

**Certification Statement:**

Highest Ranking Employee

As of December 18, 2012, I Darrell Veres , certify that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the plan is factually accurate and complies with the Toxic Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Sulphuric Acid

Methanol

Formaldehyde

Acetaldehyde

Benzene

Naphthalene

Ethylbenzene

Xylene

Toluene

*D. Veres Dec 18/12*

Darrell Veres

Plant Manager

Greenfield Ethanol Johnstown Limited Partnership

**Planner**

As of December 18, 2012, I Dianne Schenk, certify that I am familiar with the processes at GFE Johnstown that use or create the toxic substance referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv, and v of subsection 4(1) of the Toxics Reduction Act, 2009 that are set out in the plan dated December 1, 2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under the Act.

Sulphuric Acid

Methanol

**Formaldehyde**

**Acetaldehyde**

**Benzene**

**Naphthalene**

**Ethylbenzene**

**Xylene**

**Toluene**



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**Dianne Schenk (Planner License # TSRP0190)**

**EH&S Coordinator / Toxic Substance**

**Reduction Planner**

**Greenfield Ethanol Tiverton Facility**

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Company Name	Greenfield Johnstown Facility
Name of Substance	Acetaldehyde
Chemical Abstracts Service Registry	75-07-0
NPRI Identification Number	11684
ID Number Assigned to Facility by the Ministry of the Environment for purposes of Reg 127/01	NA
Legal and Trade names of the Owner and the Operator of the Facility, Street address of the Facility	GreenField Ethanol 141Commerce Drive, Prescott Ontario
Business Number	13033 6852
The number of Full –time Employee Equivalents at the Facility	51
Two Digit North American Industry Classification System (NAICS)	32
Four Digit NAICS	3251
Six Digit NAICS	325190 Other Basic Organic Chemical Manufacturing
Name and Position and Telephone number of the individual who is the contact at the facility for the public.	Darrell Veres Plant Manager 613-9251385 ext 7729
The Licence number of the toxic substance reduction planner who is responsible for making recommendations in the plan.	TSRP0190
The Licence number of the toxic substance reduction planner who is responsible signing a certification plan.	TSRP0190
The Spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM)within a North American Datum 83 (NAD83) datum	UTM E 461634; UTM N 4953252

**Statement of Intent**

GFE, Johnstown Facility does not intend to reduce the creation of acetaldehyde as it is created during the fermentation and drying process.

**Objectives and Targets:**

While GFE, Johnstown Facility does not intend to reduce the creation of acetaldehyde at the present time, any opportunities for reduction will be reviewed and considered.

**Toxic Substance Description:**

The primary raw material used in the manufacture of ethyl alcohol at the Johnstown facility is corn. The starch in the corn kernels are converted to ethyl alcohol. The non-fermentable portion of the corn kernel (protein, lignin, etc) is sold into the animal feed market. This product is called distillers grains. A portion of the distillers grains produced at the Johnstown facility is dried in the dryers so as to provide the market with a dried distillers grains product. Acetaldehyde is created at the Johnstown facility during the fermentation process and during drying of the distillers grains. The acetaldehyde thus created is vented to atmosphere from the dryer exhaust after the dryer exhaust has passed through a thermal oxidizer, a heat recovery steam generator and a set of heat recovery process coils.

As well, some of the acetaldehyde produced during fermentation remains as an impurity in the final ethyl alcohol product which is shipped to customers.

A portion of the acetaldehyde present as an impurity in the final ethyl alcohol product, is vented through final product stage tank vents and during the truck loading process.

The remainder leaves the facility as an impurity in the final ethyl alcohol product shipped to the customer.

**Toxic Substance Reduction Option to be Implemented**

It has been determined that it is not technically and economically feasible at this time to reduce the creation of acetaldehyde. GFE Johnstown has decided not to implement any reduction options at this time but will revisit it in the future.

Company Name	Greenfield Johnstown Facility
Name of Substance and CAS	Benzene 71-43-2
NPRI Identification Number	11684
ID Number Assigned to Facility by the Ministry of the Environment for purposes of Reg 127/01	NA
Legal and Trade names of the Owner and the Operator of the Facility, Street address of the Facility	GreenField Ethanol 141Commerce Drive, Prescott Ontario
Business Number	13033 6852
The number of Full –time Employee Equivalents at the Facility	51
Two Digit North American Industry Classification System (NAICS)	32
Four Digit NAICS	3251
Six Digit NAICS	325190 Other Basic Organic Chemical Manufacturing
Name and Position and Telephone number of the individual who is the contact at the facility for the public.	Darrell Veres Plant Manager 613-9251385 ext 7729
The Licence number of the toxic substance reduction planner who is responsible for making recommendations in the plan.	TSRP0190
The Licence number of the toxic substance reduction planner who is responsible signing a certification plan.	TSRP0190
The Spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM)within a North American Datum 83 (NAD83) datum	UTM E 461634; UTM N 4953252

## **Plan Summary Statement**

This plan summary accurately reflects the content of the toxic substance reduction plan for Benzene, prepared by Greenfield Ethanol Johnstown, dated December 14, 2012.

### **Statement – Intent to reduce:**

GFE, Johnstown Facility intends to reduce its use of Benzene in full compliance with all Federal and Provincial Regulations.

### **Objectives and Targets:**

GFE, Johnstown Facility intends to reduce the use of Benzene by 70%.

### **Toxic Substance Description:**

Gasoline is used for denaturing fuel grade ethyl alcohol per Canada Revenue Agency (Excise) criteria, for those bulk customers who wish to purchase denatured fuel grade ethyl alcohol. The gasoline contains benzene, ethylbenzene, naphthalene, toluene and xylene. Bulk gasoline, containing the listed components is received at the Johnstown facility into a bulk storage tank. The gasoline is pumped from the bulk storage tank into denatured ethyl alcohol bulk storage tanks together with undenatured ethyl alcohol product, in order to denature the alcohol in accordance with Canada Revenue Agency (Excise) criteria.

The denatured ethyl alcohol (containing the gasoline) is then pumped from the storage tanks into a tanker truck or railcar. The tanker truck or railcar containing the ethyl alcohol which has been denatured with gasoline is then shipped to the customer.

### **Toxic Substance Reduction Option to be Implemented**

The following options have been identified for implementation to reduce the use of benzene:

- Substituting regular gasoline with natural gasoline, containing lower levels of toxic substances

Benzene reductions due to implementing the options above are:

Company Name: Greenfield Ethanol Johnstown Facility

Substance: Benzene

CAS#: 71-43-2

**Reduction Option: Materials or Feedstock Substitution**

	Used (tonnes/year)	Created (tonnes/year)	Contained in Product (tonnes/year)	On-site Releases (tonnes/year)			Disposal (tonnes/year)		Off-site Recycling (tonnes/year)
				Air	Water	Land	On-site	Off-site	
Baseline Benzene	30.17	0	29.3	0.47	0	0	0	0	0
Estimated Reduced Total	9.2	0	8.9	0.112	0	0	0	0	0
Reduction	20.97	0	20.5	0.262	0	0	0	0	0
% Reduction	70%	0	70%	70%	0	0	0	0	0
2012	18.8		18.5	0.47	0	0	0	0	0
	38%		11%	0%	0	0	0	0	0
2013	19.9		19.328	0.57	0	0	0	0	0
	34%		34%	18%	0	0	0	0	0
2014	23.9		23.4	0.5	0	0	0	0	0
	20.8%		20.8%	1%	0	0	0	0	0

This reduction will be achieved starting in 2012.

Company Name	Greenfield Johnstown Facility
Name of Substance and CAS	Ethylbenzene 100-41-4
NPRI Identification Number	11684
ID Number Assigned to Facility by the Ministry of the Environment for purposes of Reg 127/01	NA
Legal and Trade names of the Owner and the Operator of the Facility, Street address of the Facility	GreenField Ethanol 141Commerce Drive, Prescott Ontario
Business Number	13033 6852
The number of Full –time Employee Equivalents at the Facility	51
Two Digit North American Industry Classification System (NAICS)	32
Four Digit NAICS	3251
Six Digit NAICS	325190 Other Basic Organic Chemical Manufacturing
Name and Position and Telephone number of the individual who is the contact at the facility for the public.	Darrell Veres Plant Manager 613-9251385 ext 7729
The Licence number of the toxic substance reduction planner who is responsible for making recommendations in the plan.	TSRP0190
The Licence number of the toxic substance reduction planner who is responsible signing a certification plan.	TSRP0190
The Spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM)within a North American Datum 83 (NAD83) datum	UTM E 461634; UTM N 4953252



## **Plan Summary Statement**

This plan summary accurately reflects the content of the toxic substance reduction plan for Ethylbenzene, prepared by Greenfield Ethanol Johnstown, dated December 14, 2012.

### **Statement – Intent to reduce:**

GFE, Johnstown Facility intends to reduce its use of Ethylbenzene in full compliance with all Federal and Provincial Regulations.

### **Objectives and Targets:**

GFE, Johnstown Facility intends to reduce the use of Ethylbenzene by 100%.

### **Toxic Substance Description:**

Gasoline is used for denaturing fuel grade ethyl alcohol per Canada Revenue Agency (Excise) criteria, for those bulk customers who wish to purchase denatured fuel grade ethyl alcohol. The gasoline contains benzene, ethylbenzene, naphthalene, toluene and xylene. Bulk gasoline, containing the listed components is received at the Johnstown facility into a bulk storage tank. The gasoline is pumped from the bulk storage tank into denatured ethyl alcohol bulk storage tanks together with undenatured ethyl alcohol product, in order to denature the alcohol in accordance with Canada Revenue Agency (Excise) criteria.

The denatured ethyl alcohol (containing the gasoline) is then pumped from the storage tanks into a tanker truck or railcar. The tanker truck or railcar containing the ethyl alcohol which has been denatured with gasoline is then shipped to the customer.

### **Toxic Substance Reduction Option to be Implemented**

The following options have been identified for implementation to reduce the use of ethylbenzene:

- Substituting regular gasoline with natural gasoline, containing lower levels of toxic substances

Ethylbenzene reductions due to implementing the options above are:

Company Name: Greenfield Ethanol Johnstown Facility

Substance: Ethylbenzene

CAS#: 100-41-4

**Reduction Option: Materials or Feedstock Substitution**

	Used (tonnes/year)	Created (tonnes/year)	Contained in Product (tonnes/year)	On-site Releases (tonnes/year)			Disposal (tonnes/year)		Off-site Recycling (tonnes/year)
				Air	Water	Land	On-site	Off-site	
Baseline	60.35	0	0	0.374	0	0	0	0	0
Estimated Reduced Total	0	0	0	0	0	0	0	0	0
Reduction	60.35	0	0	0.374	0	0	0	0	0
% Reduction	100%	0	0	100%	0	0	0	0	0
2013	1.38	0	0	0.004	0	0	0	0	0
% Change	97.7	0	0	98	0	0	0	0	0
2014	0.042	0	0	0.004	0	0	0	0	0
% Change	99.9	0	0	99	0	0	0	0	0

This reduction will be achieved starting in 2012.

Company Name	Greenfield Johnstown Facility
Name of Substance	Formaldehyde
Chemical Abstracts Service Registry	75-07-0
NPRI Identification Number	11684
ID Number Assigned to Facility by the Ministry of the Environment for purposes of Reg 127/01	NA
Legal and Trade names of the Owner and the Operator of the Facility, Street address of the Facility	GreenField Ethanol 141Commerce Drive, Prescott Ontario
Business Number	13033 6852
The number of Full –time Employee Equivalents at the Facility	51
Two Digit North American Industry Classification System (NAICS)	32
Four Digit NAICS	3251
Six Digit NAICS	325190 Other Basic Organic Chemical Manufacturing
Name and Position and Telephone number of the individual who is the contact at the facility for the public.	Darrell Veres Plant Manager 613-9251385 ext 7729
The Licence number of the toxic substance reduction planner who is responsible for making recommendations in the plan.	TSRP0190
The Licence number of the toxic substance reduction planner who is responsible signing a certification plan.	TSRP0190
The Spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM)within a North American Datum 83 (NAD83) datum	UTM E 461634; UTM N 4953252

**Statement of Intent**

GFE, Johnstown Facility does not intend to reduce the creation of formaldehyde as it is created during the drying process.

**Objectives and Targets:**

While GFE, Johnstown Facility does not intend to reduce the creation of formaldehyde at the present time, any opportunities for reduction will be reviewed and considered.

**Toxic Substance Description:**

The primary raw material used in the manufacture of ethyl alcohol at the Johnstown facility is corn. The starch in the corn kernels are converted to ethyl alcohol. The non-fermentable portion of the corn kernel (protein, lignin, etc) is sold into the animal feed market. This product is called distillers grains. A portion of the distillers grains produced at the Johnstown facility is dried in the dryers so as to provide the market with a dried distillers grains product. Formaldehyde is created at the Johnstown facility during the fermentation process and during drying of the distillers grains. The formaldehyde thus created is vented to atmosphere from the dryer exhaust after the dryer exhaust has passed through a thermal oxidizer, a heat recovery steam generator and a set of heat recovery process coils.

**Toxic Substance Reduction Option to be Implemented**

It has been determined that it is not technically and economically feasible at this time to reduce the creation of formaldehyde. GFE Johnstown has decided not to implement any reduction options at this time but will revisit it in the future.

Company Name	Greenfield Johnstown Facility
Name of Substance and CAS	Naphthaline: 91-20-3
NPRI Identification Number	11684
ID Number Assigned to Facility by the Ministry of the Environment for purposes of Reg 127/01	NA
Legal and Trade names of the Owner and the Operator of the Facility, Street address of the Facility	GreenField Ethanol 141Commerce Drive, Prescott Ontario
Business Number	13033 6852
The number of Full –time Employee Equivalents at the Facility	51
Two Digit North American Industry Classification System (NAICS)	32
Four Digit NAICS	3251
Six Digit NAICS	325190 Other Basic Organic Chemical Manufacturing
Name and Position and Telephone number of the individual who is the contact at the facility for the public.	Darrell Veres Plant Manager 613-9251385 ext 7729
The Licence number of the toxic substance reduction planner who is responsible for making recommendations in the plan.	TSRP0190
The Licence number of the toxic substance reduction planner who is responsible signing a certification plan.	TSRP0190
The Spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM)within a North American Datum 83 (NAD83) datum	UTM E 461634; UTM N 4953252

## **Plan Summary Statement**

This plan summary accurately reflects the content of the toxic substance reduction plan for Naphthalene, prepared by Greenfield Ethanol Johnstown, dated December 14, 2012.

### **Statement – Intent to reduce:**

GFE, Johnstown Facility intends to reduce its use of Naphthalene in full compliance with all Federal and Provincial Regulations.

### **Objectives and Targets:**

GFE, Johnstown Facility intends to reduce the use of Naphthalene by 100%.

### **Toxic Substance Description:**

Gasoline is used for denaturing fuel grade ethyl alcohol per Canada Revenue Agency (Excise) criteria, for those bulk customers who wish to purchase denatured fuel grade ethyl alcohol. The gasoline contains benzene, ethylbenzene, naphthalene, toluene and xylene. Bulk gasoline, containing the listed components is received at the Johnstown facility into a bulk storage tank. The gasoline is pumped from the bulk storage tank into denatured ethyl alcohol bulk storage tanks together with undenatured ethyl alcohol product, in order to denature the alcohol in accordance with Canada Revenue Agency (Excise) criteria.

The denatured ethyl alcohol (containing the gasoline) is then pumped from the storage tanks into a tanker truck or railcar. The tanker truck or railcar containing the ethyl alcohol which has been denatured with gasoline is then shipped to the customer.

### **Toxic Substance Reduction Option to be Implemented**

The following options have been identified for implementation to reduce the use of Naphthalene:

- Substituting regular gasoline with natural gasoline, containing lower levels of toxic substances

Naphthalene reductions due to implementing the options above are:

Company Name: Greenfield Ethanol Johnstown Facility

Substance: Naphthalene

CAS#: 91-20-3

**Reduction Option: Materials or Feedstock Substitution**

	Used (tonnes/year)	Created (tonnes/year)	Contained in Product (tonnes/year)	On-site Releases (tonnes/year)			Disposal (tonnes/year)		Off-site Recycling (tonnes/year)
				Air	Water	Land	On-site	Off-site	
Baseline	20.12	0	0	0.374	0	0	0	0	0
Estimated Reduced Total	0	0	0	0	0	0	0	0	0
Reduction	20.12	0	0	0.374	0	0	0	0	0
% Reduction	100%	0	0	100%	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0
% Change	100	100	100	100	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0

This reduction will be achieved starting in 2012.

Company Name	Greenfield Johnstown Facility
Name of Substance	Sulphuric Acid
Chemical Abstracts Service Registry	7664-93-9
NPRI Identification Number	11684
ID Number Assigned to Facility by the Ministry of the Environment for purposes of Reg 127/01	NA
Legal and Trade names of the Owner and the Operator of the Facility, Street address of the Facility	GreenField Ethanol 141Commerce Drive, Prescott Ontario
Business Number	13033 6852
The number of Full –time Employee Equivalents at the Facility	51
Two Digit North American Industry Classification System (NAICS)	32
Four Digit NAICS	3251
Six Digit NAICS	325190 Other Basic Organic Chemical Manufacturing
Name and Position and Telephone number of the individual who is the contact at the facility for the public.	Darrell Veres Plant Manager 613-9251385 ext 7729
The Licence number of the toxic substance reduction planner who is responsible for making recommendations in the plan.	TSRP0190
The Licence number of the toxic substance reduction planner who is responsible signing a certification plan.	TSRP0190
The Spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM)within a North American Datum 83 (NAD83) datum	UTM E 461634; UTM N 4953252

### Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for sulphuric acid, prepared by Greenfield Ethanol Johnstown, dated December 14, 2012.

### Statement – Intent to reduce:

GFE, Johnstown Facility intends to reduce its use of sulphuric acid.

### Objectives and Targets:

GFE, Johnstown Facility intends to reduce the use of sulphuric acid by 15% over a 6 year period.





Estimated Reduced Total	1263	0	0	0	0	0	0	0	0
Reduction	110	0	0	0	0	0	0	0	0
% Reduction	8	0	0	0	0	0	0	0	0
2013	1656	0	0	0	0	0	0	0	0
% Change	21.0	0	0	0	0	0	0	0	0
2014	1861	0	0	0	0	0	0	0	0
% Change	12.4	0	0	0	0	0	0	0	0

It is expected that this reduction will occur over a 6 year period.

Sulphuric Acid reductions due to implementing the options above are:

Company Name: Greenfield Ethanol Johnstown Facility

Substance: Sulphuric acid

CAS#: 7664-93-9

**Reduction Option: Equipment or Process Modification**

	Used (tonnes/year)	Created (tonnes/year)	Contained in Product (tonnes/year)	On-site Releases (tonnes/year)			Disposal (tonnes/year)		Off-site Recycling (tonnes/year)
				Air	Water	Land	On-site	Off-site	
Baseline	1373	0	0	0	0	0	0	0	0
Estimated Reduced Total	1277	0	0	0	0	0	0	0	0
Reduction	96	0	0	0	0	0	0	0	0
% Reduction	7	0	0	0	0	0	0	0	0
2013	1656	0	0	0	0	0	0	0	0
% Change	21.0	0	0	0	0	0	0	0	0
2014	1861	0	0	0	0	0	0	0	0
% Change	12.4	0	0	0	0	0	0	0	0

It is expected that this reduction will occur over a 6 year period.

Company Name	Greenfield Johnstown Facility
Name of Substance and CAS	Toluene: 108-88-3
NPRI Identification Number	11684
ID Number Assigned to Facility by the Ministry of the Environment for purposes of Reg 127/01	NA
Legal and Trade names of the Owner and the Operator of the Facility, Street address of the Facility	GreenField Ethanol 141Commerce Drive, Prescott Ontario
Business Number	13033 6852
The number of Full –time Employee Equivalents at the Facility	51
Two Digit North American Industry Classification System (NAICS)	32
Four Digit NAICS	3251
Six Digit NAICS	325190 Other Basic Organic Chemical Manufacturing
Name and Position and Telephone number of the individual who is the contact at the facility for the public.	Darrell Veres Plant Manager 613-9251385 ext 7729
The Licence number of the toxic substance reduction planner who is responsible for making recommendations in the plan.	TSRP0190
The Licence number of the toxic substance reduction planner who is responsible signing a certification plan.	TSRP0190
The Spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM)within a North American Datum 83 (NAD83) datum	UTM E 461634; UTM N 4953252

### Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for Toluene, prepared by Greenfield Ethanol Johnstown, dated December 14, 2012.

### Statement – Intent to reduce:

GFE, Johnstown Facility intends to reduce its use of Toluene in full compliance with all Federal and Provincial Regulations.

### Objectives and Targets:

GFE, Johnstown Facility intends to reduce the use of Toluene by 98%.

### Toxic Substance Description:

Gasoline is used for denaturing fuel grade ethyl alcohol per Canada Revenue Agency (Excise) criteria, for those bulk customers who wish to purchase denatured fuel grade ethyl alcohol. The gasoline contains benzene, ethylbenzene, naphthalene, toluene and xylene. Bulk gasoline, containing the listed components is received at the Johnstown facility into a bulk storage tank. The gasoline is pumped from the bulk storage tank into denatured ethyl alcohol bulk storage tanks together with undenatured ethyl alcohol product, in order to denature the alcohol in accordance with Canada Revenue Agency (Excise) criteria.

The denatured ethyl alcohol (containing the gasoline) is then pumped from the storage tanks into a tanker truck or railcar. The tanker truck or railcar containing the ethyl alcohol which has been denatured with gasoline is then shipped to the customer.

**Toxic Substance Reduction Option to be Implemented**

The following options have been identified for implementation to reduce the use of Naphthalene:

- Substituting regular gasoline with natural gasoline, containing lower levels of toxic substances

Toluene reductions due to implementing the options above are:

Company Name: Greenfield Ethanol Johnstown Facility

Substance: Toluene

CAS#: 108-88-3

**Reduction Option: Materials or Feedstock Substitution**

	Used (tonnes/year)	Created (tonnes/year)	Contained in Product (tonnes/year)	On-site Releases (tonnes/year)			Disposal (tonnes/year)		Off-site Recycling (tonnes/year)
				Air	Water	Land	On-site	Off-site	
Baseline	402.3	0	400	2.45	0	0	0	0	0
Estimated Reduced Total	6.1	0	8.1	0.05	0	0	0	0	0
Reduction	396.2	0	391.9	2.40	0	0	0	0	0
% Reduction	98%	0	98%	98%	0	0	0	0	0
2013	8.84	0	8.56	0.028	0	0	0	0	0
% Change	97.8	0	97.9	98.9	0	0	0	0	0
2014	10.6	0	10.6	0.037	0	0	0	0	0
% Change	97.4	0	97.4	98.5	0	0	0	0	0

This reduction will be achieved starting in 2012.

Company Name	Greenfield Johnstown Facility
Name of Substance and CAS	Xylene: 1330-20-7
NPRI Identification Number	11684
ID Number Assigned to Facility by the Ministry of the Environment for purposes of Reg 127/01	NA
Legal and Trade names of the Owner and the Operator of the Facility, Street address of the Facility	GreenField Ethanol 141Commerce Drive, Prescott Ontario
Business Number	13033 6852
The number of Full –time Employee Equivalents at the Facility	51
Two Digit North American Industry Classification System (NAICS)	32
Four Digit NAICS	3251
Six Digit NAICS	325190 Other Basic Organic Chemical Manufacturing
Name and Position and Telephone number of the individual who is the contact at the facility for the public.	Darrell Veres Plant Manager 613-9251385 ext 7729
The Licence number of the toxic substance reduction planner who is responsible for making recommendations in the plan.	TSRP0190
The Licence number of the toxic substance reduction planner who is responsible signing a certification plan.	TSRP0190
The Spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM)within a North American Datum 83 (NAD83) datum	UTM E 461634; UTM N 4953252

### Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for Xylene, prepared by Greenfield Ethanol Johnstown, dated December 14, 2012.

### Statement – Intent to reduce:

GFE, Johnstown Facility intends to reduce its use of Xylene in full compliance with all Federal and Provincial Regulations.

### Objectives and Targets:

GFE, Johnstown Facility intends to reduce the use of Xylene by 99.7%.

**Toxic Substance Description:**

Gasoline is used for denaturing fuel grade ethyl alcohol per Canada Revenue Agency (Excise) criteria, for those bulk customers who wish to purchase denatured fuel grade ethyl alcohol. The gasoline contains benzene, ethylbenzene, naphthalene, toluene and xylene. Bulk gasoline, containing the listed components is received at the Johnstown facility into a bulk storage tank. The gasoline is pumped from the bulk storage tank into denatured ethyl alcohol bulk storage tanks together with undenatured ethyl alcohol product, in order to denature the alcohol in accordance with Canada Revenue Agency (Excise) criteria.

The denatured ethyl alcohol (containing the gasoline) is then pumped from the storage tanks into a tanker truck or railcar. The tanker truck or railcar containing the ethyl alcohol which has been denatured with gasoline is then shipped to the customer.

**Toxic Substance Reduction Option to be Implemented**

The following options have been identified for implementation to reduce the use of Xylene:

- Substituting regular gasoline with natural gasoline, containing lower levels of toxic substances

Xylene reductions due to implementing the options above are:

Company Name: Greenfield Ethanol Johnstown Facility

Substance: Xylene

CAS#: 108-88-3

**Reduction Option: Materials or Feedstock Substitution**

	Used (tonnes/year)	Created (tonnes/year)	Contained in Product (tonnes/year)	On-site Releases (tonnes/year)			Disposal (tonnes/year)		Off-site Recycling (tonnes/year)
				Air	Water	Land	On-site	Off-site	
Baseline	301.7	0	290	11.56	0	0	0	0	0
Estimated Reduced Total	1.02	0	0.9	11.53	0	0	0	0	0
Reduction	300.7	0	289.1	0.03	0	0	0	0	0
% Reduction	99.7%	0	99.7	99.7%	0	0	0	0	0
2013	2.5	0	2.51	0.22	0	0	0	0	0
% Change	99	0	99	98	0	0	0	0	0
2014	2.91	0	2.9	0.22	0	0	0	0	0
	99	0	99	98	0	0	0	0	0

This reduction will be achieved starting in 2012.