

**2019 Annual Public Reporting for Toxic Substances  
Ammonia (Total)**

**Facility and Contact Information**

Facility NPRI No.	488
Facility MOE No. if assigned	8405
Company legal and trade names of owner and operator of the facility	Ingredion Canada Corporation
Facility street and mailing address	4040 James Street Cardinal, Ontario, K0E 1E0
Name, position, telephone no. of facility public contact	David Wilcox 613-657-3131
No. of full-time employee equivalent	200
2, 4, and 6 digit NAICS Codes	31-33 Manufacturing 3112 Grain & Oilseed Milling 311221 Wet Corn Milling
UTM spatial coordinates with NAD83 datum	18T 470334m E 4959196m N
Legal name of Canadian parent company	Ingredion Canada Corporation
Street and mailing address of parent company	1600 - 90 Burnhamthorpe Road West Mississauga, Ontario, L5B 0H9
Percentage ownership of facility	100

**Toxic Substance Plan Information**

Name and CAS numbers of toxic substance for this report	Ammonia (Total), CAS NA-16
Name and CAS numbers of other substances created or used at facility	Hydrochloric Acid, CAS 7647-01-0 Sulphur Dioxide, CAS 7446-09-5 Hydrogen Sulphide, CAS 7783-06-4 Total Reduced Sulphur, CAS NA-M14 Carbon Monoxide, CAS 630-08-0 Nitrogen oxides (expressed as NO <sub>2</sub> ), CAS 11104-93-1 Phosphorus (Total), CAS NA-22 Total Particulate, CAS NA-M08 PM10 - Particulate <= 10 micron, CAS NA-M09 PM2.5 Particulate <= 2.5 micron, CAS NA-M10
Date of most recent plan	12-Dec-13
Objectives of plan, and targets	Ingredion has a long history of safe and responsible use of hazardous materials in Cardinal, and has already invested significant resources to reduce the use of toxic and hazardous materials including HCl. Going forward, Ingredion is committed to reducing the amount of HCl used. This will be accomplished by assessing potential reductions through material or feedstock substitution, product design or reformulation, equipment or process modification, spill and leak prevention, on-site reuse or recycling, improved inventory management or purchasing techniques, and training or improved operating procedures.
Summarize any amendments to the plan	No plan amendments have been made.
Summarize the steps taken during the reporting period towards achieving the objectives of the plan	All planned reduction option steps were completed in previous years
Summarize the effectiveness of the steps taken during the reporting period	All planned reduction option steps were completed in previous years

## 2019 Annual Public Reporting for Toxic Substances

### Ammonia (Total)

Review implementation progress and timelines set out in the plan	All planned reduction option steps were completed in previous years
Summarize actions taken in this reporting year that were additional to the steps described in the plan	There were no additional reduction activities in the reporting year.

#### Annual Reporting Metrics

Ammonia (Total)	Tonne or Range			On-site Releases, tonne			Disposals, tonne		Off-Site Recycled, tonne
	Used	Created	In Product	Air	Land	Water	On-Site	Off-Site	
Previous Year	10-100	0	1-10	1.639	0	2.948	0	0	0
Current Year	0-1	0	0-1	3.060	0	11.911	0	0	0
Difference	-10-100	0	-1-10	1.421	0	8.963	0	0	0
Percent Difference	-100%	0%	-10-100%	87%	0%	304%	0%	0%	0%
Reductions in plan	0	0	0	0.000	0	0.000	0	0	0
Reductions outside plan	0	0	0	0.000	0	0.000	0	0	0
Total Reductions	0	0	0	0.000	0	0.000	0	0	0
Percent Reductions	0%	0%	0%	0%	0%	0%	0%	0%	0%
Rationale for changes	Process conditions in manufacturing caused higher levels of organic loading, affecting waste water treatment output levels and requiring no ammonia additions								

#### Certification

As of July 31, 2020, I, David Wilcox, certify that I have read the report on the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the information contained in the report is factually accurate and the report complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Ammonia (total)

Original Document Signed
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David Wilcox, Plant Manager

**2019 Annual Public Reporting for Toxic Substances**  
**Nitrogen Oxides (Expressed as NO2)**  
**Carbon Monoxide**

**Facility and Contact Information**

Facility NPRI No.	488
Facility MOE No. if assigned	8405
Company legal and trade names of owner and operator of the facility	Ingredion Canada Corporation
Facility street and mailing address	4040 James Street Cardinal, Ontario, K0E 1E0
Name, position, telephone no. of facility public contact	David Wilcox, Plant Manager 613-657-3131
No. of full-time employee equivalent	200
2, 4, and 6 digit NAICS Codes	31-33 Manufacturing 3112 Grain & Oilseed Milling 311221 Wet Corn Milling
UTM spatial coordinates with NAD83 datum	18T 470334m E 4959196m N
Legal name of Canadian parent company	Ingredion Canada Corporation
Street and mailing address of parent company	1600-90 Burnhamthorpe Road West Mississauga, Ontario, L5B 0H9
Percentage ownership of facility	100

**Toxic Substance Plan Information**

Name and CAS numbers of toxic substance for this report	Nitrogen oxides (expressed as NO2), CAS 11104-93-1 Carbon Monoxide, CAS 630-08-0
Name and CAS numbers of other substances created or used at facility	Hydrochloric Acid, CAS 7647-01-0 Ammonia (total), CAS NA-16 Hydrogen Sulphide, CAS 7783-06-4 Total Reduced Sulphur, CAS NA-M14 Sulphur Dioxide, CAS 7446-09-5 Phosphorus (total), CAS NA-22 Total Particulate, CAS NA-M08 PM10 - Particulate <= 10 micron, CAS NA-M09 PM2.5 Particulate <= 2.5 micron, CAS NA-M10
Date of most recent plan	13-Dec-18
Objectives of plan, and targets	Ingredion has a long history of safe and responsible use of combustion fuels in Cardinal, and has already invested significant resources to reduce excess usage of fuels that, when combusted, create and emit toxic substances including CO and NO2. Through this plan, Ingredion is committed to reducing excess usage of fuels that create CO and NO2. This will be accomplished by assessing potential reductions through material or feedstock substitution, product design or reformulation, equipment or process modification, spill and leak prevention, on-site reuse or recycling, improved inventory management or purchasing techniques, and training or improved operating procedures.
Summarize any amendments to the plan	The original plan was reviewed and updated in 2018. No plan amendments have been made to this version
Summarize the steps taken during the reporting period towards achieving the objectives of the plan	One project was selected for implementation under this plan that was completed in 2018. Energy consumption reductions were realized in 2019
Summarize the effectiveness of the steps taken during the reporting period	The steps planned for implementation were completed in 2018

**2019 Annual Public Reporting for Toxic Substances  
Nitrogen Oxides (Expressed as NO2)  
Carbon Monoxide**

Review implementation progress and timelines set out in the plan	The steps planned for implementation were completed in 2018 The plan has been completed.
Summarize actions taken in this reporting year that were additional to the steps described in the plan	No additional actions were taken in the reporting year.

**Annual Reporting Metrics**

Nitrogen Oxides (Expressed as NO2)	Tonne or Range		On-site Releases, tonne			Disposals, tonne		Off-Site Recycled, tonne
	Used	Created	Air	Land	Water	On-Site	Off-Site	
Previous Year	0	10-100	83.512	0	0	0	0	0
Current Year	0	10-100	80.15	0	0	0	0	0
Difference	0	-1-10	-3.362	0	0	0	0	0
Percent Difference	0%	-1-10%	-4.03%	0%	0%	0%	0%	0%
Reductions in plan	0	1-10	1.59	0	0	0	0	0
Reductions outside plan	0	0	0	0	0	0	0	0
Total Reductions	0	1-10	1.59	0	0	0	0	0
Percent Reductions	0%	1-10%	2%	0%	0%	0%	0%	0%
Rationale for changes	Realized reductions from improvement activities and experienced normal variances in fuel consumption							

Carbon Monoxide	Tonne or Range		On-site Releases, tonne			Disposals, tonne		Off-Site Recycled, tonne
	Used	Created	Air	Land	Water	On-Site	Off-Site	
Previous Year	0	10-100	37.479	0	0	0	0	0
Current Year	0	10-100	33.47	0	0	0	0	0
Difference	0	-1-10	-4.009	0	0	0	0	0
Percent Difference	0%	-10-100%	-10.70%	0%	0%	0%	0%	0%
Reductions in plan	0	1-10	1.33	0	0	0	0	0
Reductions outside plan	0	0	0.00	0	0	0	0	0
Total Reductions	0	1-10	1.33	0	0	0	0	0
Percent Reductions	0%	4%	4%	0%	0%	0%	0%	0%
Rationale for changes	Realized reductions from improvement activities and experienced normal variances in fuel consumption							

**Certification**

As of July 31, 2020, I, David Wilcox, certify that I have read the report on the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the information contained in the report is factually accurate and the report complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Nitrogen Oxides (Expressed as NO2)  
Carbon Monoxide

Original Document Signed

David Wilcox, Plant Manager

**2019 Annual Public Reporting for Toxic Substances  
Hydrochloric Acid**

**Facility and Contact Information**

Facility NPRI No.	488
Facility MOE No. if assigned	8405
Company legal and trade names of owner and operator of the facility	Ingredion Canada Corporation
Facility street and mailing address	4040 James Street Cardinal, Ontario, K0E 1E0
Name, position, telephone no. of facility public contact	David Wilcox, Plant Manager 613-657-3131
No. of full-time employee equivalent	200
2, 4, and 6 digit NAICS Codes	31-33 Manufacturing 3112 Grain & Oilseed Milling 311221 Wet Corn Milling
UTM spatial coordinates with NAD83 datum	18T 470334m E 4959196m N
Legal name of Canadian parent company	Ingredion Canada Corporation
Street and mailing address of parent company	1600-90 Burnhamthorpe Road West Mississauga, Ontario, L5B 0H9
Percentage ownership of facility	100

**Toxic Substance Plan Information**

Name and CAS numbers of toxic substance for this report	Hydrochloric Acid, CAS 7647-01-0
Name and CAS numbers of other substances created or used at facility	Ammonia (Total) CAS NA - 16 Phosphorus (Total), CAS NA-22 Sulphur Dioxide, CAS 7446-09-5 Hydrogen Sulphide, CAS 7783-06-4 Total Reduced Sulphur, CAS NA-M14 Carbon Monoxide, CAS 630-08-0 Nitrogen oxides (expressed as NO <sub>2</sub> ), CAS 11104-93-1 Total Particulate, CAS NA-M08 PM10 - Particulate <= 10 micron, CAS NA-M09 PM2.5 Particulate <= 2.5 micron, CAS NA-M10
Date of most recent plan	December 17, 2012
Objectives of plan, and targets	Ingredion has a long history of safe and responsible use of hazardous materials in Cardinal, and has already invested significant resources to reduce the use of toxic and hazardous materials including HCl. Going forward, Ingredion is committed to reducing the amount of HCl used. This will be accomplished by assessing potential reductions through material or feedstock substitution, product design or reformulation, equipment or process modification, spill and leak prevention, on-site reuse or recycling, improved inventory management or purchasing techniques, and training or improved operating procedures.
Summarize any amendments to the plan	No plan amendments have been made
Summarize the steps taken during the reporting period towards achieving the objectives of the plan	All planned reduction steps were implemented in previous years.
Summarize the effectiveness of the steps taken during the reporting period	All planned reduction steps were implemented in previous years.
Review implementation progress and timelines set out in the plan	All planned reduction steps were implemented in previous years. The plan has been completed

Summarize actions taken in this reporting year that were additional to the steps described in the plan

There were no additional actions taken for the reporting year

#### Annual Reporting Metrics

Hydrochloric Acid	Tonne or Range			On-site Releases, tonne			Disposals, tonne		Off-Site Recycled, tonne
	Used	Created	In Product	Air	Land	Water	On-Site	Off-Site	
Previous Year	1,000-10,000	0	0	1.590	0	0	0	0	0
Current Year	1,000-10,000	0	0	1.566	0	0	0	0	0
Difference	100-1,000	0	0	-0.024	0	0	0	0	0
Percent Difference	-10-100%	0%	0%	-1.5%	0%	0%	0%	0%	0%
Reductions in plan	0	0	0	0	0	0	0	0	0
Reductions outside plan	0	0	0	0	0	0	0	0	0
Total Reductions	0	0	0	0	0	0	0	0	0
Percent Reductions	0%	0%	0%	0.00%	0%	0%	0%	0%	0%
Rationale for changes	Normal annual variances in production volumes								

#### Certification

As of July 31, 2020, I, David Wilcox, certify that I have read the report on the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the information contained in the report is factually accurate and the report complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Hydrochloric Acid

Original Document Signed

David Wilcox, Plant Manager

**2019 Annual Public Reporting for Toxic Substances  
Hydrogen Sulphide and Total Reduced Sulphur**

**Facility and Contact Information**

Facility NPRI No.	488
Facility MOE No. if assigned	8405
Company legal and trade names of owner and operator of the facility	Ingredion Canada Corporation
Facility street and mailing address	4040 James Street Cardinal, Ontario K0E 1E0
Name, position, telephone no. of facility public contact	David Wilcox, Plant Manager 613-657-3131
No. of full-time employee equivalent	200
2, 4, and 6 digit NAICS Codes	31-33 Manufacturing 3112 Grain & Oilseed Milling 311221 Wet Corn Milling
UTM spatial coordinates with NAD83 datum	18T 470334m E 4959196m N
Legal name of Canadian parent company	Ingredion Canada Corporation
Street and mailing address of parent company	1600 - 90 Burnhamthorpe Road West Mississauga, Ontario, L5B 0H9
Percentage ownership of facility	100

**Toxic Substance Plan Information**

Name and CAS numbers of toxic substance for this report	Hydrogen Sulphide CAS 7783-06-4 Total Reduced Sulphur, CAS NA-M14
Name and CAS numbers of other substances created or used at facility	Hydrochloric Acid, CAS 7647-01-0 Ammonia (total), CAS NA-16 Nitrogen oxides (expressed as NO <sub>2</sub> ), CAS 11104-93-1 Carbon Monoxide, CAS 630-08-0 Sulphur Dioxide, CAS 7446-09-5 Phosphorus (total), CAS NA-22 Total Particulate, CAS NA-M08 PM10 - Particulate <= 10 micron, CAS NA-M09 PM2.5 Particulate <= 2.5 micron, CAS NA-M10
Date of most recent plan	16-Dec-13
Objectives of plan, and targets	Ingredion's main business is producing valuable products from corn and has already invested significant resources to reduce waste and excess chemical usage. Through this plan, Ingredion is committed to reducing excess creation of H <sub>2</sub> S and TRS. This will be accomplished by assessing potential reductions through material or feedstock substitution, product design or reformulation, equipment or process modification, spill and leak prevention, on-site reuse or recycling, improved inventory management or purchasing techniques and training or improved operating procedures.
Summarize any amendments to the plan	No plan amendments have been made
Summarize the steps taken during the reporting period towards achieving the objectives of the plan	All planned reduction steps were implemented in previous years.
Summarize the effectiveness of the steps taken during the reporting period	All planned reduction steps were implemented in previous years.
Review implementation progress and timelines set out in the plan	All planned reduction steps were implemented in previous years. The plan has been completed

**2019 Annual Public Reporting for Toxic Substances  
Hydrogen Sulphide and Total Reduced Sulphur**

Summarize actions taken in this reporting year that were additional to the steps described in the plan	There were no additional actions taken for the reporting year
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**Annual Reporting Metrics**

Hydrogen Sulphide	Tonne or Range			On-site Releases, tonne			Disposals, tonne		Off-Site Recycled, tonne
	Used	Created	In Product	Air	Land	Water	On-Site	Off-Site	
Previous Year	0	10-100	0	1.109	0	0	0	0	0
Current Year	0	10-100	0	0.463	0	0	0	0	0
Difference	0	10-100	0	-0.646	0	0	0	0	0
Percent Difference	0%	100-1000%	0%	-58.25%	0%	0%	0%	0%	0%
Reductions in plan	0	0	0	0.000	0	0	0	0	0
Reductions outside plan	0	0	0	0.000	0	0	0	0	0
Total Reductions	0	0	0	0.000	0	0	0	0	0
Percent Reductions	0%	0%	0%	0.00%	0%	0%	0%	0%	0%
Rationale for changes	Conditions in waste treatment were more normal than the previous year's conditions that generated higher levels of H2S								

Total Reduced Sulphur	Tonne or Range			On-site Releases, tonne			Disposals, tonne		Off-Site Recycled, tonne
	Used	Created	In Product	Air	Land	Water	On-Site	Off-Site	
Previous Year	0	10-100	0	1.109	0	0	0	0	0
Current Year	0	10-100	0	0.463	0	0	0	0	0
Difference	0	10-100	0	-0.646	0	0	0	0	0
Percent Difference	0%	100-1000%	0%	-58.3%	0%	0%	0%	0%	0%
Reductions in plan	0	0	0	0.000	0	0	0	0	0
Reductions outside plan	0	0	0	0.000	0	0	0	0	0
Total Reductions	0	0	0	0.000	0	0	0	0	0
Percent Reductions	0%	0%	0%	0.0%	0%	0%	0%	0%	0%
Rationale for changes	Conditions in waste treatment were more normal than the previous year's conditions that generated higher levels of TRS								

**Certification**

As of July 31, 2020, I, David Wilcox, certify that I have read the report on the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the information contained in the report is factually accurate and the report complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Hydrogen Sulphide  
Total Reduced Sulphur

Original Document Signed

David Wilcox, Plant Manager



**2019 Annual Public Reporting for Toxic Substances  
Sulphur Dioxide**

**Facility and Contact Information**

Facility NPRI No.	488
Facility MOE No. if assigned	8405
Company legal and trade names of owner and operator of the facility	Ingredion Canada Corporation
Facility street and mailing address	4040 James Street Cardinal, Ontario, K0E 1E0
Name, position, telephone no. of facility public contact	David Wilcox, Plant Manager 613-657-3131
No. of full-time employee equivalent	200
2, 4, and 6 digit NAICS Codes	31-33 Manufacturing 3112 Grain & Oilseed Milling 311221 Wet Corn Milling
UTM spatial coordinates with NAD83 datum	18T 470334m E 4959196m N
Legal name of Canadian parent company	Ingredion Canada Corporation
Street and mailing address of parent company	1600-90 Burnhamthorpe Road West Mississauga, Ontario, L5B 0H9
Percentage ownership of facility	100

**Toxic Substance Plan Information**

Name and CAS numbers of toxic substance for this report	Sulphur Dioxide, CAS 7446-09-5
Name and CAS numbers of other substances created or used at facility	Hydrochloric Acid, CAS 7647-01-0 Ammonia (total), CAS NA-16 Carbon Monoxide, CAS 630-08-0 Hydrogen Sulphide, CAS 7783-06-4 Total Reduced Sulphur, CAS NA-M14 Nitrogen oxides (expressed as NO <sub>2</sub> ), CAS 11104-93-1 Phosphorus (total), CAS NA-22 Total Particulate, CAS NA-M08 PM10 - Particulate <= 10 micron, CAS NA-M09 PM2.5 Particulate <= 2.5 micron, CAS NA-M10
Date of most recent plan	12-Dec-18
Objectives of plan, and targets	Ingredion has a long history of safe and responsible use of combustion fuels and corn milling solutions used in Cardinal, and has already invested significant resources to reduce excess usage of fuels that, when combusted, create and emit toxic substances including SO <sub>2</sub> . Through this plan, Ingredion is committed to reducing excess creation and emission of SO <sub>2</sub> . This will be accomplished by assessing potential reductions through material or feedstock substitution, product design or reformulation, equipment or process modification, spill and leak prevention, on-site reuse or recycling, improved inventory management or purchasing techniques, and training or improved operating procedures
Summarize any amendments to the plan	The original plan was reviewed and updated in 2018. No plan amendments have been made to this version.

**2019 Annual Public Reporting for Toxic Substances  
Sulphur Dioxide**

Summarize the steps taken during the reporting period towards achieving the objectives of the plan	Two projects were selected for implementation under this plan. Modifications to a sulphur burner system, and other burner reliability improvements were investigated and implemented in 2018. These are expected to reduce the amount of excess SO2 generation in the future.
Summarize the effectiveness of the steps taken during the reporting period	The steps planned for implementation were completed in 2018.
Review implementation progress and timelines set out in the plan	The steps planned for implementation were completed in 2018. The plan has been completed.
Summarize actions taken in this reporting year that were additional to the steps described in the plan	No additional actions were taken in the reporting year.

**Annual Reporting Metrics**

Sulphur Dioxide	Tonne or Range		On-site Releases, tonne			Disposals, tonne		Off-Site Recycled, tonne
	Used	Created	Air	Land	Water	On-Site	Off-Site	
Previous Year	0	100-1000	159.024	0	0	0	0	0
Current Year	0	100-1000	99.482	0	0	0	0	0
Difference	0	1-10	-59.542	0	0	0	0	0
Percent Difference	0%	0-1%	-37.4%	0%	0%	0%	0.0%	0%
Reductions in plan	0	1-10	2.56	0	0	0	0	0
Reductions outside plan	0	0	0	0	0	0	0	0
Total Reductions	0	0	2.56	0	0	0	0	0
Percent Reductions	0%	0%	1-10%	0%	0%	0%	0%	0%
Rationale for changes	Conditions in waste water treatment were more normal than the previous year's conditions that generated higher levels of SO2							

**Certification**

As of July 31, 2020, I, David Wilcox, certify that I have read the report on the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the information contained in the report is factually accurate and the report complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Sulphur Dioxide

Original Document Signed

David Wilcox, Plant Manager

**2019 Annual Public Reporting for Toxic Substances  
Phosphorus (Total)**

**Facility and Contact Information**

Facility NPRI No.	488
Facility MOE No. if assigned	8405
Company legal and trade names of owner and operator of the facility	Ingredion Canada Corporation
Facility street and mailing address	4040 James Street Cardinal, Ontario, K0E 1E0
Name, position, telephone no. of facility public contact	David Wilcox, Plant Manager 613-657-3131
No. of full-time employee equivalent	200
2, 4, and 6 digit NAICS Codes	31-33 Manufacturing 3112 Grain & Oilseed Milling 311221 Wet Corn Milling
UTM spatial coordinates with NAD83 datum	18T 470334m E 4959196m N
Legal name of Canadian parent company	Ingredion Canada Corporation
Street and mailing address of parent company	1600 - 90 Burnhamthorpe Road West Mississauga, Ontario, L5B 0H9
Percentage ownership of facility	100

**Toxic Substance Plan Information**

Name and CAS numbers of toxic substance for this report	Phosphorus (Total), CAS NA-22
Name and CAS numbers of other substances created or used at facility	Ammonia (Total), CAS NA-16 Hydrochloric Acid, CAS 7647-01-0 Sulphur Dioxide, CAS 7446-09-5 Hydrogen Sulphide, CAS 7783-06-4 Total Reduced Sulphur, CAS NA-M14 Nitrogen oxides (expressed as NO <sub>2</sub> ), CAS 11104-93-1 Carbon Monoxide, CAS 630-08-0 Total Particulate, CAS NA-M08 PM10 - Particulate <= 10 micron, CAS NA-M09 PM2.5 Particulate <= 2.5 micron, CAS NA-M10
Date of most recent plan	18-Dec-13
Objectives of plan, and targets	Ingredion's main business is producing valuable products from corn, and has already invested significant resources to reduce waste and excess usage of corn containing phosphorus. Through this plan, Ingredion is committed to reducing excess usage of phosphorus. This will be accomplished by assessing potential reductions through material or feedstock substitution, product design or reformulation, equipment or process modification, spill and leak prevention, on-site reuse or recycling, improved inventory management or purchasing techniques, and training or improved operating procedures.
Summarize any amendments to the plan	No plan amendments have been made
Summarize the steps taken during the reporting period towards achieving the objectives of the plan	All planned reduction steps were implemented in previous years.

**2019 Annual Public Reporting for Toxic Substances  
Phosphorus (Total)**

Summarize the effectiveness of the steps taken during the reporting period	All planned reduction steps were implemented in previous years.
Review implementation progress and timelines set out in the plan	All planned reduction steps were implemented in previous years. The plan has been completed
Summarize actions taken in this reporting year that were additional to the steps described in the plan	There were no additional actions taken for the reporting year.

**Annual Reporting Metrics**

Phosphorus (Total)	Tonne or Range			On-site Releases, tonne			Disposals, tonne		Off-Site Recycled, tonne
	Used	Created	In Product	Air	Land	Water	On-Site	Off-Site	
Previous Year	100-1000	0	100-1000	0.283	0	1.198	0	1.394	0
Current Year	100-1000	0	100-1000	0.250	0	1.409	0	1.409	0
Difference	-10-100	0	-100-1000	-0.033	0	0.211	0	0.015	0
Percent Difference	-1-10%	0%	-10-100%	-12%	0%	18%	0%	1%	0%
Reductions in plan	0	0	0	0	0	0	0	0	0
Reductions outside plan	0	0	0	0	0	0	0	0	0
Total Reductions	0	0	0	0	0	0	0	0	0
Percent Reductions	0%	0%	0%	0%	0%	0%	0%	0%	0%
Rationale for changes	Process conditions in manufacturing caused higher releases to waste water treatment than previous years								

**Certification**

As of July 31, 2020, I, David Wilcox, certify that I have read the report on the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the information contained in the report is factually accurate and the report complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Phosphorus (Total)

Original Document Signed

David Wilcox, Plant Manager

**2019 Annual Public Reporting for Toxic Substances**  
**Total Particulates, Particulates <= 10 micron, Particulates <=2.5 micron**

**Facility and Contact Information**

Facility NPRI No.	488
Facility MOE No. if assigned	8405
Company legal and trade names of owner and operator of the facility	Ingredion Canada Corporation
Facility street and mailing address	4040 James Street Cardinal, Ontario, K0E 1E0
Name, position, telephone no. of facility public contact	David Wilcox, Plant Manager 613-657-3131
No. of full-time employee equivalent	200
2, 4, and 6 digit NAICS Codes	31-33 Manufacturing 3112 Grain & Oilseed Milling 311221 Wet Corn Milling
UTM spatial coordinates with NAD83 datum	18T 470334m E 49S9196m N
Legal name of Canadian parent company	Ingredion Canada Corporation
Street and mailing address of parent company	1600-90 Burnhamthorpe Road West Mississauga, Ontario, L5B 0H9
Percentage ownership of facility	100

**Toxic Substance Plan Information**

Name and CAS numbers of toxic substance for this report	Total Particulate, CAS NA-M08 PM10 - Particulate <= 10 micron, CAS NA-M09 PM2.5 Particulate <= 2.5 micron, CAS NA-M10
Name and CAS numbers of other substances created or used at facility	Hydrochloric Acid, CAS 7647-01-0 Ammonia (total), CAS NA-16 Hydrogen Sulphide, CAS 7783-06-4 Total Reduced Sulphur, CAS NA-M14 Sulphur Dioxide, CAS 7446-09-5 Nitrogen oxides (expressed as NO2), CAS 11104-93-1 Carbon Monoxide, CAS 630-08-0 Phosphorus (total), CAS NA-22
Date of most recent plan	13-Dec-18
Objectives of plan, and targets	Ingredion has a long history of safe and responsible use of combustion fuels and process operations in Cardinal. This site has already invested significant resources to reduce excess usage of combustion fuels and process operations that create and emit particulates. Through this plan, Ingredion is committed to reducing excess usage of equipment that create and emit particulates. This will be accomplished by assessing potential reductions through material or feedstock substitution, product design or reformulation, equipment or process modification, spill and leak prevention, on-site reuse or recycling, improved inventory management or purchasing techniques, and training or improved operating procedures.
Summarize any amendments to the plan	The original plan was reviewed and updated in 2018. No plan amendments have been made to this version
Summarize the steps taken during the reporting period towards achieving the objectives of the plan	One project was selected for implementation under this plan. Installation of a dustless loading spout was implemented in 2019, which will reduce the amount of fugitive emissions associated with loading operations in future years
Summarize the effectiveness of the steps taken during the reporting period	The reduction step planned for this year was successfully completed.
Review implementation progress and timelines set out in the plan	The reduction step planned for this year was successfully completed. The plan is on track.
Summarize actions taken in this reporting year that were additional to the steps described in the plan	No additional actions were taken in this reporting year.

**2019 Annual Public Reporting for Toxic Substances**  
**Total Particulates, Particulates <= 10 micron, Particulates <=2.5 micron**

**Annual Reporting Metrics**

PMT -- Total Particulates	Tonne or Range		On-site Releases, tonne			Disposals, tonne		Off-Site Recycled, tonne
	Used	Created	Air	Land	Water	On-Site	Off-Site	
Previous Year	0	10-100	78.99	0	0	0	0	0
Current Year	0	10-100	77.464	0	0	0	0	0
Difference	0	1-10	-1.526	0	0	0	0	0
Percent Difference	0%	1-10%	-1.93%	0%	0%	0%	0%	0%
Reductions in plan	0	0	0	0	0	0	0	0
Reductions outside plan	0	0	0	0	0	0	0	0
Total Reductions	0	0	0	0	0	0	0	0
Percent Reductions	0%	0%	0%	0%	0%	0%	0%	0%
Rationale for changes	Normal yearly variances							

PM10 -- Particulates <= 10 micron	Tonne or Range		On-site Releases, tonne			Disposals, tonne		Off-Site Recycled, tonne
	Used	Created	Air	Land	Water	On-Site	Off-Site	
Previous Year	0	10-100	75.476	0	0	0	0	0
Current Year	0	10-100	73.793	0	0	0	0	0
Difference	0	1-10	-1.683	0	0	0	0	0
Percent Difference	0%	1-10%	-2.23%	0%	0%	0%	0%	0%
Reductions in plan	0	0	0	0	0	0	0	0
Reductions outside plan	0	0	0	0	0	0	0	0
Total Reductions	0	0	0	0	0	0	0	0
Percent Reductions	0%	0%	0%	0%	0%	0%	0%	0%
Rationale for changes	Normal yearly variances							

PM2.5 -- Particulates <= 2.5 micron	Tonne or Range		On-site Releases, tonne			Disposals, tonne		Off-Site Recycled, tonne
	Used	Created	Air	Land	Water	On-Site	Off-Site	
Previous Year	0	10-100	74.007	0	0	0	0	0
Current Year	0	10-100	72.257	0	0	0	0	0
Difference	0	1-10	-1.75	0	0	0	0	0
Percent Difference	0%	1-10%	-2.36%	0%	0%	0%	0%	0%
Reductions in plan	0	0	0	0	0	0	0	0
Reductions outside plan	0	0	0	0	0	0	0	0
Total Reductions	0	0	0	0	0	0	0	0
Percent Reductions	0%	0%	0%	0%	0%	0%	0%	0%
Rationale for changes	Normal yearly variances							

**Certification**

As of July 31, 2020, I, David Wilcox, certify that I have read the report on the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the information contained in the report is factually accurate and the report complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Total Particulates      Particulates <= 10 Micron      Particulates <= 2.5 Micron

Original Document Signed

David Wilcox, Plant Manager