Room
8/5/2010	17:56	MAMI0805MC029	ISOBUTANE	35	PPBV	NJ	Inside / Office
8/5/2010	17:51	MAMI0805MC030	ISOBUTANE	26	PPBV	NJ	Inside / Ed. Room
8/7/2010	10:51	MAMI0807MC033	NONANAL	10	PPBV	NJ	Inside / Ed. Room
8/7/2010	18:15	MAMI0807MC035	NONANAL	6.5	PPBV	NJ	Outside
8/5/2010	17:51	MAMI0805MC030	PROPANE	6.3	PPBV	NJ	Inside / Ed. Room

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Figure 1

Location of VOC Monitoring at [redacted] (To date)

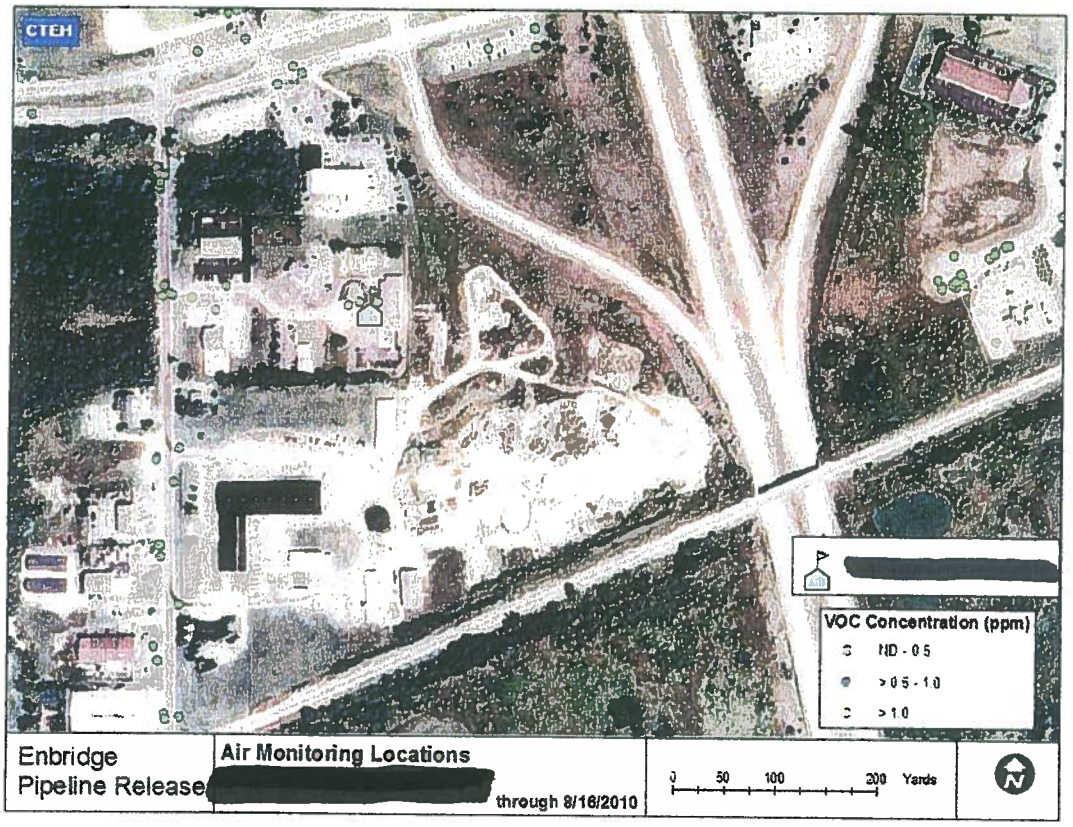

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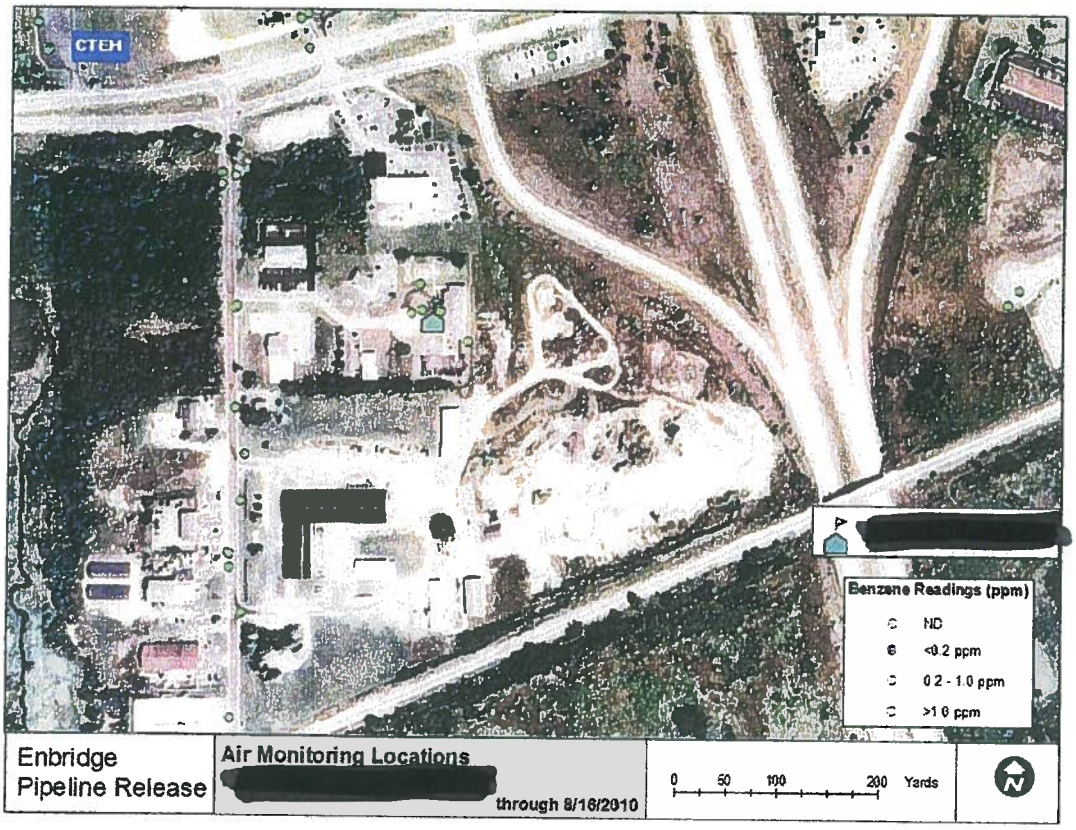
Figure 2

Location of Benzene Monitoring at [redacted] (To date)



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[redacted]

Summary of CTEH's Air Monitoring Activities for the [redacted]

August 16, 2010

Summary of Real-Time Data

CTEH performed air monitoring outside the [redacted] in response to concerns from the facility owner. Summaries of real-time readings for VOCs and benzene by day at the facility are shown in Tables 1 and 2, respectively. A summary of all real-time data to date is in Table 3. No benzene or VOC detections have been noted at this location.

Table 1
Summary of Outdoor Air VOC Data by Date

where are these tests?

Date	Total Number of Readings	Number of Detects	Geometric Mean of All Data (ppm)	Maximum Concentration (ppm)	Geometric Mean of Detects (ppm)
7/28/2010	3	0	<0.1	<0.1	<0.1
7/30/2010	4	0	<0.1	<0.1	<0.1
7/31/2010	7	0	<0.1	<0.1	<0.1
8/1/2010	4	0	<0.1	<0.1	<0.1
8/2/2010	9	0	<0.1	<0.1	<0.1
8/4/2010	2	0	<0.1	<0.1	<0.1
8/5/2010	4	0	<0.1	<0.1	<0.1
8/6/2010	5	0	<0.1	<0.1	<0.1
8/7/2010	4	0	<0.1	<0.1	<0.1
8/8/2010	5	0	<0.1	<0.1	<0.1
8/9/2010	4	0	<0.1	<0.1	<0.1
8/10/2010	6	0	<0.1	<0.1	<0.1
8/11/2010	5	0	<0.1	<0.1	<0.1
8/12/2010	8	0	<0.1	<0.1	<0.1
8/13/2010	9	0	<0.1	<0.1	<0.1
8/14/2010	5	0	<0.1	<0.1	<0.1
8/15/2010	8	0	<0.1	<0.1	<0.1
8/16/2010	7	0	<0.1	<0.1	<0.1

The first test was the well/water 7/31 and the first air result provided is dated 8/2, 8 days after spill.

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Table 2
Summary of Outdoor Air Benzene Data by Date

Date	Total Number of Readings	Number of Detects	Geometric Mean of All Data (ppm)	Maximum Concentration (ppm)	Geometric Mean of Detects (ppm)
7/30/2010	3	0	<0.1	<0.1	<0.1
7/31/2010	3	0	<0.1	<0.1	<0.1
8/1/2010	3	0	<0.1	<0.1	<0.1
8/2/2010	10	0	<0.1	<0.1	<0.1
8/5/2010	2	0	<0.1	<0.1	<0.1
8/6/2010	2	0	<0.1	<0.1	<0.1
8/8/2010	2	0	<0.1	<0.1	<0.1
8/9/2010	2	0	<0.1	<0.1	<0.1
8/10/2010	1	0	<0.1	<0.1	<0.1
8/11/2010	1	0	<0.1	<0.1	<0.1
8/12/2010	1	0	<0.1	<0.1	<0.1
8/13/2010	4	0	<0.1	<0.1	<0.1
8/14/2010	0	0	<0.1	<0.1	<0.1
8/15/2010	0	0	<0.1	<0.1	<0.1
8/16/2010	2	0	<0.1	<0.1	<0.1

Table 3
Summary of All Outdoor Air Real-Time Data To Date

Analytes	Total Number of Readings	Number of Detects	Geometric Mean Concentration (ppm)	Maximum Concentration (ppm)	Geometric Mean Concentration of Detects
Benzene	36	0	<0.1	<0.1	<0.1
Volatile Organic Compounds (VOCs)	99	0	<0.1	<0.1	<0.1
Total	**135**	**0**			

Discussion

No benzene or VOC detections have been noted at this location. In addition, a CTEH public health nurse, [redacted] monitored the air outside the facility for VOCs and benzene continuously for several hours on Thursday, August 5, 2010. No VOCs or benzene were detected. [redacted] also stayed in the front office area, where odors and symptoms had been reported by [redacted] most of the day on August 6, 2010. [redacted] reported that no unusual odors were detected, nor did she have any symptoms after being in the day care all day.

See Exh. 15-16. Test mAm1 0805mC029 - Benzene 6 Butane 35, Isobutane 35. On sheet provided to parents marked "modified" on Enbridge report, no modification, merely confirmed (see next 2 pages)

DOCUMENTS PROVIDED BY CTEH AT PARENT MEETING AUG. 17 AT [redacted]

CTEH stated "NO BENZENE OR VOC DETECTIONS HAVE BEEN NOTED AT THIS LOCATION"

See the following reports:

- 8/3/2010
  - TOLUENE
  - ACETALDEHYDE
- 8/5/2010
  - BENZENE, 1,2 DIETHYL
  - BUTANE
  - ETHYL ALCOHOL
  - ISOBUTANE
  - PROPANE
- 8/7/2010
  - ACETALDEHYDE
  - ETHYL ALCOHOL
  - HEXANAL
  - NONANAL
  - TOLUENE
- 8/9/2010
  - BENZENE, 1,2 DIETHYL
- 8/11/2010
  - BUTANAL

Provided at Parent meeting 8/17

Samp No.	Location Description	Sample Date
MAMI0801MC019	Outside Fence	1-Aug-10
MAMI0803MC024	Outside Fence	2-Aug-10
MAMI0803MC027	Outside Fence	3-Aug-10
MAMI0807MC033	Education Room	7-Aug-10
MAMI0807MC034	Office	7-Aug-10
MAMI0807MC035	Outside Fence	7-Aug-10
MAMI0805MC029	Office	5-Aug-10
MAMI0805MC030	Education Room	5-Aug-10
MAMI0805MC031	Outside Fence	5-Aug-10
MAMI0806MC032	Outside Fence	6-Aug-10
MAMI0808MC036	Outside Fence	8-Aug-10
MAMI0809MC037	Outside Fence	9-Aug-10
MAMI0804MC028	Outside Fence	4-Aug-10
MAMI0810MC038	Outside Fence	10-Aug-10
MAMI0811MC039	Outside Fence	11-Aug-10

Form 1 Data Sheet - Volatiles

Enbridge Energy

SDG: L220450

Sample Name: **MAMI0803MC027**
Location ID: **NA**
Sample Type: **Site Sample**
Lab Sample ID: **L220450-18**
Method: **MET6772**

Sample Matrix Code: **A**
Sample Date: **8/3/2010**
Analysis Date: **8/6/2010 2:40:00 PM**

Total/Dissolved: **T**
Lab: **GALSON**

CAS	Parameter Name	DF	RL	Lab Result	LabQual	Verified Result	Ver.Qual	Units	
100-42-5	STYRENE	1	5	5	U	5	U	PPBV	
100-42-5	STYRENE	1	0.021	0.021	U	0.021	U	MG/M3	
127-18-4	TETRACHLOROETHYLENE	1	5	5	U	5	U	PPBV	
127-18-4	TETRACHLOROETHYLENE	1	0.034	0.034	U	0.034	U	MG/M3	
109-99-9	TETRAHYDROFURAN	1	5	5	U	5	U	PPBV	
109-99-9	TETRAHYDROFURAN	1	0.015	0.015	U	0.015	U	MG/M3	
108-88-3	TOLUENE	1	5	5.9		5.9		PPBV	
108-88-3	TOLUENE	1	0.019	0.022		0.022		MG/M3	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	5	5	U	5	U	PPBV	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	0.02	0.02	U	0.02	U	MG/M3	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	5	5	U	5	U	PPBV	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	0.023	0.023	U	0.023	U	MG/M3	
79-01-6	TRICHLOROETHYLENE	1	5	5	U	5	U	PPBV	
79-01-6	TRICHLOROETHYLENE	1	0.027	0.027	U	0.027	U	MG/M3	
108-05-4	VINYL ACETATE	1	5	5	U	5	U	PPBV	
108-05-4	VINYL ACETATE	1	0.018	0.018	U	0.018	U	MG/M3	
593-60-2	VINYL BROMIDE	1	5	5	U	5	U	PPBV	
593-60-2	VINYL BROMIDE	1	0.022	0.022	U	0.022	U	MG/M3	
75-01-4	VINYL CHLORIDE	1	5	5	U	5	U	PPBV	
75-01-4	VINYL CHLORIDE	1	0.013	0.013	U	0.013	U	MG/M3	
000075-07-0	ACETALDEHYDE	1		20		20	NJ	PPBV	* TIC
000075-07-0	ACETALDEHYDE	1		0.036		0.036	NJ	MG/M3	* TIC

DF = Dilution Factor
RL = Reporting Limit
U = Non-Detect
J = Estimated
R = Rejected
N = Presumptive evidence
* = Modified by Validation

eDATApro Environmental Data Professional, LLC

CTEH

Air Sampling Results As Of 8/29/2010

ENBRIDGE

MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	VINYL CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,3-BUTADIENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	BROMOMETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	CHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	VINYL BROMIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	FREON 11	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	ISOPROPYL ALCOHOL	70 PPBV		42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	ACETONE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,1-DICHLOROETHENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	METHYLENE CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	FREON 113	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	ALLYL CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	CARBON DISULFIDE	10 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	TRANS-1,2-DICHLOROETHENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	METHYL TERTIARY BUTYL ETHER	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,1-DICHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	VINYL ACETATE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	METHYL ETHYL KETONE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	CIS-1,2-DICHLOROETHYLENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	HEXANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	ETHYL ACETATE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	CHLOROFORM	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	TETRAHYDROFURAN	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,2-DICHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,1,1-TRICHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	CYCLOHEXANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	CARBON TETRACHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	BENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,4-DIOXANE	20 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	2,2,4-TRIMETHYLPENTANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	HEPTANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,2-DICHLOROPROPANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	TRICHLOROETHYLENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	BROMODICHLOROMETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	CIS-1,3-DICHLOROPROPENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	TRANS-1,3-DICHLOROPROPENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,2-DIBROMOETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	TETRACHLOROETHYLENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	CHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	ETHYLBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	BROMOFORM	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	M,P-XYLENES	10 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	STYRENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	O-XYLENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,1,2,2-TETRACHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	4-ETHYLTOLUENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,3,5-TRIMETHYLBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,2,4-TRIMETHYLBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,3-DICHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	BENZYL CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,4-DICHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,2-DICHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	ACETALDEHYDE	20 PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	1,1,2-TRICHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	TOLUENE	5.9 PPBV		42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	DIBROMOCHLOROMETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	METHYL ISOBUTYL KETONE	20 PPBV	U	42.26696	-84.993362	Final	1
MAMI0803MC027	8/3/2010	17:50	MAMIODORGB020	Air	METHYL BUTYL KETONE	20 PPBV	U	42.26696	-84.993362	Final	1
OPSMONA20803MC008	8/3/2010	14:51	OPSMONLOCA2A	Air	1,4-DICHLOROBENZENE	5 PPBV	U	42.246201	84.97583	Final	1
OPSMONA20803MC008	8/3/2010	14:51	OPSMONLOCA2A	Air	1,2-DICHLOROBENZENE	5 PPBV	U	42.246201	84.97583	Final	1
OPSMONA20803MC008	8/3/2010	14:51	OPSMONLOCA2A	Air	BUTANE, 2-METHYL-	15 PPBV	NJ	42.246201	84.97583	Final	1
OPSMONA20803MC008	8/3/2010	14:51	OPSMONLOCA2A	Air	PENTANE	29 PPBV	NJ	42.246201	84.97583	Final	1
OPSMONA20803MC008	8/3/2010	14:51	OPSMONLOCA2A	Air	CYCLOBUTANE, METHYL-	7.6 PPBV	NJ	42.246201	84.97583	Final	1
OPSMONA20803MC008	8/3/2010	14:51	OPSMONLOCA2A	Air	CYCLOHEXANE, 1,3-DIMETHYL-, CIS-	7 PPBV	NJ	42.246201	84.97583	Final	1
OPSMONA20803MC008	8/3/2010	14:51	OPSMONLOCA2A	Air	OCTANE	7 PPBV	NJ	42.246201	84.97583	Final	1
OPSMONA30803MC009	8/3/2010	15:05	OPSMONLOCA3A	Air	PROPYLENE	5 PPBV	U	42.246273	-84.973358	Final	1

EXH-014

Form 1 Data Sheet - Volatiles

Enbridge

SDG: L220688

Sample Name: **MAMI0805MC029**
Location ID: **NA**
Sample Type: **Site Sample**
Lab Sample ID: **L220688-1**
Method: **MET6772**

Sample Matrix Code: **A**
Sample Date: **8/5/2010**
Analysis Date: **8/10/2010 8:58:00 PM**

Total/Dissolved: **T**
Lab: **GALSON**

CAS	Parameter Name	DF	RL	Lab Result	LabQual	Verified Result	Ver.Qual	Units	
100-42-5	STYRENE	1	5	5	U	5	U	PPBV	
100-42-5	STYRENE	1	0.021	0.021	U	0.021	U	MG/M3	
127-18-4	TETRACHLOROETHYLENE	1	5	5	U	5	U	PPBV	
127-18-4	TETRACHLOROETHYLENE	1	0.034	0.034	U	0.034	U	MG/M3	
109-99-9	TETRAHYDROFURAN	1	5	5	U	5	U	PPBV	
109-99-9	TETRAHYDROFURAN	1	0.015	0.015	U	0.015	U	MG/M3	
108-88-3	TOLUENE	1	5	5	U	5	U	PPBV	
108-88-3	TOLUENE	1	0.019	0.019	U	0.019	U	MG/M3	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	5	5	U	5	U	PPBV	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	0.02	0.02	U	0.02	U	MG/M3	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	5	5	U	5	U	PPBV	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	0.023	0.023	U	0.023	U	MG/M3	
79-01-6	TRICHLOROETHYLENE	1	5	5	U	5	U	PPBV	
79-01-6	TRICHLOROETHYLENE	1	0.027	0.027	U	0.027	U	MG/M3	
108-05-4	VINYL ACETATE	1	5	5	U	5	U	PPBV	
108-05-4	VINYL ACETATE	1	0.018	0.018	U	0.018	U	MG/M3	
593-60-2	VINYL BROMIDE	1	5	5	U	5	U	PPBV	
593-60-2	VINYL BROMIDE	1	0.022	0.022	U	0.022	U	MG/M3	
75-01-4	VINYL CHLORIDE	1	5	5	U	5	U	PPBV	
75-01-4	VINYL CHLORIDE	1	0.013	0.013	U	0.013	U	MG/M3	
000135-01-3	BENZENE, 1,2-DIETHYL-	1		6		6	NJ	PPBV	* TIC
000135-01-3	BENZENE, 1,2-DIETHYL-	1		0.033		0.033	NJ	MG/M3	* TIC
000106-97-8	BUTANE	1		35		35	NJ	PPBV	* TIC
000106-97-8	BUTANE	1		0.084		0.084	NJ	MG/M3	* TIC
000064-17-5	ETHYL ALCOHOL	1		77		77	NJ	PPBV	* TIC
000064-17-5	ETHYL ALCOHOL	1		0.14		0.14	NJ	MG/M3	* TIC
000075-28-5	ISOBUTANE	1		35		35	NJ	PPBV	* TIC
000075-28-5	ISOBUTANE	1		0.082		0.082	NJ	MG/M3	* TIC

DF = Dilution Factor
RL = Reporting Limit
U = Non-Detect
J = Estimated
R = Rejected
N = Presumptive evidence
* = Modified by Validation

eDATApro Environmental Data Professional, LLC

CTEH

Air Sampling Results As Of 8/29/2010

ENBRIDGE

MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	ACETONE	16	PPBV		42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	1,1-DICHLOROETHENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	METHYLENE CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	FREON 113	5	PPBV	U	42.26696	-84.993382	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	ALLYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	CARBON DISULFIDE	10	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	TRANS-1,2-DICHLOROETHENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	METHYL TERTIARY BUTYL ETHER	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	1,1-DICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	VINYL ACETATE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	METHYL ETHYL KETONE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	CIS-1,2-DICHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	HEXANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	ETHYL ACETATE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	CHLOROFORM	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	BENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	1,4-DIOXANE	20	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:58	MAMIODORGB020	Air	2,2,4-TRIMETHYLPENTANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	HEPTANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	1,2-DICHLOROPROPANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	TOLUENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	DIBROMOCHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	METHYL ISOBUTYL KETONE	20	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	METHYL BUTYL KETONE	20	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	1,2-DIBROMOETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	TETRAHYDROFURAN	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	1,2-DICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	1,1,1-TRICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	CYCLOHEXANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	CARBON TETRACHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	TRICHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	BROMODICHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	CIS-1,3-DICHLOROPROPENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	TRANS-1,3-DICHLOROPROPENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:58	MAMIODORGB020	Air	1,1,2-TRICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	TETRACHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	CHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	ETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	BROMOFORM	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	M,P-XYLENES	10	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	STYRENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	O-XYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	1,1,2,2-TETRACHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	4-ETHYLTOLUENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	1,3,5-TRIMETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	ISOBUTANE	35	PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	BUTANE	35	PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	ETHYL ALCOHOL	77	PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	BENZENE, 1,2-DIETHYL-	6	PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	PROPYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	BROMOMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	CHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	VINYL BROMIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	FREON 11	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	ISOPROPYL ALCOHOL	60	PPBV		42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	ACETONE	17	PPBV		42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,1-DICHLOROETHENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	METHYLENE CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	FREON 113	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	ALLYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	METHYL ETHYL KETONE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	CIS-1,2-DICHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	HEXANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	ETHYL ACETATE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	CHLOROFORM	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	1,2,4-TRIMETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1

Form 1 Data Sheet - Volatiles

Enbridge

SDG: L220688

Sample Name: **MAMI0805MC030**
Location ID: **NA**
Sample Type: **Site Sample**
Lab Sample ID: **L220688-2**
Method: **MET6772**

Sample Matrix Code: **A**
Sample Date: **8/5/2010**
Analysis Date: **8/10/2010 10:23:00 PM**

Total/Dissolved: **T**
Lab: **GALSON**

CAS	Parameter Name	DF	RL	Lab Result	LabQual	Verified Result	Ver.Qual	Units	
100-42-5	STYRENE	1	5	5	U	5	U	PPBV	
100-42-5	STYRENE	1	0.021	0.021	U	0.021	U	MG/M3	
127-18-4	TETRACHLOROETHYLENE	1	5	5	U	5	U	PPBV	
127-18-4	TETRACHLOROETHYLENE	1	0.034	0.034	U	0.034	U	MG/M3	
109-99-9	TETRAHYDROFURAN	1	5	5	U	5	U	PPBV	
109-99-9	TETRAHYDROFURAN	1	0.015	0.015	U	0.015	U	MG/M3	
108-88-3	TOLUENE	1	5	5	U	5	U	PPBV	
108-88-3	TOLUENE	1	0.019	0.019	U	0.019	U	MG/M3	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	5	5	U	5	U	PPBV	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	0.02	0.02	U	0.02	U	MG/M3	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	5	5	U	5	U	PPBV	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	0.023	0.023	U	0.023	U	MG/M3	
79-01-6	TRICHLOROETHYLENE	1	5	5	U	5	U	PPBV	
79-01-6	TRICHLOROETHYLENE	1	0.027	0.027	U	0.027	U	MG/M3	
108-05-4	VINYL ACETATE	1	5	5	U	5	U	PPBV	
108-05-4	VINYL ACETATE	1	0.018	0.018	U	0.018	U	MG/M3	
593-60-2	VINYL BROMIDE	1	5	5	U	5	U	PPBV	
593-60-2	VINYL BROMIDE	1	0.022	0.022	U	0.022	U	MG/M3	
75-01-4	VINYL CHLORIDE	1	5	5	U	5	U	PPBV	
75-01-4	VINYL CHLORIDE	1	0.013	0.013	U	0.013	U	MG/M3	
000106-97-8	BUTANE	1		27		27	NJ	PPBV	* TIC
000106-97-8	BUTANE	1		0.063		0.063	NJ	MG/M3	* TIC
000064-17-5	ETHYL ALCOHOL	1		90		90	NJ	PPBV	* TIC
000064-17-5	ETHYL ALCOHOL	1		0.17		0.17	NJ	MG/M3	* TIC
000075-28-5	ISOBUTANE	1		26		26	NJ	PPBV	* TIC
000075-28-5	ISOBUTANE	1		0.062		0.062	NJ	MG/M3	* TIC
000074-98-6	PROPANE	1		6.3		6.3	NJ	PPBV	* TIC
000074-98-6	PROPANE	1		0.011		0.011	NJ	MG/M3	* TIC

DF = Dilution Factor
RL = Reporting Limit
U = Non-Detect
J = Estimated
R = Rejected
N = Presumptive evidence
* = Modified by Validation

eDATApro Environmental Data Professional, LLC

CTEH

Air Sampling Results As Of 8/29/2010

ENBRIDGE

MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	1,3-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	BENZYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	1,4-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC029	8/5/2010	17:56	MAMIODORGB020	Air	1,2-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	FREON 12	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	CHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	FREON 114	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	VINYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,3-BUTADIENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	CARBON DISULFIDE	10	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	TRANS-1,2-DICHLOROETHENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	METHYL TERTIARY BUTYL ETHER	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,1-DICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	VINYL ACETATE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	TETRAHYDROFURAN	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,2-DICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,1,1-TRICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	CYCLOHEXANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	CARBON TETRACHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	TRICHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	BROMODICHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	CIS-1,3-DICHLOROPROPENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	TRANS-1,3-DICHLOROPROPENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,1,2-TRICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	TETRACHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	CHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	ETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	BROMOFORM	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	M,P-XYLENES	10	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,2,4-TRIMETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,3-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	BENZYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,4-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,2-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	PROPANE	6.3	PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	ISOBUTANE	26	PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	BUTANE	27	PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	ETHYL ALCOHOL	90	PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0805MC031	8/5/2010	18:25	MAMIODORGB020	Air	PROPYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	BENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,4-DIOXANE	20	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	2,2,4-TRIMETHYLPENTANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	HEPTANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,2-DICHLOROPROPANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	TOLUENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	DIBROMOCHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	METHYL ISOBUTYL KETONE	20	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	METHYL BUTYL KETONE	20	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,2-DIBROMOETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	STYRENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	O-XYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,1,2,2-TETRACHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	4-ETHYLTOLUENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC030	8/5/2010	17:51	MAMIODORGB020	Air	1,3,5-TRIMETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC031	8/5/2010	18:25	MAMIODORGB020	Air	FREON 12	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC031	8/5/2010	18:25	MAMIODORGB020	Air	CHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC031	8/5/2010	18:25	MAMIODORGB020	Air	FREON 114	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC031	8/5/2010	18:25	MAMIODORGB020	Air	VINYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC031	8/5/2010	18:25	MAMIODORGB020	Air	1,3-BUTADIENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC031	8/5/2010	18:25	MAMIODORGB020	Air	ACETONE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC031	8/5/2010	18:25	MAMIODORGB020	Air	1,1-DICHLOROETHENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC031	8/5/2010	18:25	MAMIODORGB020	Air	METHYLENE CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC031	8/5/2010	18:25	MAMIODORGB020	Air	FREON 113	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC031	8/5/2010	18:25	MAMIODORGB020	Air	ALLYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC031	8/5/2010	18:25	MAMIODORGB020	Air	METHYL ETHYL KETONE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0805MC031	8/5/2010	18:25	MAMIODORGB020	Air	CIS-1,2-DICHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1

EXH-018

Form 1 Data Sheet - Volatiles

Enbridge

SDG: L220685

Sample Name: **MAMI0807MC033**
Location ID: **NA**
Sample Type: **Site Sample**
Lab Sample ID: **L220685-1**
Method: **MET6772**

Sample Matrix Code: **A**
Sample Date: **8/7/2010**
Analysis Date: **8/10/2010 3:16:00 PM**

Total/Dissolved: **T**
Lab: **GALSON**

CAS	Parameter Name	DF	RL	Lab Result	LabQual	Verified Result	Ver.Qual	Units	
100-42-5	STYRENE	1	5	5	U	5	U	PPBV	
100-42-5	STYRENE	1	0.021	0.021	U	0.021	U	MG/M3	
127-18-4	TETRACHLOROETHYLENE	1	5	5	U	5	U	PPBV	
127-18-4	TETRACHLOROETHYLENE	1	0.034	0.034	U	0.034	U	MG/M3	
109-99-9	TETRAHYDROFURAN	1	5	5	U	5	U	PPBV	
109-99-9	TETRAHYDROFURAN	1	0.015	0.015	U	0.015	U	MG/M3	
108-88-3	TOLUENE	1	5	5	U	5	U	PPBV	
108-88-3	TOLUENE	1	0.019	0.019	U	0.019	U	MG/M3	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	5	5	U	5	U	PPBV	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	0.02	0.02	U	0.02	U	MG/M3	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	5	5	U	5	U	PPBV	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	0.023	0.023	U	0.023	U	MG/M3	
79-01-6	TRICHLOROETHYLENE	1	5	5	U	5	U	PPBV	
79-01-6	TRICHLOROETHYLENE	1	0.027	0.027	U	0.027	U	MG/M3	
108-05-4	VINYL ACETATE	1	5	5	U	5	U	PPBV	
108-05-4	VINYL ACETATE	1	0.018	0.018	U	0.018	U	MG/M3	
593-60-2	VINYL BROMIDE	1	5	5	U	5	U	PPBV	
593-60-2	VINYL BROMIDE	1	0.022	0.022	U	0.022	U	MG/M3	
75-01-4	VINYL CHLORIDE	1	5	5	U	5	U	PPBV	
75-01-4	VINYL CHLORIDE	1	0.013	0.013	U	0.013	U	MG/M3	
000075-07-0	ACETALDEHYDE	1		7.5		7.5	NJ	PPBV	* TIC
000075-07-0	ACETALDEHYDE	1		0.014		0.014	NJ	MG/M3	* TIC
000064-17-5	ETHYL ALCOHOL	1		56		56	NJ	PPBV	* TIC
000064-17-5	ETHYL ALCOHOL	1		0.1		0.1	NJ	MG/M3	* TIC
000066-25-1	HEXANAL	1		8.5		8.5	NJ	PPBV	* TIC
000066-25-1	HEXANAL	1		0.035		0.035	NJ	MG/M3	* TIC
000124-19-6	NONANAL	1		10		10	NJ	PPBV	* TIC
000124-19-6	NONANAL	1		0.06		0.06	NJ	MG/M3	* TIC

DF = Dilution Factor
RL = Reporting Limit
U = Non-Detect
J = Estimated
R = Rejected
N = Presumptive evidence
* = Modified by Validation

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Air Sampling Results As Of 8/29/2010

ENBRIDGE

COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	ETHYL BENZENE	5 UG	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	ETHYL BENZENE	0.04 PPM	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	M-DICHLOROBENZENE	5 UG	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	M-DICHLOROBENZENE	0.03 PPM	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	TOLUENE	5 UG	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	TOLUENE	0.05 PPM	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	XYLENE	15 UG	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	XYLENE	0.12 PPM	U	42.281656	-84.65425	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	ETHYL ALCOHOL	56 PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	HEXANAL	8.5 PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	NONANAL	10 PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	PROPYLENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	FREON 12	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CHLOROMETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	FREON 114	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	VINYL CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,3-BUTADIENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	ACETONE	24 PPBV		42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,1-DICHLOROETHENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	METHYLENE CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	FREON 113	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	ALLYL CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	METHYL ETHYL KETONE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CIS-1,2-DICHLOROETHYLENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	HEXANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	ETHYL ACETATE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CHLOROFORM	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,2,4-TRIMETHYLBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,3-DICHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	BENZYL CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,4-DICHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,2-DICHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	BROMOMETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	VINYL BROMIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	FREON 11	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	ISOPROPYL ALCOHOL	12 PPBV		42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CARBON DISULFIDE	10 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	TRANS-1,2-DICHLOROETHENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	METHYL TERTIARY BUTYL ETHER	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,1-DICHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	VINYL ACETATE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	TETRAHYDROFURAN	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,2-DICHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,1,1-TRICHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CYCLOHEXANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CARBON TETRACHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	BENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,4-DIOXANE	20 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	2,2,4-TRIMETHYLPENTANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	HEPTANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,2-DICHLOROPROPANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	TOLUENE	15 PPBV		42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	DIBROMOCHLOROMETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	METHYL ISOBUTYL KETONE	20 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	METHYL BUTYL KETONE	20 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,2-DIBROMOETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	STYRENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	O-XYLENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,1,2,2-TETRACHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	4-ETHYLTOLUENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,3,5-TRIMETHYLBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,2,4-TRIMETHYLBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,3-DICHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	BENZYL CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,4-DICHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1

MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,4-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,2-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	NONANAL	6.5	PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	BROMOFORM	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	M,P-XYLENES	10	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	STYRENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	O-XYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,1,2,2-TETRACHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	PROPYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	FREON 12	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	FREON 114	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	VINYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,3-BUTADIENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	ACETONE	29	PPBV		42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,1-DICHLOROETHENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	METHYLENE CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	FREON 113	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	ALLYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	BROMOMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	VINYL BROMIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	FREON 11	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	ISOPROPYL ALCOHOL	22	PPBV		42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CARBON DISULFIDE	10	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	TRANS-1,2-DICHLOROETHENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	METHYL TERTIARY BUTYL ETHER	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,1-DICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	VINYL ACETATE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	TETRAHYDROFURAN	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,2-DICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,1,1-TRICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CYCLOHEXANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CARBON TETRACHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	TRICHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	BROMODICHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CIS-1,3-DICHLOROPROPENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	TRANS-1,3-DICHLOROPROPENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,1,2-TRICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	TETRACHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	ETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	BROMOFORM	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	M,P-XYLENES	10	PPBV	U	42.26696	-84.993362	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	PROPYLENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	FREON 12	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	CHLOROMETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	FREON 114	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	VINYL CHLORIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	1,3-BUTADIENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	BROMOMETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	CHLOROETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	VINYL BROMIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	FREON 113	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	ALLYL CHLORIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	CARBON DISULFIDE	10	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	TRANS-1,2-DICHLOROETHENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	METHYL TERTIARY BUTYL ETHER	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	FREON 11	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	ISOPROPYL ALCOHOL	7.6	PPBV		42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	ACETONE	12	PPBV		42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	1,1-DICHLOROETHENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	METHYLENE CHLORIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	1,1-DICHLOROETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	VINYL ACETATE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	METHYL ETHYL KETONE	5	PPBV	U	42.270795	-85.061345	Final	1

Form 1 Data Sheet - Volatiles

Enbridge

SDG: L220685

Sample Name: **MAMI0807MC034**
Location ID: **NA**
Sample Type: **Site Sample**
Lab Sample ID: **L220685-2**
Method: **MET6772**

Sample Matrix Code: **A**
Sample Date: **8/7/2010**
Analysis Date: **8/10/2010 4:00:00 PM**

Total/Dissolved: **T**
Lab: **GALSON**

CAS	Parameter Name	DF	RL	Lab Result	LabQual	Verified Result	Ver.Qual	Units	
100-42-5	STYRENE	1	5	5	U	5	U	PPBV	
100-42-5	STYRENE	1	0.021	0.021	U	0.021	U	MG/M3	
127-18-4	TETRACHLOROETHYLENE	1	5	5	U	5	U	PPBV	
127-18-4	TETRACHLOROETHYLENE	1	0.034	0.034	U	0.034	U	MG/M3	
109-99-9	TETRAHYDROFURAN	1	5	5	U	5	U	PPBV	
109-99-9	TETRAHYDROFURAN	1	0.015	0.015	U	0.015	U	MG/M3	
108-88-3	TOLUENE	1	5	15		15		PPBV	
108-88-3	TOLUENE	1	0.019	0.057		0.057		MG/M3	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	5	5	U	5	U	PPBV	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	0.02	0.02	U	0.02	U	MG/M3	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	5	5	U	5	U	PPBV	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	0.023	0.023	U	0.023	U	MG/M3	
79-01-6	TRICHLOROETHYLENE	1	5	5	U	5	U	PPBV	
79-01-6	TRICHLOROETHYLENE	1	0.027	0.027	U	0.027	U	MG/M3	
108-05-4	VINYL ACETATE	1	5	5	U	5	U	PPBV	
108-05-4	VINYL ACETATE	1	0.018	0.018	U	0.018	U	MG/M3	
593-60-2	VINYL BROMIDE	1	5	5	U	5	U	PPBV	
593-60-2	VINYL BROMIDE	1	0.022	0.022	U	0.022	U	MG/M3	
75-01-4	VINYL CHLORIDE	1	5	5	U	5	U	PPBV	
75-01-4	VINYL CHLORIDE	1	0.013	0.013	U	0.013	U	MG/M3	
000064-17-5	ETHYL ALCOHOL	1		20		20	NJ	PPBV	* TIC
000064-17-5	ETHYL ALCOHOL	1		0.038		0.038	NJ	MG/M3	* TIC

DF = Dilution Factor
RL = Reporting Limit
U = Non-Detect
J = Estimated
R = Rejected
N = Presumptive evidence
* = Modified by Validation

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Air Sampling Results As Of 8/29/2010

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COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	ETHYL BENZENE	5 UG	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	ETHYL BENZENE	0.04 PPM	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	M-DICHLOROBENZENE	5 UG	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	M-DICHLOROBENZENE	0.03 PPM	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	TOLUENE	5 UG	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	TOLUENE	0.05 PPM	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	XYLENE	15 UG	U	42.281656	-84.65425	Final	1
COMI0807BE197	8/7/2010	11:01	MAMIASLOC006	Air	XYLENE	0.12 PPM	U	42.281656	-84.65425	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	ETHYL ALCOHOL	56 PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	HEXANAL	8.5 PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	NONANAL	10 PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	PROPYLENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	FREON 12	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CHLOROMETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	FREON 114	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	VINYL CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,3-BUTADIENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	ACETONE	24 PPBV		42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,1-DICHLOROETHENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	METHYLENE CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	FREON 113	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	ALLYL CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	METHYL ETHYL KETONE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CIS-1,2-DICHLOROETHYLENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	HEXANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	ETHYL ACETATE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CHLOROFORM	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,2,4-TRIMETHYLBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,3-DICHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	BENZYL CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,4-DICHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,2-DICHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	BROMOMETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	VINYL BROMIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	FREON 11	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	ISOPROPYL ALCOHOL	12 PPBV		42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CARBON DISULFIDE	10 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	TRANS-1,2-DICHLOROETHENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	METHYL TERTIARY BUTYL ETHER	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,1-DICHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	VINYL ACETATE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	TETRAHYDROFURAN	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,2-DICHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,1,1-TRICHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CYCLOHEXANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CARBON TETRACHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	BENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,4-DIOXANE	20 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	2,2,4-TRIMETHYLPENTANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	HEPTANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,2-DICHLOROPROPANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	TOLUENE	15 PPBV		42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	DIBROMOCHLOROMETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	METHYL ISOBUTYL KETONE	20 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	METHYL BUTYL KETONE	20 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,2-DIBROMOETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	STYRENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	O-XYLENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,1,2,2-TETRACHLOROETHANE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	4-ETHYLTOLUENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,3,5-TRIMETHYLBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,2,4-TRIMETHYLBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,3-DICHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	BENZYL CHLORIDE	5 PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,4-DICHLOROBENZENE	5 PPBV	U	42.26696	-84.993362	Final	1

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Air Sampling Results As Of 8/29/2010

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MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,2-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	TRICHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	BROMODICHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CIS-1,3-DICHLOROPROPENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	TRANS-1,3-DICHLOROPROPENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	1,1,2-TRICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	TETRACHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	CHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	ETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	BROMOFORM	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	M,P-XYLENES	10	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC034	8/7/2010	10:49	MAMIODORGB020	Air	ETHYL ALCOHOL	20	PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	PROPYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	FREON 12	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	CHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	FREON 114	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	VINYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,3-BUTADIENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	BROMOMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	CHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	VINYL BROMIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	FREON 113	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	ALLYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	CARBON DISULFIDE	10	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	TRANS-1,2-DICHLOROETHENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	METHYL TERTIARY BUTYL ETHER	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,1-DICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	VINYL ACETATE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	METHYL ETHYL KETONE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	CIS-1,2-DICHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	HEXANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	CYCLOHEXANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	CARBON TETRACHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	BENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,4-DIOXANE	20	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	2,2,4-TRIMETHYLPENTANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	TRANS-1,3-DICHLOROPROPENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,1,2-TRICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	TOLUENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	DIBROMOCHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	METHYL ISOBUTYL KETONE	20	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	FREON 11	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	ISOPROPYL ALCOHOL	29	PPBV		42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	ACETONE	17	PPBV		42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,1-DICHLOROETHENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	METHYLENE CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	ETHYL ACETATE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	CHLOROFORM	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	TETRAHYDROFURAN	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,2-DICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,1,1-TRICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	HEPTANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,2-DICHLOROPROPANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	TRICHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	BROMODICHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	CIS-1,3-DICHLOROPROPENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	METHYL BUTYL KETONE	20	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,2-DIBROMOETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	TETRACHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	CHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	ETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	4-ETHYLTOLUENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,3,5-TRIMETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,2,4-TRIMETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,3-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	BENZYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1

Form 1 Data Sheet - Volatiles

Enbridge

SDG: L220685

Sample Name: **MAMI0807MC035**
Location ID: **NA**
Sample Type: **Site Sample**
Lab Sample ID: **L220685-3**
Method: **MET6772**

Sample Matrix Code: **A**
Sample Date: **8/7/2010**
Analysis Date: **8/10/2010 4:44:00 PM**

Total/Dissolved: **T**
Lab: **GALSON**

CAS	Parameter Name	DF	RL	Lab Result	LabQual	Verified Result	Ver.Qual	Units	
100-42-5	STYRENE	1	5	5	U	5	U	PPBV	
100-42-5	STYRENE	1	0.021	0.021	U	0.021	U	MG/M3	
127-18-4	TETRACHLOROETHYLENE	1	5	5	U	5	U	PPBV	
127-18-4	TETRACHLOROETHYLENE	1	0.034	0.034	U	0.034	U	MG/M3	
109-99-9	TETRAHYDROFURAN	1	5	5	U	5	U	PPBV	
109-99-9	TETRAHYDROFURAN	1	0.015	0.015	U	0.015	U	MG/M3	
108-88-3	TOLUENE	1	5	5	U	5	U	PPBV	
108-88-3	TOLUENE	1	0.019	0.019	U	0.019	U	MG/M3	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	5	5	U	5	U	PPBV	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	0.02	0.02	U	0.02	U	MG/M3	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	5	5	U	5	U	PPBV	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	0.023	0.023	U	0.023	U	MG/M3	
79-01-6	TRICHLOROETHYLENE	1	5	5	U	5	U	PPBV	
79-01-6	TRICHLOROETHYLENE	1	0.027	0.027	U	0.027	U	MG/M3	
108-05-4	VINYL ACETATE	1	5	5	U	5	U	PPBV	
108-05-4	VINYL ACETATE	1	0.018	0.018	U	0.018	U	MG/M3	
593-60-2	VINYL BROMIDE	1	5	5	U	5	U	PPBV	
593-60-2	VINYL BROMIDE	1	0.022	0.022	U	0.022	U	MG/M3	
75-01-4	VINYL CHLORIDE	1	5	5	U	5	U	PPBV	
75-01-4	VINYL CHLORIDE	1	0.013	0.013	U	0.013	U	MG/M3	
000124-19-6	NONANAL	1		6.5		6.5	NJ	PPBV	* TIC
000124-19-6	NONANAL	1		0.038		0.038	NJ	MG/M3	* TIC

DF = Dilution Factor
RL = Reporting Limit
U = Non-Detect
J = Estimated
R = Rejected
N = Presumptive evidence
* = Modified by Validation

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MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,4-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,2-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	NONANAL	6.5	PPBV	NJ	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	BROMOFORM	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	M,P-XYLENES	10	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	STYRENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	O-XYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC035	8/7/2010	18:15	MAMIODORGB020	Air	1,1,2,2-TETRACHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	PROPYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	FREON 12	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	FREON 114	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	VINYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,3-BUTADIENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	ACETONE	29	PPBV		42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,1-DICHLOROETHENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	METHYLENE CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	FREON 113	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	ALLYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	BROMOMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	VINYL BROMIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	FREON 11	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	ISOPROPYL ALCOHOL	22	PPBV		42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CARBON DISULFIDE	10	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	TRANS-1,2-DICHLOROETHENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	METHYL TERTIARY BUTYL ETHER	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,1-DICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	VINYL ACETATE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	TETRAHYDROFURAN	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,2-DICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,1,1-TRICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CYCLOHEXANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CARBON TETRACHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	TRICHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	BROMODICHLOROMETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CIS-1,3-DICHLOROPROPENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	TRANS-1,3-DICHLOROPROPENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	1,1,2-TRICHLOROETHANE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	TETRACHLOROETHYLENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	CHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	ETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	BROMOFORM	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0807MC033	8/7/2010	10:51	MAMIODORGB020	Air	M,P-XYLENES	10	PPBV	U	42.26696	-84.993362	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	PROPYLENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	FREON 12	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	CHLOROMETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	FREON 114	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	VINYL CHLORIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	1,3-BUTADIENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	BROMOMETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	CHLOROETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	VINYL BROMIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	FREON 113	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	ALLYL CHLORIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	CARBON DISULFIDE	10	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	TRANS-1,2-DICHLOROETHENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	METHYL TERTIARY BUTYL ETHER	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	FREON 11	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	ISOPROPYL ALCOHOL	7.6	PPBV		42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	ACETONE	12	PPBV		42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	1,1-DICHLOROETHENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	METHYLENE CHLORIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	1,1-DICHLOROETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	VINYL ACETATE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0807MC009	8/7/2010	23:15	MAMIODORGB018	Air	METHYL ETHYL KETONE	5	PPBV	U	42.270795	-85.061345	Final	1

Form 1 Data Sheet - Volatiles

Enbridge

SDG: L220882

Sample Name: **MAMI0809MC037**
Location ID: **NA**
Sample Type: **Site Sample**
Lab Sample ID: **L220882-1**
Method: **MET6772**

Sample Matrix Code: **A**
Sample Date: **8/9/2010**
Analysis Date: **8/12/2010 3:50:00 PM**

Total/Dissolved: **T**
Lab: **GALSON**

CAS	Parameter Name	DF	RL	Lab Result	LabQual	Verified Result	Ver.Qual	Units	
100-42-5	STYRENE	1	5	5	U	5	U	PPBV	
100-42-5	STYRENE	1	0.021	0.021	U	0.021	U	MG/M3	
127-18-4	TETRACHLOROETHYLENE	1	5	5	U	5	U	PPBV	
127-18-4	TETRACHLOROETHYLENE	1	0.034	0.034	U	0.034	U	MG/M3	
109-99-9	TETRAHYDROFURAN	1	5	5	U	5	U	PPBV	
109-99-9	TETRAHYDROFURAN	1	0.015	0.015	U	0.015	U	MG/M3	
108-88-3	TOLUENE	1	5	5	U	5	U	PPBV	
108-88-3	TOLUENE	1	0.019	0.019	U	0.019	U	MG/M3	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	5	5	U	5	U	PPBV	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	0.02	0.02	U	0.02	U	MG/M3	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	5	5	U	5	U	PPBV	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	0.023	0.023	U	0.023	U	MG/M3	
79-01-6	TRICHLOROETHYLENE	1	5	5	U	5	U	PPBV	
79-01-6	TRICHLOROETHYLENE	1	0.027	0.027	U	0.027	U	MG/M3	
108-05-4	VINYL ACETATE	1	5	5	U	5	U	PPBV	
108-05-4	VINYL ACETATE	1	0.018	0.018	U	0.018	U	MG/M3	
593-60-2	VINYL BROMIDE	1	5	5	U	5	U	PPBV	
593-60-2	VINYL BROMIDE	1	0.022	0.022	U	0.022	U	MG/M3	
75-01-4	VINYL CHLORIDE	1	5	5	U	5	U	PPBV	
75-01-4	VINYL CHLORIDE	1	0.013	0.013	U	0.013	U	MG/M3	
000135-01-3	BENZENE, 1,2-DIETHYL-	1		6.7		6.7	NJ	PPBV	* TIC
000135-01-3	BENZENE, 1,2-DIETHYL-	1		0.036		0.036	NJ	MG/M3	* TIC

DF = Dilution Factor
RL = Reporting Limit
U = Non-Detect
J = Estimated
R = Rejected
N = Presumptive evidence
* = Modified by Validation

eDATApro Environmental Data Professional, LLC

CTEH

Air Sampling Results As Of 8/29/2010

ENBRIDGE™

MAMI0809MC037	8/9/2010	18:20	MAMIODORGB020	Air	1,2-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0809MC037	8/9/2010	18:20	MAMIODORGB020	Air	BENZENE, 1,2-DIETHYL-	6.7	PPBV	NJ	42.26696	-84.993362	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	PROPYLENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	FREON 12	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	CHLOROETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	VINYL BROMIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	FREON 11	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	ISOPROPYL ALCOHOL	35	PPBV		42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	ACETONE	19	PPBV		42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	1,1-DICHLOROETHENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	METHYLENE CHLORIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	FREON 113	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	ALLYL CHLORIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	CARBON DISULFIDE	10	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	TRANS-1,2-DICHLOROETHENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	METHYL TERTIARY BUTYL ETHER	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	1,1-DICHLOROETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	VINYL ACETATE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	METHYL ETHYL KETONE	5	PPBV	U	42.270795	-85.061345	Final	1
MAMI0809MC037	8/9/2010	18:20	MAMIODORGB020	Air	4-ETHYLTOLUENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0809MC037	8/9/2010	18:20	MAMIODORGB020	Air	1,3,5-TRIMETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0809MC037	8/9/2010	18:20	MAMIODORGB020	Air	1,2,4-TRIMETHYLBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0809MC037	8/9/2010	18:20	MAMIODORGB020	Air	1,3-DICHLOROBENZENE	5	PPBV	U	42.26696	-84.993362	Final	1
MAMI0809MC037	8/9/2010	18:20	MAMIODORGB020	Air	BENZYL CHLORIDE	5	PPBV	U	42.26696	-84.993362	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	CHLOROMETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	FREON 114	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	VINYL CHLORIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	1,3-BUTADIENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	BROMOMETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	CIS-1,2-DICHLOROETHYLENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	HEXANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	ETHYL ACETATE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	CHLOROFORM	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	TETRAHYDROFURAN	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	1,4-DIOXANE	20	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	2,2,4-TRIMETHYLPENTANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	HEPTANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	1,2-DICHLOROPROPANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	TRICHLOROETHYLENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	BROMODICHLOROMETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	CIS-1,3-DICHLOROPROPENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	TRANS-1,3-DICHLOROPROPENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	1,1,2-TRICHLOROETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	TOLUENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	DIBROMOCHLOROMETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	METHYL ISOBUTYL KETONE	20	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	METHYL BUTYL KETONE	20	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	1,2-DIBROMOETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	TETRACHLOROETHYLENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	CHLOROBENZENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	ETHYLBENZENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	BROMOFORM	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	M,P-XYLENES	10	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	STYRENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	1,3-DICHLOROBENZENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	BENZYL CHLORIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	1,4-DICHLOROBENZENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	1,2-DICHLOROBENZENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	ACETALDEHYDE	5.2	PPBV	NJ	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	1,2-DICHLOROETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	1,1,1-TRICHLOROETHANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	CYCLOHEXANE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	CARBON TETRACHLORIDE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	BENZENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	O-XYLENE	5	PPBV	U	42.270795	-85.061345	Final	1
ONBCMI0809MC013	8/9/2010	23:20	MAMIODORGB018	Air	1,1,2,2-TETRACHLOROETHANE	5	PPBV	U	42.270795	-85.061345	Final	1

Form 1 Data Sheet - Volatiles

Enbridge

SDG: L221092

Sample Name: **MAMI0811MC039**
Location ID: **NA**
Sample Type: **Site Sample**
Lab Sample ID: **L221092-1**
Method: **MET6772**

Sample Matrix Code: **A**
Sample Date: **8/11/2010**
Analysis Date: **8/14/2010 7:01:00 PM**

Total/Dissolved: **T**
Lab: **GALSON**

CAS	Parameter Name	DF	RL	Lab Result	LabQual	Verified Result	Ver.Qual	Units	
100-42-5	STYRENE	1	5	5	U	5	U	PPBV	
100-42-5	STYRENE	1	0.021	0.021	U	0.021	U	MG/M3	
127-18-4	TETRACHLOROETHYLENE	1	5	5	U	5	U	PPBV	
127-18-4	TETRACHLOROETHYLENE	1	0.034	0.034	U	0.034	U	MG/M3	
109-99-9	TETRAHYDROFURAN	1	5	5	U	5	U	PPBV	
109-99-9	TETRAHYDROFURAN	1	0.015	0.015	U	0.015	U	MG/M3	
108-88-3	TOLUENE	1	5	5	U	5	U	PPBV	
108-88-3	TOLUENE	1	0.019	0.019	U	0.019	U	MG/M3	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	5	5	U	5	U	PPBV	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	0.02	0.02	U	0.02	U	MG/M3	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	5	5	U	5	U	PPBV	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	0.023	0.023	U	0.023	U	MG/M3	
79-01-6	TRICHLOROETHYLENE	1	5	5	U	5	U	PPBV	
79-01-6	TRICHLOROETHYLENE	1	0.027	0.027	U	0.027	U	MG/M3	
108-05-4	VINYL ACETATE	1	5	5	U	5	U	PPBV	
108-05-4	VINYL ACETATE	1	0.018	0.018	U	0.018	U	MG/M3	
593-60-2	VINYL BROMIDE	1	5	5	U	5	U	PPBV	
593-60-2	VINYL BROMIDE	1	0.022	0.022	U	0.022	U	MG/M3	
75-01-4	VINYL CHLORIDE	1	5	5	U	5	U	PPBV	
75-01-4	VINYL CHLORIDE	1	0.013	0.013	U	0.013	U	MG/M3	
000123-72-8	BUTANAL	1		9.6		9.6	NJ	PPBV	* TIC
000123-72-8	BUTANAL	1		0.028		0.028	NJ	MG/M3	* TIC

DF = Dilution Factor
RL = Reporting Limit
U = Non-Detect
J = Estimated
R = Rejected
N = Presumptive evidence
* = Modified by Validation

eDATApro Environmental Data Professional, LLC

From: Graan, Thomas P. <Thomas.Graan@WestonSolutions.com>
To: Susan Connolly, Marshall, MI [redacted]
Cc: Deblasio.Don@epamail.epa.gov <Deblasio.Don@epamail.epa.gov>
Subject: RE: Request for detailed air quality results - [redacted]
Date: Fri, Aug 27, 2010 7:44 am
Attachments: [redacted]

Ms. Connolly,
Attached is an Excel spreadsheet with all of the chemical data to date for samples collected at [redacted] It includes results from air samples and a potable water sample. If you have any further questions please contact Don DeBlasio or me.

Tom Graan

Thomas Graan
Weston Solutions, Inc
email: Thomas.Graan@westonsolutions.com
phone: 847-918-4142
fax: 847-918-4055

From: Susan Connolly, Marshall, MI [redacted]
Sent: Thursday, August 26, 2010 4:29 PM
To: Deblasio.Don@epamail.epa.gov; Graan, Thomas P.
Cc: [redacted] svandorsten@calhouncountymi.gov; Pastor.Susan@epamail.epa.gov
Subject: Re: Request for detailed air quality results - [redacted]

Messers DeBlasio and Graan:

Thank you so much for responding to my message(s) today.

Mr. Graan: Please let me know at your earliest convenience when we can expect receipt of the reports and how they will be delivered (via email or mail). If you have any questions please do not hesitate to call or email.

Susan Connolly
[redacted]

-----Original Message-----
From: Deblasio.Don@epamail.epa.gov
To: Susan Connolly, Marshall, M[redacted]
Cc: jlstacho@cablespeed.com; svandorsten@calhouncountymi.gov; Thomas.Graan@WestonSolutions.com; Pastor.Susan@epamail.epa.gov
Sent: Thu, Aug 26, 2010 4:20 pm
Subject: Re: Request for detailed air quality results - [redacted]

We think we have the information you are looking for.

One of our contractors, Tom Graan, is collecting it and will be sending it to you [he is cc'd on this message].

If we didn't get you what you want, send me another message and we'll try again.

-----"Susan Connolly, Marshall, MI" [redacted]----

To: Don Deblasio/R5/USEPA/US@EPA
From: "Susan Connolly, Marshall, MI" [redacted]
Date: 08/25/2010 12:58PM
cc: jlstacho@cablespeed.com, svandorsten@calhouncountymi.gov
Subject: Request for detailed air quality results - [redacted]

Mr. Deblasio:

Good afternoon. This email is in follow up to our meeting of Tuesday, August 17 and our telephone conversation of Wednesday, August 18.

Kindly advise as to the status of the "complete" air quality tests performed by ALL entities (i.e. EPA, C-TEH, etc,) as of July 28 to the present at [redacted] located a[redacted] Marshall. We request detailed testing reports reflecting all VOC's, not just Benzene results, including testing performed by all companies, not just C-TEH both outdoors and indoors.

I have viewed the air quality testing reports on Google Earth and they are very confusing to track to say the least. Many of the references f[redacted] either do not allow you to open any report or you can only view Benzene results.

I can print/view the detailed chart/results from the EPA site - if you could provide the location description(s) for [redacted] then I will see of they have been posted.

As of our conversation last week you indicated that the tests were "misplaced" or documented incorrectly and they would have to be "tracked down".

Please contact me at your earliest possible convenience as to the reports. Thank you in advance for your time and continued courtesies in this regard.

Susan Connolly
[redacted]

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LocationDe	Matrix	Analyte	Detec	Result	Result_	Lab_I	QA_Cor	Samples_Sit	Samples_Samp_No	SampleDat	Sample	SampleMedia	SampleCollection
[redacted]	Grounc	Benzene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Toluene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Ethylbenzene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	p&m-Xylene	N	2 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	o-Xylene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	1,3,5-Trimethylbenzene	N	2 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	1,2,4-Trimethylbenzene	N	2 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Naphthalene	N	5 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	2-Methylnaphthalene	N	5 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Total Purgable Organics	N	100 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Naphthalene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	2-Methylnaphthalene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Acenaphthylene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Acenaphthene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Fluorene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Phenanthrene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Anthracene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Fluoranthene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Pyrene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Benzo (a) anthracene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Chrysene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Benzo (b) fluoranthene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Benzo (k) fluoranthene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Benzo (a) pyrene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Indeno (1,2,3-cd) pyrene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Dibenzo (a,h) anthracene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Benzo (g,h,i) perylene	N	1 ug/L		U	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Grounc	Total Extractable Organics (C	N	100 ug/L		u	Final	CTEH_40005	WP07311055RFB1	7/31/2010	10:55	Potable Water	Grab
	Air	BENZENE	Y	2 ppbv			Prelimin.	EPA_EOS	EOS-TB-B01-080210-T9a	8/2/2010	16:42	Tedlar Bag	
	AIR	BENZENE	Y	4.5 ppbv			Final	EPA_EOS	EOS-TB-B01-080210-T3p	8/2/2010	20:59	Tedlar Bag	
	Air	Dichlorodifluoromethane	Y	1.2 ug/m3			FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	Benzyl chloride	N	0.94 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	1,2,4-Trichlorobenzene	N	2.2 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	Hexachloro-1,3-butadiene	N	1.5 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	Methylene chloride	Y	1.6 ug/m3			FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	Acetonitrile	Y	5.1 ug/m3			FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	1,1,1-Trichloroethane	N	1.6 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	1,1,2,2-Tetrachloroethane	N	2 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	1,1,2-Trichloro-1,2,2-trifluoroe	N	2.2 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	1,1,2-Trichloroethane	N	1.6 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	1,1-Dichloroethane	N	1.2 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	1,1-Dichloroethylene	N	1.2 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	1,2,4-Trimethylbenzene	N	1.4 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	1,2-Dibromoethane	N	2.3 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	1,2-Dichloro-1,1,2,2-Tetrafluor	N	2.1 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	1,2-Dichlorobenzene	N	1.8 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	1,2-Dichloroethane	N	1.2 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR
	Air	1,2-Dichloropropane	N	1.4 ug/m3		U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010	23:01	Summa Canister	24 HOUR

Highlighted show detects.

Air	1,3,5-Trimethylbenzene	N	1.4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	1,3-Butadiene	N	0.65 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	1,3-Dichlorobenzene	N	1.8 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	1,4-Dichlorobenzene	N	1.8 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	2,2,4-Trimethylpentane	N	1.4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	2-Chloro-1,3-butadiene	N	1.1 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Acrylonitrile	N	1.6 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Benzene	N	1.1 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Bromodichloromethane	N	1.5 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Bromoform	N	2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Bromomethane	N	3 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Carbon tetrachloride	N	1.1 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Chlorobenzene	N	1.8 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Chloroethane	N	1.4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Chloroform	N	0.77 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Chloromethane	N	1.4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	cis-1,2-Dichloroethylene	N	0.61 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	cis-1,3-Dichloropropylene	N	1.2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Dibromochloromethane	N	1.3 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Ethylbenzene	N	2.5 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Hexane	N	1.3 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	m & p - Xylene	N	3.1 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Methyl ethyl ketone	N	3.4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Methyl isobutyl ketone	N	1.3 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Methyltertiarybutylether	N	14 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	o-Xylene	N	4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Styrene	N	1 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Tetrachloroethylene	N	1.8 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Toluene	N	1.3 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	trans-1,2-Dichloroethylene	N	1.3 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	trans-1,3-Dichloropropylene	N	2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Trichloroethylene	N	1.1 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Trichlorofluoromethane	N	1.2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Vinyl chloride	N	1.3 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
Air	Acetone		1.2 ug/m3		FINAL	EPA_EOS	EOS-SC-B22-080210	8/2/2010 23:01	Summa Canister	24 HOUR
AIR	BENZENE	Y	5.3 ppbv		Final	EPA_EOS	EOS-TB-B01-080310-AST2a	8/3/2010 08:08	Tedlar Bag	
Air	BENZENE	Y	1 ppbv	U	Final	EPA_EOS	EOS-TB-B01-080310-T4p	8/3/2010 20:26	Tedlar Bag	
Air	Benzyl chloride	N	1.2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,2,4-Trichlorobenzene	N	1.2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Hexachloro-1,3-butadiene	N	2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Chloromethane	Y	0.85 ug/m3		FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Dichlorodifluoromethane	Y	1.7 ug/m3		FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Methylene chloride	Y	2.8 ug/m3		FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Acetonitrile	Y	4.2 ug/m3		FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,1,2,2-Tetrachloroethane	N	2.1 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,1,2-Trichloro-1,2,2-trifluoroe	N	2.3 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,1,2-Trichloroethane	N	1.4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,1-Dichloroethane	N	2.2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,1-Dichloroethylene	N	1.2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR

Air	1,2,4-Trimethylbenzene	N	1.6 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	2-Chloro-1,3-butadiene	N	2.3 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Acrylonitrile	N	2.1 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Benzene	N	1.8 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Bromodichloromethane	N	1.4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Bromoform	N	1.4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Bromomethane	N	0.65 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Carbon tetrachloride	N	1.8 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Chlorobenzene	N	1.8 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Chloroethane	N	1.4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Chloroform	N	1.1 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	cis-1,2-Dichloroethylene	N	1.6 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	cis-1,3-Dichloropropylene	N	1.1 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Dibromochloromethane	N	0.94 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Ethylbenzene	N	1.5 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Hexane	N	3 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	m & p - Xylene	N	1.1 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Methyl ethyl ketone	N	1.8 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Methyl isobutyl ketone	N	1.4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Methyltertiarybutylether	N	0.77 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	o-Xylene	N	1.4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Styrene	N	0.61 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Tetrachloroethylene	N	1.2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Toluene	N	1.3 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	trans-1,2-Dichloroethylene	N	2.5 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	trans-1,3-Dichloropropylene	N	1.5 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Trichloroethylene	N	1.3 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Trichlorofluoromethane	N	3.1 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Vinyl chloride	N	3.4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,1,1-Trichloroethane	N	1.3 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,2-Dibromoethane	N	2.2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,2-Dichloro-1,1,2,2-Tetrafluor	N	2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,2-Dichlorobenzene	N	1.6 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,2-Dichloroethane	N	2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,2-Dichloropropane	N	2.2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,3,5-Trimethylbenzene	N	1.6 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,3-Butadiene	N	1.2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,3-Dichlorobenzene	N	1.2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	1,4-Dichlorobenzene	N	2.2 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	2,2,4-Trimethylpentane	N	1.4 ug/m3	U	FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	Acetone		2.4 ug/m3		FINAL	EPA_EOS	EOS-SC-B24-080210	8/3/2010 07:30	Summa Canister	8 HOUR
Air	BENZENE	N	1 ppbv	U	Prelimin	EPA_EOS	EOS-TB-B01-080410-T9a	8/4/2010 14:34	Tedlar Bag	
Air	BENZENE	N	1 ppbv	U	Prelimin	EPA_EOS	EOS-TB-C05-080510-T2P	8/5/2010 21:41	Tedlar Bag	
Air	BENZENE	N	1 ppbv	U	Prelimin	EPA_EOS	EOS-TB-B01-080610-T2A	8/6/2010 09:06	Tedlar Bag	
AIR	BENZENE	N	1 ppbv	U	Prelimin	EPA_EOS	EOS-TB-C04-080610-T2p	8/6/2010 19:57	Tedlar Bag	
Air	BENZENE	N	0.5 ppbv	U	Final	EPA_EOS	EOS-TB-C04-080710-T2A	8/7/2010 13:48	Tedlar Bag	
AIR	BENZENE	N	0.5 ppbv	U	Final	EPA_EOS	EOS-TB-B07-080710-T2P	8/7/2010 20:42	Tedlar Bag	
Air	BENZENE	N	0.5 ppbv	U	Final	EPA_EOS	EOS-TB-B20-080910-T2P	8/9/2010 00:40	Tedlar Bag	
Air	BENZENE	N	0.5 ppbv	U	Final	EPA_EOS	EOS-TB-B63-080910-T2A	8/9/2010 16:33	Tedlar Bag	

Air	BENZENE	N	0.5	ppbv	U	Final	EPA_EOS	EOS-TB-B64-080910-T2P	8/9/2010 21:05	Tedlar Bag
Air	BENZENE	N	0.5	ppbv	U	Final	EPA_EOS	EOS-TB-B116-081010-T2A	8/10/2010 11:30	Tedlar Bag
Air	BENZENE	N	0.5	ppbv	U	Final	EPA_EOS	EOS-TB-B144-081110-T2P	8/11/2010 00:50	Tedlar Bag
Air	BENZENE	N	0.5	ppbv	U	Final	EPA_EOS	EOS-TB-B50-081110-T4A	8/11/2010 18:04	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Final	EPA_EOS	EOS-TB-B72-081210-T4A	8/12/2010 15:42	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Final	EPA_EOS	EOS-TB-B190-081210-T2P	8/12/2010 19:32	Tedlar Bag
AIR	BENZENE	N	1	ppbv	U	Final	EPA_EOS	EOS-TB-B94-081310-T4A	8/13/2010 11:06	Tedlar Bag
Air	BENZENE	Y	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B220-081310-T2P	8/13/2010 22:58	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Final	EPA_EOS	EOS-TB-B121-081410-AT4	8/14/2010 12:37	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Final	EPA_EOS	EOS-TB-B145-081410-T4P	8/14/2010 22:00	Tedlar Bag
Air	BENZENE	Y	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B180-081510-AT4	8/15/2010 10:07	Tedlar Bag
AIR	BENZENE	Y	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B203-081510-T4P	8/15/2010 22:01	Tedlar Bag
Air	BENZENE	Y	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B230-081610-AT4	8/16/2010 11:54	Tedlar Bag
Air	BENZENE	Y	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B237-081610-T4P	8/16/2010 20:51	Tedlar Bag
Air	BENZENE	Y	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B270-081710-AT4	8/17/2010 13:40	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B309-081810-AT4	8/18/2010 12:15	Tedlar Bag
Air	BENZENE	Y	1.7	ppbv		Prelimin	EPA_EOS	EOS-TB-B310-081810-T4P	8/18/2010 19:58	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B332-081910-AT4	8/19/2010 13:50	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B359-082010-AT4	8/20/2010 11:50	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B385-082110-AT4	8/21/2010 09:25	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B420-082110-T4P	8/21/2010 20:20	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B436-082210-AT4	8/22/2010 10:20	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B456-082310-T4P	8/23/2010 01:00	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B465-082310-AT4	8/23/2010 11:15	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B472-082310-T4P	8/23/2010 19:45	Tedlar Bag
Air	BENZENE	N	1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B494-082410-AT4	8/24/2010 11:30	Tedlar Bag
Air	BENZENE		1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B510-082410-T4P	8/24/2010 21:15	Tedlar Bag
Air	BENZENE		1	ppbv	U	Prelimin	EPA_EOS	EOS-TB-B527-082510-AT4	8/25/2010 11:14	Tedlar Bag

STATE OF MICHIGAN
DEPARTMENT OF COMMUNITY HEALTH
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

JANET OLSZEWSKI
DIRECTOR

September 8, 2010

Mr. James Rutherford, Health Officer
Calhoun County Public Health Department
190 East Michigan Avenue
Battle Creek, Michigan 49014

Mr. Rutherford:

At the request of the Calhoun County Public Health Department (CCPHD), I have reviewed the environmental data for air and well water samples collected at the [redacted] Marshall, Michigan. My comments and recommendations are provided below.

Background

On July 26, 2010, Enbridge Energy Partners, LLP (Enbridge) reported the break of a 30-inch pipeline near the city of Marshall, Calhoun County, Michigan. The break resulted in the spill of more than 800,000 gallons of crude oil into Talmadge Creek, which is a tributary of the Kalamazoo River (see attached figure).[1] The United States Environmental Protection Agency (EPA) established a Unified Command to contain the oil, remediate the contamination, and monitor environmental levels of oil-related contaminants. Members of the Unified Command included federal, state and local agencies, and Enbridge representatives.

The [redacted]s located in the city of Marshall, about eight tenths of a mile northeast of the confluence of Talmadge Creek and the Kalamazoo River. The [redacted] provides day care services for up to 128 children from birth to 12 years of age. Following the pipeline break, the owners of [redacted] reported smelling strong odors and that several staff had become ill as a result. The owners also expressed concern for the safety and well-being of the children in their care.

Discussion

The oil product spilled from the Enbridge pipeline is composed of petroleum hydrocarbons, which are a broad family of chemical compounds that include:

- short, straight chain molecules with nine or fewer carbons referred to as gasoline range organics (GRO),
- longer, sometimes branched molecules with 10 to 28 carbons referred to as diesel range organics (DRO),
- semivolatile organic hydrocarbons, including polycyclic aromatic hydrocarbons (PAHs), and
- volatile organic hydrocarbons (VOCs) such as benzene, toluene, ethylbenzene, and xylene.

These chemicals are present in many products that are used in homes and businesses. They are also emitted in automobile exhaust and from many industrial processes. Therefore, it is possible that levels of these chemicals monitored in air near the PCLC could come from sources other than the Enbridge

[1] "EPA's Response to the Enbridge Oil Spill." 2010. available at http://www.epa.gov/enbridgespill.

oil spill. People can smell these chemicals at levels lower than those that would be expected to cause harm to human health.

Air Data

Soon after the oil spill was reported, EPA emergency response personnel began "real-time" air monitoring near the spill site and along Talmadge Creek and the Kalamazoo River. EPA focused this monitoring on locations where people could be exposed to spill-related air contaminants in their homes and businesses. Enbridge also employed a contractor, the Center for Toxicology and Environmental Health (CTEH), to conduct additional air monitoring. Real-time air monitoring is conducted with a hand held instrument that gives an immediate readout of a contaminant concentration in air in units of parts per million and also continuously records all the readings. For consistency, I have converted all air concentrations to units of parts per billion (one part per million is equal to 1000 parts per billion). Table 1 shows the levels of contaminants found during air monitoring conducted at the [redacted]

Table 1. Levels of air contaminants monitored by the U.S. Environmental Protection Agency at [redacted] Marshall, Michigan from August 2, 2010 to August 27, 2010.

Chemical	Total Number of Samples	Number of Detections	Range of Concentrations (ppb)
Benzene	77	0	<50
Carbon monoxide	55	6	<1,000 to 2,000
Hydrogen sulfide	72	0	<1,000
Total VOCs	74	6	<100 to 500

ppb = parts per billion
VOCs = volatile organic hydrocarbons

Hydrogen sulfide can cause acute health effects at levels lower than could be detected by the MultiRAE instrument used to monitor the air at th[redacted] However, monitoring was also conducted at the oil release site (see attached figure) with a more sensitive Interscan instrument, which can detect hydrogen sulfide at 10 ppb. Levels of hydrogen sulfide at the oil spill site, which is more than two miles from the [redacted] did not exceed values protective of human health for exposures lasting up to two weeks.[2]

CTEH also conducted additional real-time monitoring for benzene and total VOCs at the PCLC from July 27, 2010 to August 29, 2010 (latest data available at the time of this writing). CTEH did not detect levels of either benzene or VOCs above the instrument detection limit of 100 ppb.[3]

Benzene is the chemical in the oil that public health officials are most concerned about for potential harm to human health. Working with the EPA and the CCPHD, toxicologists from the Michigan Department of Community Health (MDCH) Toxicology and Response Section and the Agency for Toxic Substances and Disease Registry (ATSDR) Region 5 office developed a decision tree to support decisions that are protective of human health.[4] When measured benzene levels were at or below 60 ppbv, no immediate action such as an evacuation was recommended. However, where any level of benzene was found or where there was greater concern for human exposure, EPA would conduct

[2] "EPA's Response to the Enbridge Oil Spill." 2010. available at http://www.epa.gov/enbridgespill.
[3] Center for Toxicology and Environmental Health. Daily Report for [redacted] August 28, 2010.
[4] "EPA's Response to the Enbridge Oil Spill." 2010. available at http://www.epa.gov/enbridgespill.

additional monitoring. Because children are at greater risk of harm than adults from exposure to contaminants in air, and at the request of the [redacted] owners, additional air sampling was conducted by both the EPA and CTEH.

The EPA and CTEH collected air samples in tedlar bags and in summa canisters for more extensive laboratory analysis. Tedlar bags are used to collect "grab samples" of air that can be quickly analyzed in an on-site mobile laboratory. The laboratory analysis of the tedlar bag samples provides a more accurate and sensitive measurements of benzene in air than the monitoring instruments. The concentration of the detected chemicals are expressed in units of parts per billion by volume of air (ppbv). Levels of benzene in air that are at or below 6 ppbv for up to one year are not expected to cause harm to human health.[5]

Table 2. Levels of benzene measured by the U.S. Environmental Protection Agency in tedlar bag samples at the [redacted], Marshall, Michigan from August 2, 2010 to August 27, 2010.[6]

Chemical	Total Number of Samples	Number of Detections	Range of Concentrations (ppbv)
Benzene	47	9	<0.5 to 5.3

ppbv = parts per billion by volume
VOCs = volatile organic hydrocarbons

(while low - it was higher than 5.3)

Summa canisters are used to collect samples that represent a time-weighted average (a few minutes or for up to 24 hours), to get a better understanding of exposure over the course of a full day. The canisters are sent to a laboratory for more extensive analysis for more than one hundred separate volatile chemicals. Table 3 shows five chemicals that were found in air samples collected from outside the PCLC on August 2, 2010 (24 hours) and August 3, 2010 (8 hours). No other chemicals, including benzene, were detected in the EPA summa canister samples. None of the chemicals found in the EPA summa canister samples are either associated with crude oil or exceeded health based screening levels.

Table 3. Levels of air contaminants measured by the U.S. Environmental Protection Agency in summa canister samples taken at the [redacted], Marshall, Michigan on August 2 and August 3, 2010.

Chemical	Total Number of Summa Samples	Number of Detections	Range of Concentrations (ppbv)	Screening Level[7] (ppbv)
Acetone	2	2	0.5 to 1.0	13,000
Acetonitrile	2	2	2.5 to 3.0	38
Chloromethane	2	1	0.4 to 0.7	200
Dichlorodifluoromethane	2	2	0.24 to 0.34	42
Methylene chloride	2	2	0.46 to 0.81	300

ppbv = parts per billion by volume
VOCs = volatile organic hydrocarbons

[5] Agency for Toxic Substances and Disease Registry. 2007. Toxicological Profile for Benzene. Available at http://www.atsdr.cdc.gov/ToxProfiles.
[6] "EPA's Response to the Enbridge Oil Spill." 2010. available at http://www.epa.gov/enbridgespill.
[7] "EPA's Response to the Enbridge Oil Spill." 2010. available at http://www.epa.gov/enbridgespill.

CTEH reports that it collected 15 summa canister samples at the [redacted] between August 1 and August 11, 2010, some of which were taken from inside the building office and in one of the educational rooms. No benzene was detected in any of these samples. Table 4 shows the chemicals that were verified as detected in both indoor and outdoor samples

Table 4. Levels of air contaminants measured by Center for Toxicology and Environmental Health in summa canister samples taken at the [redacted] Marshall, Michigan between August 1 and August 11, 2010.

Chemical	Total Number of Summa Samples	Number of Detections	Range of Concentrations (ppbv)	Screening Level (ppbv)
Acetone	15	13	11 to 44	13,000
Isopropyl Alcohol	15	14	12 to 250	90
Toluene	15	2	5.9 to 15	1,000

ppbv = parts per billion by volume
VOCs = volatile organic hydrocarbons

Several other chemicals such as acetaldehyde (7.5-20 ppbv), butanal (9.6 ppbv), butane (27-35 ppbv), 1,2-diethyl-benzene (6-6.7 ppbv), ethyl alcohol (20-90 ppbv), hexanal (8.5 ppbv), isobutane (26-35 ppbv), nonanal (6.5 ppbv), and propane (6.3 ppbv) were tentatively identified in the CTEH summa samples at very low levels that would not be expected to cause human health effects.

Only isopropyl alcohol exceeds a health based screening level developed by the Michigan Department of Natural Resources and Environment, Air Quality Division. Isopropyl alcohol is also know as rubbing alcohol and has many common uses in homes and businesses for medicinal purposes, as a solvent for glues in arts and crafts, and as a cleaning and disinfecting agent. Isopropyl alcohol is not a component in crude oil.

On August 5, 2010, a public health nurse employed by CTEH monitored outside air at the [redacted] for several hours. No benzene was detected in any of these monitoring events. On August 6, 2010, the public health nurse spent several hours inside the [redacted] main office where odors and symptoms had been reported by the owners. The nurse reported no unusual odors or health symptoms after spending the day in the [redacted]

Drinking Water Data

The CCPHD collected a drinking water sample from the [redacted] private well on August 2, 2010. The sample was analyzed for a target list of 59 VOCs including benzene and other chemicals that may have been in the crude oil. No chemicals were detected in the drinking water sample.

It's to soon to test wells

Odors and Health Concerns

Between August 10 and 13, 2010, MDCH epidemiology staff interviewed all the employees at the [redacted] regarding health effects that may have been associated with exposure to odors from the spill. Questions were asked in an open-ended format about whether employees had noticed any odors since the Enbridge oil spill, if they had chronic or pre-existing health conditions that made them sensitive to odors, and if they had developed any new health symptoms or a worsening of pre-existing symptoms after the spill. A summary of the results follows:

- All the employees (100%) noted the odor. Many noted that the worst days for odor were early in the first week following the oil spill (the week of July 26).
- Most of the employees (92%) said they still smelled the odor when they were interviewed (the second week after the spill).
- Some of the employees (33%) noted that they had pre-existing chronic health conditions that made them sensitive to fumes or odors.
- Most of the employees (92%) noted a variety of new onset or worsened symptoms after the spill, including: headache (92%); respiratory symptoms (33%), dizziness (50%); gastrointestinal symptoms (33%); fatigue (33%); eye, nose, throat irritation (75%), and anxiety (42%).
- Some of the employees (17%) noted that they were planning to see a physician for these symptoms. MDCH has no evidence to conclude whether any PCLC workers sought medical attention.

These reported symptoms are consistent with the known acute symptoms of exposure to crude oil. However, it cannot be determined if workers at the [redacted] experienced these symptoms as a result of exposure related to the Enbridge oil spill.

No complaints prior.

These results should be interpreted with caution. First, this was a survey of a very small group of individuals, thus subject to the instability of small numbers. Second, there are a number of factors that could have contributed to recall bias, resulting in over- or under-reporting of symptoms. Because these individuals worked closely together, individual responses could have been influenced by prior discussions and concerns about the spill. Further, overstated reporting of symptoms could have resulted from the considerable publicity surrounding the event and attendant legal issues.

On the other hand, the open-ended format of the questions, rather than a structured list of possible responses, could have meant that individuals were less likely to remember and report on specific types of symptoms. Although self-reported health surveys have been found to be less accurate than studies using clinical records, they still have been found to be reliable sources of information and are widely used.

Conclusions

MDCH concludes that breathing the air near and in the [redacted] *is not expected to cause long-term harm to people's health, including children.* No benzene was found in any air sample taken at [redacted]. No chemical found in the air samples exceeded health based screening levels with the exception of isopropyl alcohol, which is used for many common purposes in the home and in businesses.

MDCH concludes that drinking the water at the [redacted] *is not expected to cause harm to people's health, including children.* No chemical contaminants were found in the drinking water a[redacted]

MDCH cannot determine if breathing the air near and in the [redacted] *in the days following the Enbridge oil spill could have caused short term effects to employees' health.* In the days following the Enbridge oil spill, employees at the [redacted] reported a variety of symptoms, similar to those that have been associated with exposure to crude oil vapors and odors. However, extensive sampling of ambient and indoor air at [redacted] has not confirmed the presence of chemicals at levels that would explain these symptoms. Since no children were interviewed, MDCH

(or children!)

why not contact parents?

cannot determine if children experienced similar symptoms. As a result, we do not have an explanation for the symptoms experienced by the [redacted] employees.

Recommendations

- MDCH recommends that air monitoring for benzene and VOCs be conducted at the [redacted] if clean up activities on the Kalamazoo River occur in close proximity to the [redacted] Clean up activities may release these contaminants to the air as the oil is removed from vegetation along the river or when absorbent and containment booms are retrieved.
- MDCH recommends that drinking water be periodically sampled and analyzed to ensure that oil related contaminants do not impact the private well at the [redacted]
- MDCH recommends that employees and others at the [redacted] who experience health effects consult with their private physician for appropriate treatment.

Public Health Action Plan

- The EPA will provide oversight to Enbridge and their contractors to ensure that air monitoring is conducted where cleanup activities are on-going.
- The CCPHD, the EPA and the Michigan Department of Natural Resources and Environment will review and approve long-term sampling plans to ensure that drinking water is not impacted by oil spill related contaminants.
- The MDCH will remain available to review all environmental data resulting from on-going environmental monitoring and sampling related to the Enbridge oil spill. MDCH will make recommendations for actions to protect public health as appropriate.

Sincerely,

Linda D. Dykema

Linda D. Dykema, Ph.D., Manager
Toxicology and Response Section

Attachment

cc: Mark Johnson, Ph.D., ATSDR Region 5 Office
Martha Stanbury, MDCH