



National Pollutant Release Inventory (NPRI) and Partners



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Report Preview

Report Details

| | |
|---------------------|--------------------|
| Report Year | 2018 |
| Report Type: | NPRI,ON MECP TRA |
| Report Status: | Submitted |
| Modified Date/Time: | 31/05/2019 4:50 PM |

Company and Facility Details

| | |
|-------------------|--|
| Company Name: | Viasystems Toronto, Inc. |
| Business Number: | 122456379 |
| Mailing Address: | Delivery Mode: GeneralDelivery Address Line 1: 8150 Sheppard Avenue East City, Province/Territory, Postal Code: Toronto Ontario M1B 5K2 Country: Canada |
| Facility Name: | Sheppard Facility |
| NAICS Code: | 334410 |
| NPRI ID: | 11606 |
| Portable: | No |
| Physical Address: | Address Line 1: 8150 Sheppard Avenue East City, Province/Territory, Postal Code: Toronto Ontario M1B 5K2 Country: Canada Latitude: 43.8031 Longitude: -79.1952 UTM Zone: 17 UTM Easting: 645022 UTM Northing: 4851615 |

Parent Companies

| | |
|----------------|---|
| Company Name: | Sheppard Facility |
| Civic Address: | Address Line 1: City, Province/Territory, Postal Code: None Country: None Latitude: 43.8031 Longitude: -79.1952 |

Permits

| | |
|---|--|
| Number or Permit Number: | 8991-6N5LSA |
| Government Department, Agency, or Program Name: | Ministry of the Environment, Cert. of Air Approval |
| Number or Permit Number: | ON0761503 |

Government Department, Agency, or Program Name:

Ministry of the Environment, Regulation 347

Number or Permit Number:

539945

Government Department, Agency, or Program Name:

CEPA EIHW Export Notice Number (2016 - 2017)

Number or Permit Number:

701067

Government Department, Agency, or Program Name:

CEPA EIHW Export Notice Number (2017 - 2018)

Contacts Details

Contact Type

Technical Contact, Certifying Official, Company Coordinator, Person who prepared the report, Person who coordinated the preparation of the Toxics Reduction Plan, Public Contact

Name:

Mark Scruton

Position:

Dir. of EHSS of AMII

Telephone:

4162082127

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4162082154

Email:

Mark.Scruton@ttm.com

Contact Type

Highest Ranking Employee

Name:

Jon Pereira

Position:

VP Operations of AMII

Telephone:

4162082100

Extension

2206

Email:

Jon.Pereira@ttm.com

Mailing Address:

Delivery Mode: GeneralDelivery
Address Line 1: 8150 Sheppard Avenue East
City, Province/Territory, Postal Code: Toronto Ontario M1B 5K2
Country: Canada

General Information

Number of employees:

594

Activities for Which the 20,000-Hour Employee Threshold Does Not Apply:

None of the above

Activities Relevant to Reporting Dioxins, Furans and Hexacholorobenzene:

None of the above

Activities Relevant to Reporting of Polycyclic Aromatic Hydrocarbons (PAHs):

Wood preservation using creosote: No

Is this the first time the facility is reporting to the NPRI (under current or past ownership):

No

Is the facility controlled by another Canadian company or companies:

No

Did the facility report under other environmental regulations or permits:

Yes

Is the facility required to report one or more NPRI Part 4 substances (Criteria Air Contaminants):

No

General Comments for Facility:

PWB manufacturing

Substance List

| CAS RN | Substance Name | Releases | Releases (Speciated VOCs) | Disposals | Recycling | Unit |
|--------|----------------|----------|---------------------------|-----------|-----------|------|
|--------|----------------|----------|---------------------------|-----------|-----------|------|

| CAS RN | Substance Name | Releases | Releases (Speciated VOCs) | Disposals | Recycling | Unit |
|-----------|----------------------------|----------|---------------------------|-----------|-----------|--------|
| NA - 16 | Ammonia (total) | 15.7200 | N/A | 0.6080 | 21.7300 | tonnes |
| NA - 06 | Copper (and its compounds) | 0.0360 | N/A | 2.2740 | 131.4090 | tonnes |
| 50-00-0 | Formaldehyde | 0.0300 | N/A | 0.0510 | N/A | tonnes |
| 7647-01-0 | Hydrochloric acid | 0.1220 | N/A | 1.7457 | 57.2600 | tonnes |
| NA - 08 | Lead (and its compounds) | 0.1080 | N/A | 11.9270 | 455.7600 | kg |
| 7697-37-2 | Nitric acid | 1.4440 | N/A | 13.5300 | N/A | tonnes |
| 7664-93-9 | Sulphuric acid | 0.0180 | N/A | 17.1800 | N/A | tonnes |

Applicable Programs

| CAS RN | Substance Name | NPRI | ON MECP TRA | ON MECP Reg 127/01 | First report for this substance to the ON MECP TRA |
|-----------|----------------------------|------|-------------|--------------------|--|
| NA - 16 | Ammonia (total) | Yes | Yes | | No |
| NA - 06 | Copper (and its compounds) | Yes | Yes | | No |
| 50-00-0 | Formaldehyde | Yes | Yes | | No |
| 7647-01-0 | Hydrochloric acid | Yes | Yes | | No |
| NA - 08 | Lead (and its compounds) | Yes | Yes | | No |
| 7697-37-2 | Nitric acid | Yes | Yes | | No |
| 7664-93-9 | Sulphuric acid | Yes | Yes | | No |

General Information about the Substance - Releases and Transfers of the Substance

| CAS RN | Substance Name | Was the substance released on-site | The substance will be reported as the sum of releases to all media (total of 1 tonne or less) | 1 tonne or more of a Part 5 Substance (Speciated VOC) was released to air |
|-----------|----------------------------|------------------------------------|---|---|
| NA - 16 | Ammonia (total) | Yes | No | No |
| NA - 06 | Copper (and its compounds) | Yes | Yes | No |
| 50-00-0 | Formaldehyde | Yes | Yes | No |
| 7647-01-0 | Hydrochloric acid | Yes | Yes | No |
| NA - 08 | Lead (and its compounds) | Yes | No | No |
| 7697-37-2 | Nitric acid | Yes | No | No |
| 7664-93-9 | Sulphuric acid | Yes | Yes | No |

General Information about the Substance - Disposals and Off-site Transfers for Recycling

| CAS RN | Substance Name | Was the substance disposed of (on-site or off-site), or transferred for treatment prior to final disposal | Is the facility required to report on disposals of tailings and waste rock for the selected reporting period | Was the substance transferred off-site for recycling |
|-----------|----------------------------|---|--|--|
| NA - 16 | Ammonia (total) | Yes | No | Yes |
| NA - 06 | Copper (and its compounds) | Yes | No | Yes |
| 50-00-0 | Formaldehyde | Yes | No | No |
| 7647-01-0 | Hydrochloric acid | Yes | No | Yes |
| NA - 08 | Lead (and its compounds) | Yes | No | Yes |
| 7697-37-2 | Nitric acid | Yes | No | No |
| 7664-93-9 | Sulphuric acid | Yes | No | No |

General Information about the Substance - Nature of Activities

| CAS RN | Substance Name | Manufacture the Substance | Process the Substance | Otherwise Use of the Substance |
|-----------|----------------------------|---------------------------|--|--|
| NA - 16 | Ammonia (total) | | As a reactant | As a physical or chemical processing aid |
| NA - 06 | Copper (and its compounds) | | As a reactant As an article component | |
| 50-00-0 | Formaldehyde | | As a reactant | As a physical or chemical processing aid |
| 7647-01-0 | Hydrochloric acid | | As a reactant | As a physical or chemical processing aid |
| NA - 08 | Lead (and its compounds) | | As a reactant As an article component | |
| 7697-37-2 | Nitric acid | | As a reactant | As a physical or chemical processing aid |

| CAS RN | Substance Name | Manufacture the Substance | Process the Substance | Otherwise Use of the Substance |
|-----------|----------------|---------------------------|-----------------------|--|
| 7664-93-9 | Sulphuric acid | | As a reactant | As a physical or chemical processing aid |

TRA Quantifications

| CAS RN | Substance Name | Use, Creation, Contained in Product | Quantity | Use ranges for public reporting |
|-----------|----------------------------|-------------------------------------|----------------|---------------------------------|
| NA - 16 | Ammonia (total) | Use | 37.87 tonnes | Yes |
| NA - 16 | Ammonia (total) | Creation | 0 tonnes | Yes |
| NA - 16 | Ammonia (total) | Contained in Product | 0 tonnes | Yes |
| NA - 06 | Copper (and its compounds) | Use | 148.207 tonnes | Yes |
| NA - 06 | Copper (and its compounds) | Creation | 0 tonnes | Yes |
| NA - 06 | Copper (and its compounds) | Contained in Product | 14.49 tonnes | Yes |
| 50-00-0 | Formaldehyde | Use | 20.536 tonnes | Yes |
| 50-00-0 | Formaldehyde | Creation | 0 tonnes | Yes |
| 50-00-0 | Formaldehyde | Contained in Product | 0 tonnes | Yes |
| 7647-01-0 | Hydrochloric acid | Use | 66.61 tonnes | Yes |
| 7647-01-0 | Hydrochloric acid | Creation | 0 tonnes | Yes |
| 7647-01-0 | Hydrochloric acid | Contained in Product | 0 tonnes | Yes |
| NA - 08 | Lead (and its compounds) | Use | 539.932 kg | Yes |
| NA - 08 | Lead (and its compounds) | Creation | 0 kg | Yes |
| NA - 08 | Lead (and its compounds) | Contained in Product | 48.070 kg | Yes |
| 7697-37-2 | Nitric acid | Use | 27.30 tonnes | Yes |
| 7697-37-2 | Nitric acid | Creation | 0 tonnes | Yes |
| 7697-37-2 | Nitric acid | Contained in Product | 0 tonnes | Yes |
| 7664-93-9 | Sulphuric acid | Use | 102.79 tonnes | Yes |
| 7664-93-9 | Sulphuric acid | Creation | 0 tonnes | Yes |
| 7664-93-9 | Sulphuric acid | Contained in Product | 0 tonnes | Yes |

TRA Quantifications - Others

| CAS RN | Substance Name | Change in Method of Quantification | Reasons for Change | Description of how the change impact tracking and quantification of the substance | Description of how an incident(s) affected quantifications | Significant Process Change | Reason for the significant process change |
|-----------|----------------------------|------------------------------------|--------------------|---|--|----------------------------|---|
| NA - 16 | Ammonia (total) | | | | | No | |
| NA - 06 | Copper (and its compounds) | | | | | No | |
| 50-00-0 | Formaldehyde | | | | | No | |
| 7647-01-0 | Hydrochloric acid | | | | | No | |
| NA - 08 | Lead (and its compounds) | | | | | No | |
| 7697-37-2 | Nitric acid | | | | | No | |
| 7664-93-9 | Sulphuric acid | | | | | No | |

On-site Releases - Releases to air

| CAS RN | Substance Name | Category | Basis of Estimate | Detail Code | Quantity |
|-----------|--------------------------|-------------------------|---------------------------|-------------|--------------|
| NA - 16 | Ammonia (total) | Stack or Point Releases | O - Engineering Estimates | | 15.72 tonnes |
| NA - 08 | Lead (and its compounds) | Stack or Point Releases | O - Engineering Estimates | | 0.108 kg |
| 7697-37-2 | Nitric acid | Stack or Point Releases | O - Engineering Estimates | | 1.444 tonnes |

On-site Releases - Releases to air - Total

| CAS RN | Substance Name | Total - Releases to Air |
|-----------|--------------------------|-------------------------|
| NA - 16 | Ammonia (total) | 15.72 tonnes |
| NA - 08 | Lead (and its compounds) | 0.108 kg |
| 7697-37-2 | Nitric acid | 1.444 tonnes |

Total Quantity Released (All Media)

| CAS RN | Substance Name | Category | Basis of Estimate | Detail Code | Quantity |
|---------|----------------------------|-------------------------|---------------------------|-------------|--------------|
| NA - 06 | Copper (and its compounds) | Total Quantity Released | O - Engineering Estimates | | 0.036 tonnes |

| CAS RN | Substance Name | Category | Basis of Estimate | Detail Code | Quantity |
|-----------|-------------------|-------------------------|---------------------------|-------------|--------------|
| 50-00-0 | Formaldehyde | Total Quantity Released | O - Engineering Estimates | | 0.030 tonnes |
| 7647-01-0 | Hydrochloric acid | Total Quantity Released | O - Engineering Estimates | | 0.122 tonnes |
| 7664-93-9 | Sulphuric acid | Total Quantity Released | O - Engineering Estimates | | 0.018 tonnes |

On-site Releases - Total

| CAS RN | Substance Name | Total releases |
|-----------|--------------------------|----------------|
| NA - 16 | Ammonia (total) | 15.72 tonnes |
| NA - 08 | Lead (and its compounds) | 0.108 kg |
| 7697-37-2 | Nitric acid | 1.444 tonnes |

On-site Releases - Quarterly Breakdown of Annual Releases

| CAS RN | Substance Name | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 |
|-----------|----------------------------|-----------|-----------|-----------|-----------|
| NA - 16 | Ammonia (total) | 25 | 25 | 25 | 25 |
| NA - 06 | Copper (and its compounds) | 25 | 25 | 25 | 25 |
| 50-00-0 | Formaldehyde | 25 | 25 | 25 | 25 |
| 7647-01-0 | Hydrochloric acid | 25 | 25 | 25 | 25 |
| NA - 08 | Lead (and its compounds) | 25 | 25 | 25 | 25 |
| 7697-37-2 | Nitric acid | 25 | 25 | 25 | 25 |
| 7664-93-9 | Sulphuric acid | 25 | 25 | 25 | 25 |

On-site Releases - Reasons for Changes in Quantities Released from Previous Year

| CAS RN | Substance Name | Reasons for Changes in Quantities from Previous Year | Comments |
|-----------|----------------------------|--|---|
| 50-00-0 | Formaldehyde | No significant change (i.e. <10% or no change) | |
| 7647-01-0 | Hydrochloric acid | Other (specify in comment field) | Per third party Engineering, modified ECA engineering estimate calculation. |
| 7664-93-9 | Sulphuric acid | Other (specify in comment field) | per third party Engineering, modified ECA engineering estimate calculation. |
| 7697-37-2 | Nitric acid | No significant change (i.e. <10% or no change) | |
| NA - 06 | Copper (and its compounds) | Other (specify in comment field) | Modified ECA Engineering Estimate |
| NA - 08 | Lead (and its compounds) | Other (specify in comment field) | per third party Engineering, modified ECA engineering estimate calculation. |
| NA - 16 | Ammonia (total) | Other (specify in comment field) | per third party Engineering. modified ECA engineering estimate calculation |

Disposals - Off-site Transfers (excluding Tailings and Waste Rock)

| CAS RN | Substance Name | Category | Basis of Estimate | Detail Code | Quantity |
|-----------|----------------------------|----------------------------------|---------------------------|-------------|---------------|
| NA - 16 | Ammonia (total) | Chemical Treatment | O - Engineering Estimates | | 0.491 tonnes |
| NA - 16 | Ammonia (total) | Municipal Sewage Treatment Plant | O - Engineering Estimates | | 0.117 tonnes |
| NA - 06 | Copper (and its compounds) | Chemical Treatment | O - Engineering Estimates | | 2.1720 tonnes |
| NA - 06 | Copper (and its compounds) | Municipal Sewage Treatment Plant | O - Engineering Estimates | | 0.102 tonnes |
| 50-00-0 | Formaldehyde | Municipal Sewage Treatment Plant | O - Engineering Estimates | | 0.051 tonnes |
| 7647-01-0 | Hydrochloric acid | Chemical Treatment | O - Engineering Estimates | | 1.7457 tonnes |
| NA - 08 | Lead (and its compounds) | Chemical Treatment | O - Engineering Estimates | | 11.380 kg |
| NA - 08 | Lead (and its compounds) | Municipal Sewage Treatment Plant | O - Engineering Estimates | | 0.547 kg |
| 7697-37-2 | Nitric acid | Chemical Treatment | O - Engineering Estimates | | 13.53 tonnes |
| 7664-93-9 | Sulphuric acid | Chemical Treatment | O - Engineering Estimates | | 17.18 tonnes |

Disposals - Off-site Transfers (excluding Tailings and Waste Rock) - Total

| CAS RN | Substance Name | Total - Treatment Prior to Final Disposal |
|-----------|----------------------------|---|
| NA - 16 | Ammonia (total) | 0.608 tonnes |
| NA - 06 | Copper (and its compounds) | 2.2740 tonnes |
| 50-00-0 | Formaldehyde | 0.051 tonnes |
| 7647-01-0 | Hydrochloric acid | 1.7457 tonnes |
| NA - 08 | Lead (and its compounds) | 11.927 kg |
| 7697-37-2 | Nitric acid | 13.53 tonnes |
| 7664-93-9 | Sulphuric acid | 17.18 tonnes |

Disposals - Off-site Transfers (excluding Tailings and Waste Rock) - By Facilities

| CAS RN | Substance Name | Category | Off-site Name | Off-site Address | Quantity |
|-----------|----------------------------|----------------------------------|--------------------------------------|--|---------------|
| 50-00-0 | Formaldehyde | Municipal Sewage Treatment Plant | Highland Creek Water Treatment Plant | 1160 Highland Creek W., Toronto, ON, Canada | 0.051 tonnes |
| 7647-01-0 | Hydrochloric acid | Chemical Treatment | Detox Environmental Ltd. | 322 Bennett, Bowmanville, ON, Canada | 1.7457 tonnes |
| 7647-01-0 | Hydrochloric acid | Chemical Treatment | Sure Horizon Environmental | 40 Advance Blvd., Berampton, ON, L6T 4J4, Canada | |
| 7664-93-9 | Sulphuric acid | Chemical Treatment | Detox Environmental Ltd. | 322 Bennett, Bowmanville, ON, Canada | 17.18 tonnes |
| 7664-93-9 | Sulphuric acid | Chemical Treatment | Sure Horizon Environmental | 40 Advance Blvd., Berampton, ON, L6T 4J4, Canada | 0 tonnes |
| 7697-37-2 | Nitric acid | Chemical Treatment | Detox Environmental Ltd. | 322 Bennett, Bowmanville, ON, Canada | 0 tonnes |
| 7697-37-2 | Nitric acid | Chemical Treatment | Sure Horizon Environmental | 40 Advance Blvd., Berampton, ON, L6T 4J4, Canada | 13.53 tonnes |
| NA - 06 | Copper (and its compounds) | Chemical Treatment | Detox Environmental Ltd. | 322 Bennett, Bowmanville, ON, Canada | 1.6113 tonnes |
| NA - 06 | Copper (and its compounds) | Chemical Treatment | Sure Horizon Environmental | 40 Advance Blvd., Berampton, ON, L6T 4J4, Canada | 0.5607 tonnes |
| NA - 06 | Copper (and its compounds) | Chemical Treatment | Highland Creek Water Treatment Plant | 1160 Highland Creek W., Toronto, ON, Canada | |
| NA - 06 | Copper (and its compounds) | Municipal Sewage Treatment Plant | Highland Creek Water Treatment Plant | 1160 Highland Creek W., Toronto, ON, Canada | 0.102 tonnes |
| NA - 08 | Lead (and its compounds) | Chemical Treatment | Detox Environmental Ltd. | 322 Bennett, Bowmanville, ON, Canada | 11.380 kg |
| NA - 08 | Lead (and its compounds) | Chemical Treatment | Highland Creek Water Treatment Plant | 1160 Highland Creek W., Toronto, ON, Canada | |
| NA - 08 | Lead (and its compounds) | Municipal Sewage Treatment Plant | Highland Creek Water Treatment Plant | 1160 Highland Creek W., Toronto, ON, Canada | 0.547 kg |
| NA - 16 | Ammonia (total) | Chemical Treatment | Detox Environmental Ltd. | 322 Bennett, Bowmanville, ON, Canada | 0.491 tonnes |
| NA - 16 | Ammonia (total) | Chemical Treatment | Sure Horizon Environmental | 40 Advance Blvd., Berampton, ON, L6T 4J4, Canada | 0 tonnes |
| NA - 16 | Ammonia (total) | Chemical Treatment | Highland Creek Water Treatment Plant | 1160 Highland Creek W., Toronto, ON, Canada | |
| NA - 16 | Ammonia (total) | Municipal Sewage Treatment Plant | Highland Creek Water Treatment Plant | 1160 Highland Creek W., Toronto, ON, Canada | 0.117 tonnes |

Disposals - Total Quantity Disposed (All Media)

| CAS RN | Substance Name | Total Quantity Disposed (All Media) |
|-----------|----------------------------|-------------------------------------|
| NA - 16 | Ammonia (total) | 0.608 tonnes |
| NA - 06 | Copper (and its compounds) | 2.2740 tonnes |
| 50-00-0 | Formaldehyde | 0.051 tonnes |
| 7647-01-0 | Hydrochloric acid | 1.7457 tonnes |
| NA - 08 | Lead (and its compounds) | 11.927 kg |
| 7697-37-2 | Nitric acid | 13.53 tonnes |
| 7664-93-9 | Sulphuric acid | 17.18 tonnes |

Disposals - Reasons and Comments

| CAS RN | Substance Name | Reasons Why Substance Was Disposed | Reasons for Changes in Quantities from Previous Year | Comments |
|-----------|----------------------------|---|--|--|
| 50-00-0 | Formaldehyde | Contaminated materials | No significant change (i.e. <10% or no change) | |
| 7647-01-0 | Hydrochloric acid | Contaminated materials | Changes in composition of materials released/disposed of/transferred | Changed Tin stripper from PC 1111 to PCI 4600 starting February 2018, which contain 3% HCl as per SDS. Considering all the HCl contained on Tin Stripper was disposed. |
| 7664-93-9 | Sulphuric acid | Contaminated materials | Other (specify in comment field) | No abnormal disposal occurred in 2018 compared to 2016 and 2017, and treated 1 ton more in-house in 2018. |
| 7697-37-2 | Nitric acid | Contaminated materials | Changes in composition of materials released/disposed of/transferred | Decrease in 2018 shipment is due to change in Sn stripper formulation. |
| NA - 06 | Copper (and its compounds) | Production residues Contaminated materials Pollution abatement residues | Other (specify in comment field) | All Cu in filter cake and copper dust were recycled |
| | | Contaminated | | |

| CAS RN | Substance Name | Reasons Why Substance Was Disposed | Reasons for Changes in Quantities from Previous Year | Comments |
|---------|--------------------------|---|--|---|
| NA - 08 | Lead (and its compounds) | materials Pollution abatement residues | Other (specify in comment field) | More work in HASL due to sub-contract work. |
| NA - 16 | Ammonia (total) | Contaminated materials | Changes in composition of materials released/disposed of/transferred | Change to a Sn stripper which is free from Ammonia salts. |

Recycling - Off-site Transfers for Recycling

| CAS RN | Substance Name | Category | Basis of Estimate | Detail Code | Quantity |
|-----------|----------------------------|--|---------------------------|-------------|----------------|
| NA - 16 | Ammonia (total) | Recovery of Inorganic Materials (not metals) | O - Engineering Estimates | | 21.73 tonnes |
| NA - 06 | Copper (and its compounds) | Recovery of Metals and Metal Compounds | O - Engineering Estimates | | 131.409 tonnes |
| 7647-01-0 | Hydrochloric acid | Recovery of Inorganic Materials (not metals) | O - Engineering Estimates | | 57.26 tonnes |
| NA - 08 | Lead (and its compounds) | Recovery of Metals and Metal Compounds | O - Engineering Estimates | | 455.760 kg |

Recycling - Off-site Transfers for Recycling - Total

| CAS RN | Substance Name | Total - Off-site Transfers for Recycling |
|-----------|----------------------------|--|
| NA - 16 | Ammonia (total) | 21.73 tonnes |
| NA - 06 | Copper (and its compounds) | 131.409 tonnes |
| 7647-01-0 | Hydrochloric acid | 57.26 tonnes |
| NA - 08 | Lead (and its compounds) | 455.760 kg |

Recycling - Off-site Transfers for Recycling - By Facility

| CAS RN | Substance Name | Category | Off-site Name | Off-site Address | Quantity |
|-----------|----------------------------|--|--------------------------------|--|---------------|
| 7647-01-0 | Hydrochloric acid | Recovery of Inorganic Materials (not metals) | Micronutrients | 1550 Research Way, Indianapolis, IN, United States | 57.26 tonnes |
| NA - 06 | Copper (and its compounds) | Recovery of Metals and Metal Compounds | Reldan Metals, LLC | 550 Old Bordentown Road, , Fairless Hills, PA, USA | 54.627 tonnes |
| NA - 06 | Copper (and its compounds) | Recovery of Metals and Metal Compounds | Micronutrients | 1550 Research Way, Indianapolis, IN, United States | 63.245 tonnes |
| NA - 06 | Copper (and its compounds) | Recovery of Metals and Metal Compounds | Combined Metal Industries Inc. | 505 B Garyray Dr., Weston, ON, Canada | 4.884 tonnes |
| NA - 06 | Copper (and its compounds) | Recovery of Metals and Metal Compounds | Detox Environmental Ltd. | 322 Bennett, Bowmanville, ON, Canada | 8.653 tonnes |
| NA - 08 | Lead (and its compounds) | Recovery of Metals and Metal Compounds | Combined Metal Industries Inc. | 505 B Garyray Dr., Weston, ON, Canada | 455.760 kg |
| NA - 16 | Ammonia (total) | Recovery of Inorganic Materials (not metals) | Micronutrients | 1550 Research Way, Indianapolis, IN, United States | 21.73 tonnes |

Recycling - Reasons and Comments

| CAS RN | Substance Name | Reasons Why Substance Was Recycled | Reasons for Changes in Quantities Recycled from Previous Year | Comments |
|-----------|----------------------------|--|---|--|
| 50-00-0 | Formaldehyde | | Other (specify in comment field) | Formaldehyde not recycled |
| 7647-01-0 | Hydrochloric acid | Contaminated materials | Decrease in production levels | 10% less laminate released to the floor per issuance report. Improvement in HCl N control of DES (drop from 1-1.1 N to 0.8N) P2 improvement. |
| 7664-93-9 | Sulphuric acid | | Other (specify in comment field) | H2SO4 not being recycled |
| 7697-37-2 | Nitric acid | | Other (specify in comment field) | Nitric Acid is not recycled |
| NA - 06 | Copper (and its compounds) | Production Residues Contaminated materials Unusable parts or discards Pollution abatement residues Machine or finishing residues | Other (specify in comment field) | All Filter Cake, scrap materials, as well as Drill and Router dust were sent out for recycling. |
| NA - 08 | Lead (and its compounds) | Off-specification products Contaminated materials Unusable parts or discards | Increase in production levels Other (specify in comment field) | More HASL work due to sub-contract. |
| NA - 16 | Ammonia (total) | Contaminated materials | Decrease in production levels | Less recycled, since less ammonia purchased. |

| CAS RN | Substance Name | Is Breakdown | Category | Quantity | Last Reported Quantity | Reporting Period of Last Reported Quantity | Change | % Change |
|-----------|----------------------------|--------------|---------------------------|----------------|------------------------|--|---------|----------|
| NA - 16 | Ammonia (total) | No | Enters the facility (Use) | 37.87 tonnes | 42.95 tonnes | 2017 | -5.08 | -11.83 |
| NA - 16 | Ammonia (total) | No | Creation | 0 tonnes | 0 tonnes | 2017 | 0 | |
| NA - 16 | Ammonia (total) | No | Contained in Product | 0 tonnes | 0 tonnes | 2017 | 0 | |
| NA - 06 | Copper (and its compounds) | No | Enters the facility (Use) | 148.207 tonnes | 164.757 tonnes | 2017 | -16.550 | -10.05 |
| NA - 06 | Copper (and its compounds) | No | Creation | 0 tonnes | 0 tonnes | 2017 | 0 | |
| NA - 06 | Copper (and its compounds) | No | Contained in Product | 14.49 tonnes | 25.06 tonnes | 2017 | -10.57 | -42.18 |
| 50-00-0 | Formaldehyde | No | Enters the facility (Use) | 20.536 tonnes | 19.489 tonnes | 2017 | 1.047 | 5.37 |
| 50-00-0 | Formaldehyde | No | Creation | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 50-00-0 | Formaldehyde | No | Contained in Product | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7647-01-0 | Hydrochloric acid | No | Enters the facility (Use) | 66.61 tonnes | 90.73 tonnes | 2017 | -24.12 | -26.58 |
| 7647-01-0 | Hydrochloric acid | No | Creation | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7647-01-0 | Hydrochloric acid | No | Contained in Product | 0 tonnes | 0 tonnes | 2017 | 0 | |
| NA - 08 | Lead (and its compounds) | No | Enters the facility (Use) | 539.932 kg | 334.842 kg | 2017 | 205.090 | 61.25 |
| NA - 08 | Lead (and its compounds) | No | Creation | 0 kg | 0 kg | 2017 | 0 | |
| NA - 08 | Lead (and its compounds) | No | Contained in Product | 48.070 kg | 30.694 kg | 2017 | 17.376 | 56.61 |
| 7697-37-2 | Nitric acid | No | Enters the facility (Use) | 27.30 tonnes | 34.27 tonnes | 2017 | -6.97 | -20.34 |
| 7697-37-2 | Nitric acid | No | Creation | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7697-37-2 | Nitric acid | No | Contained in Product | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7664-93-9 | Sulphuric acid | No | Enters the facility (Use) | 102.79 tonnes | 112.22 tonnes | 2017 | -9.43 | -8.40 |
| 7664-93-9 | Sulphuric acid | No | Creation | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7664-93-9 | Sulphuric acid | No | Contained in Product | 0 tonnes | 0 tonnes | 2017 | 0 | |

Comparison Report - Enters, Creation, Contained in Product : Reason(s) for Change

| CAS RN | Substance Name | Reason(s) for Change | Other Reason |
|-----------|----------------------------|--|---|
| NA - 16 | Ammonia (total) | Decrease in production levels Implementation of toxics reduction option(s) Other | Used SES replenisher for pH and Chloride control, did not use NH4OH in 2018 |
| NA - 06 | Copper (and its compounds) | Other | In 2018, more mass lam received, and 10% to 15% less laminate and foils purchased in 2018 |
| 50-00-0 | Formaldehyde | No reasons - quantities approximately the same | |
| 7647-01-0 | Hydrochloric acid | Other | Replaced the DI System with the RO System on May 2018, unlike the DI, the RO does not need any HCl. |
| NA - 08 | Lead (and its compounds) | Increase in production levels Other | More work in HASL due to sub-contract. |
| 7697-37-2 | Nitric acid | Other | switched Sn strippers which did not work well in 2017 and increased the reuse of Ni tank stripper. |
| 7664-93-9 | Sulphuric acid | No reasons - quantities approximately the same Other | PAL 2 D&R issue in 2017 and 2016, while 2018 was a normal year, no large D&R. |

Comparison Report - On-site Releases

| CAS RN | Substance Name | Is Breakdown | Category | Quantity | Last Reported Quantity | Reporting Period of Last Reported Quantity | Change | % Change |
|---------|-----------------|--------------|-------------------------|--------------|------------------------|--|--------|----------|
| NA - 16 | Ammonia (total) | No | Total Releases to Air | 15.72 tonnes | 16.17 tonnes | 2017 | -0.45 | -2.78 |
| NA - 16 | Ammonia (total) | No | Total Releases to Water | 0 tonnes | 0 tonnes | 2017 | 0 | |
| NA - 16 | Ammonia (total) | No | Total Releases to Land | 0 tonnes | 0 tonnes | 2017 | 0 | |

| CAS RN | Substance Name | Is Breakdown | Category | Quantity | Last Reported Quantity | Reporting Period of Last Reported Quantity | Change | % Change |
|-----------|----------------------------|--------------|-----------------------------|--------------|------------------------|--|--------|----------|
| NA - 16 | Ammonia (total) | No | Total Releases to All Media | 0 tonnes | | | | |
| NA - 06 | Copper (and its compounds) | No | Total Releases to Air | 0 tonnes | | | | |
| NA - 06 | Copper (and its compounds) | No | Total Releases to Water | 0 tonnes | | | | |
| NA - 06 | Copper (and its compounds) | No | Total Releases to Land | 0 tonnes | | | | |
| NA - 06 | Copper (and its compounds) | No | Total Releases to All Media | 0.036 tonnes | 0 tonnes | 2017 | 0.036 | 100 |
| 50-00-0 | Formaldehyde | No | Total Releases to Air | 0 tonnes | | | | |
| 50-00-0 | Formaldehyde | No | Total Releases to Water | 0 tonnes | | | | |
| 50-00-0 | Formaldehyde | No | Total Releases to Land | 0 tonnes | | | | |
| 50-00-0 | Formaldehyde | No | Total Releases to All Media | 0.030 tonnes | 0.03 tonnes | 2017 | 0.000 | 0.0 |
| 7647-01-0 | Hydrochloric acid | No | Total Releases to Air | 0 tonnes | | | | |
| 7647-01-0 | Hydrochloric acid | No | Total Releases to Water | 0 tonnes | | | | |
| 7647-01-0 | Hydrochloric acid | No | Total Releases to Land | 0 tonnes | | | | |
| 7647-01-0 | Hydrochloric acid | No | Total Releases to All Media | 0.122 tonnes | 0.90 tonnes | 2017 | -0.778 | -86.44 |
| NA - 08 | Lead (and its compounds) | No | Total Releases to Air | 0.108 kg | 0.020 kg | 2017 | 0.088 | 440.0 |
| NA - 08 | Lead (and its compounds) | No | Total Releases to Water | 0 kg | 0 kg | 2017 | 0 | |
| NA - 08 | Lead (and its compounds) | No | Total Releases to Land | 0 kg | 0 kg | 2017 | 0 | |
| NA - 08 | Lead (and its compounds) | No | Total Releases to All Media | 0 kg | | | | |
| 7697-37-2 | Nitric acid | No | Total Releases to Air | 1.444 tonnes | 1.394 tonnes | 2017 | 0.050 | 3.59 |
| 7697-37-2 | Nitric acid | No | Total Releases to Water | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7697-37-2 | Nitric acid | No | Total Releases to Land | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7697-37-2 | Nitric acid | No | Total Releases to All Media | 0 tonnes | | | | |
| 7664-93-9 | Sulphuric acid | No | Total Releases to Air | 0 tonnes | | | | |
| 7664-93-9 | Sulphuric acid | No | Total Releases to Water | 0 tonnes | | | | |
| 7664-93-9 | Sulphuric acid | No | Total Releases to Land | 0 tonnes | | | | |
| 7664-93-9 | Sulphuric acid | No | Total Releases to All Media | 0.018 tonnes | 0.0002 tonnes | 2017 | 0.0178 | 8900 |

Comparison Report - On-site Releases - Reason(s) for Change

| CAS RN | Substance Name | Reason(s) for Change | Other Reason |
|-----------|----------------------------|--|---|
| NA - 16 | Ammonia (total) | Other | per third party Engineering, modified ECA engineering estimate calculation. |
| NA - 06 | Copper (and its compounds) | Other | Modified ECA Engineering estimates |
| 50-00-0 | Formaldehyde | No reasons - quantities approximately the same | |
| 7647-01-0 | Hydrochloric acid | Other | per third party Engineering modified ECA engineering calculation. |
| NA - 08 | Lead (and its compounds) | Increase in production levels Other | per third party Engineering, modified ECA engineering estimate calculation |
| 7697-37-2 | Nitric acid | Other | per third party Engineering, Modified ECA engineering estimate calculation. |
| 7664-93-9 | Sulphuric acid | Other | per third party Engineering modified ECA engineering estimate calculation. |

Comparison Report - Disposals On-site, Off-site and Tailings and Waste Rock

| CAS RN | Substance Name | Is Breakdown | Category | Quantity | Last Reported Quantity | Reporting Period of Last Reported Quantity | Change | % Change |
|--------|----------------|--------------|----------|----------|------------------------|--|--------|----------|
|--------|----------------|--------------|----------|----------|------------------------|--|--------|----------|

| CAS RN | Substance Name | Is Breakdown | Category | Quantity | Last Reported Quantity | Reporting Period of Last Reported Quantity | Change | % Change |
|-----------|----------------------------|--------------|---|---------------|------------------------|--|---------|----------|
| NA - 16 | Ammonia (total) | No | Total On-site Disposals | 0 tonnes | 0 tonnes | 2017 | 0 | |
| NA - 16 | Ammonia (total) | No | Total Off-site Disposals | 0 tonnes | 0 tonnes | 2017 | 0 | |
| NA - 16 | Ammonia (total) | No | Total Off-site transfer for treatment Prior to Final Disposal | 0.608 tonnes | 0.965 tonnes | 2017 | -0.357 | -36.99 |
| NA - 16 | Ammonia (total) | No | Total On-site Disposal of Tailings and Waste Rock | 0 tonnes | 0 tonnes | 2017 | 0 | |
| NA - 16 | Ammonia (total) | No | Total Off-site Disposal of Tailings and Waste Rock | 0 tonnes | 0 tonnes | 2017 | 0 | |
| NA - 06 | Copper (and its compounds) | No | Total On-site Disposals | 0 tonnes | 0 tonnes | 2017 | 0 | |
| NA - 06 | Copper (and its compounds) | No | Total Off-site Disposals | 0 tonnes | 0 tonnes | 2017 | 0 | |
| NA - 06 | Copper (and its compounds) | No | Total Off-site transfer for treatment Prior to Final Disposal | 2.2740 tonnes | 9.68 tonnes | 2017 | -7.4060 | -76.51 |
| NA - 06 | Copper (and its compounds) | No | Total On-site Disposal of Tailings and Waste Rock | 0 tonnes | 0 tonnes | 2017 | 0 | |
| NA - 06 | Copper (and its compounds) | No | Total Off-site Disposal of Tailings and Waste Rock | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 50-00-0 | Formaldehyde | No | Total On-site Disposals | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 50-00-0 | Formaldehyde | No | Total Off-site Disposals | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 50-00-0 | Formaldehyde | No | Total Off-site transfer for treatment Prior to Final Disposal | 0.051 tonnes | 0.051 tonnes | 2017 | 0.000 | 0 |
| 50-00-0 | Formaldehyde | No | Total On-site Disposal of Tailings and Waste Rock | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 50-00-0 | Formaldehyde | No | Total Off-site Disposal of Tailings and Waste Rock | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7647-01-0 | Hydrochloric acid | No | Total On-site Disposals | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7647-01-0 | Hydrochloric acid | No | Total Off-site Disposals | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7647-01-0 | Hydrochloric acid | No | Total Off-site transfer for treatment Prior to Final Disposal | 1.7457 tonnes | 0.0049 tonnes | 2017 | 1.7408 | 35526.53 |
| 7647-01-0 | Hydrochloric acid | No | Total On-site Disposal of Tailings and Waste Rock | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7647-01-0 | Hydrochloric acid | No | Total Off-site Disposal of Tailings and Waste Rock | 0 tonnes | 0 tonnes | 2017 | 0 | |
| NA - 08 | Lead (and its compounds) | No | Total On-site Disposals | 0 kg | 0 kg | 2017 | 0 | |
| NA - 08 | Lead (and its compounds) | No | Total Off-site Disposals | 0 kg | 0 kg | 2017 | 0 | |
| NA - 08 | Lead (and its compounds) | No | Total Off-site transfer for treatment Prior to Final Disposal | 11.927 kg | 5.814 kg | 2017 | 6.113 | 105.14 |
| NA - 08 | Lead (and its compounds) | No | Total On-site Disposal of Tailings and Waste Rock | 0 kg | 0 kg | 2017 | 0 | |
| NA - 08 | Lead (and its compounds) | No | Total Off-site Disposal of Tailings and Waste Rock | 0 kg | 0 kg | 2017 | 0 | |
| 7697-37-2 | Nitric acid | No | Total On-site Disposals | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7697-37-2 | Nitric acid | No | Total Off-site Disposals | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7697-37-2 | Nitric acid | No | Total Off-site transfer for treatment Prior to Final Disposal | 13.53 tonnes | 19.64 tonnes | 2017 | -6.11 | -31.11 |
| 7697-37-2 | Nitric acid | No | Total On-site Disposal of Tailings and Waste Rock | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7697-37-2 | Nitric acid | No | Total Off-site Disposal of Tailings and Waste Rock | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7664-93-9 | Sulphuric acid | No | Total On-site Disposals | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7664-93-9 | Sulphuric acid | No | Total Off-site Disposals | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7664-93-9 | Sulphuric acid | No | Total Off-site transfer for treatment Prior to Final Disposal | 17.18 tonnes | 25.40 tonnes | 2017 | -8.22 | -32.36 |
| 7664-93-9 | Sulphuric acid | No | Total On-site Disposal of Tailings and Waste Rock | 0 tonnes | 0 tonnes | 2017 | 0 | |
| 7664-93-9 | Sulphuric acid | No | Total Off-site Disposal of Tailings and Waste Rock | 0 tonnes | 0 tonnes | 2017 | 0 | |

Comparison Report - Disposals On-site, Off-site and Tailings and Waste Rock - Reason(s) for Change

| CAS RN | Substance Name | Reason(s) for Change | Other Reason |
|---------|-----------------|----------------------|--|
| NA - 16 | Ammonia (total) | Other | Changed to Ammonia Salt free Sn Stripper |

| CAS RN | Substance Name | Reason(s) for Change | Other Reason |
|-----------|----------------------------|--|---|
| NA - 06 | Copper (and its compounds) | Other | All Cu in filter cake and drill/rout dusts were recycled. |
| 50-00-0 | Formaldehyde | No reasons - quantities approximately the same | |
| 7647-01-0 | Hydrochloric acid | Other | Changed Tin Stripper on February 2018, which contain 3% HCl and Sg of 1.21 as per SDS. |
| NA - 08 | Lead (and its compounds) | Increase in production levels Other | More work in HASL coming from sub- contract |
| 7697-37-2 | Nitric acid | Other | More Ntric shipped out in 2017 due to poor stipper formulation. |
| 7664-93-9 | Sulphuric acid | Other | No abnormal dump on 2018 compaired to 2017. Additional copper sulphate was shipped out in 2017 compaired to 2018 due to change of supplier (PAL dump) and treated 1 ton more in 2018. |

Comparison Report - Transfers off-site for Recycling

| CAS RN | Substance Name | Is Breakdown | Category | Quantity | Last Reported Quantity | Reporting Period of Last Reported Quantity | Change | % Change |
|-----------|----------------------------|--------------|--|----------------|------------------------|--|---------|----------|
| NA - 16 | Ammonia (total) | No | Total off-site Transfers for Recycling | 21.73 tonnes | 25.82 tonnes | 2017 | -4.09 | -15.84 |
| NA - 06 | Copper (and its compounds) | No | Total off-site Transfers for Recycling | 131.409 tonnes | 130.02 tonnes | 2017 | 1.389 | 1.07 |
| 7647-01-0 | Hydrochloric acid | No | Total off-site Transfers for Recycling | 57.26 tonnes | 63.74 tonnes | 2017 | -6.48 | -10.17 |
| NA - 08 | Lead (and its compounds) | No | Total off-site Transfers for Recycling | 455.760 kg | 298.314 kg | 2017 | 157.446 | 52.78 |

Comparison Report - Transfers off-site for Recycling - Reason(s) for Change

| CAS RN | Substance Name | Reason(s) for Change | Other Reason |
|-----------|----------------------------|--|---|
| NA - 16 | Ammonia (total) | Decrease in production levels Other | less SES replenisher purchased. |
| NA - 06 | Copper (and its compounds) | Other | All of Cu in filter cake and drill/rout dust were recycled. |
| 7647-01-0 | Hydrochloric acid | Other | 10% less Laminates released to the floor per issuance report. Improvement in HCl N control of DES (drop form 1 - 1.1 N to 0.8 N t |
| NA - 08 | Lead (and its compounds) | Increase in production levels Other | more work in HASL from sub- contract. |

Pollution Prevention

Does the facility have a documented pollution prevention plan?

Yes

a) Please check all that apply

Plan was prepared or implemented for another government jurisdiction (i.e. other Federal government department, province, municipality). Specify name in comments field below.

b) Did the facility update their plan in the current reporting year?

No

c) Does the plan address substances, energy conservation, or water conservation?

Substances (provide the name of the primary Substances in the comments field below)

Please summarize your pollution prevention plan. If you selected "Substances", please specify the substances that were addressed in your plan (this information will be publicly available).

We have an MOE TRA Plan and a City of Toronto P2 Plan. The MOE TRA plan includes Copper, Ammonia, Formaldehyde, Lead, Nitric Acid, Sulfuric Acid and Hydrochloric Acid. The City Plan also includes Nickel.

Did the facility complete any pollution prevention activities in the current NPRI reporting year

Yes

Pollution Prevention Activities

| Category | Activity | Name and description of the other activity |
|---|---|---|
| Equipment or Process Modification | Modified equipment, layout or piping Improved application techniques | Replaced DI system with RO system saving HCl. We improved normality control of HCl reactor, which reduced the normality variance. |
| Good Operating Practice or Training | Other (specify in comments field) | Implemented ISO 14001 certification. |
| Inventory Management or Purchasing Techniques | | |
| Materials or Feedstock | | |

| Category | Activity | Name and description of the other activity |
|---------------------------------------|---|--|
| Substitution | | |
| On-site Reuse, Recycling or Recovery | Instituted recirculation within a process | Improved the reuse of Nitric Acid stripping of Nickel tank. |
| Other Pollution Prevention Activities | Other pollution prevention activities (specify in comments field) | Diverted Copper from land fill to third party smelter. |
| Product Design or Reformulation | | |
| Spill and Leak Prevention | | Potential spill or leak are being monitored through LPA program. |

Progress on TRA Plan - Objectives

| CAS RN | Substance Name | Objectives |
|-----------|----------------------------|--|
| NA - 16 | Ammonia (total) | Viasystems intends to reduce NH3 but additional research and testing is required prior to stating any commitment |
| NA - 06 | Copper (and its compounds) | DDi has successfully implemented the toxic reduction option. |
| 50-00-0 | Formaldehyde | DDi intends to conduct further research to identify new reduction options |
| 7647-01-0 | Hydrochloric acid | DDi intends to reduce HCL but additional research and testing is required prior to the commitment. |
| NA - 08 | Lead (and its compounds) | DDi intends to reduce the use of Lead in the HASL process. |
| 7697-37-2 | Nitric acid | Viasystems intends to reduce HNO3 but additional research and testing is required prior to any commitment |
| 7664-93-9 | Sulphuric acid | DDi intends to reduce H2SO4 but additional research and testing is required prior to the commitment |

Progress on TRA Plan - Use Targets

| CAS RN | Substance Name | Quantity | Years | Description of Target |
|-----------|----------------------------|--------------------|--------------------|-----------------------|
| NA - 16 | Ammonia (total) | No quantity target | No timeline target | |
| NA - 06 | Copper (and its compounds) | No quantity target | No timeline target | |
| 50-00-0 | Formaldehyde | No quantity target | No timeline target | |
| 7647-01-0 | Hydrochloric acid | No quantity target | No timeline target | |
| NA - 08 | Lead (and its compounds) | 90.83 kg | 2 | Q4 2014 |
| 7697-37-2 | Nitric acid | No quantity target | No timeline target | |
| 7664-93-9 | Sulphuric acid | No quantity target | No timeline target | |

Progress on TRA Plan - Creation Targets

| CAS RN | Substance Name | Quantity | Years | Description of Target |
|-----------|----------------------------|--------------------|--------------------|-----------------------|
| NA - 16 | Ammonia (total) | No quantity target | No timeline target | |
| NA - 06 | Copper (and its compounds) | No quantity target | No timeline target | |
| 50-00-0 | Formaldehyde | No quantity target | No timeline target | |
| 7647-01-0 | Hydrochloric acid | No quantity target | No timeline target | |
| NA - 08 | Lead (and its compounds) | No quantity target | No timeline target | |
| 7697-37-2 | Nitric acid | No quantity target | No timeline target | |
| 7664-93-9 | Sulphuric acid | No quantity target | No timeline target | |

Progress on TRA Plan - Toxic Reduction Options Implemented

| CAS RN | Substance Name | Activity | Steps that were taken in the reporting period to implement the toxic reduction option | Public summary of the description of the steps | Comparison of the steps that were described in the plan for implementation with the actual steps taken during the reporting period | Public summary of the comparison of the steps |
|-----------|--------------------------|---|--|--|--|--|
| NA - 16 | Ammonia (total) | Other | NA | NA | No change | No change |
| NA - 08 | Lead (and its compounds) | Modified equipment, layout or piping | Plans to remove the HASL is being considered. Not much work being produced in this machine except from outside contract. | Plans to remove the HASL is being considered. | Plan not implemented to date. Directing customers to other final finishes. | Plan not implemented to date. Directing customers to other final finishes. |
| 7697-37-2 | Nitric acid | Changed to aqueous cleaners | Upgraded Tin Stripper and increased the reuse of in house Nickel tank stripper solution. | Upgraded Tin Stripper and increased the reuse of in house Nickel tank stripper solution. | Changed to new formulation. | Changed to new formulation. |
| 7697-37-2 | Nitric acid | Initiated testing of outdated material | NA | NA | NA | NA |
| 7697-37-2 | Nitric acid | Instituted recirculation within a process | Increased concentration of Nickel stripper, reused multiple times. | Increased concentration of Nickel stripper, reused multiple times. | Changed formulation. | Changed formulation. |
| 7697-37-2 | Nitric acid | Other | NA | NA | NA | NA |

| CAS RN | Substance Name | Activity | Will the timelines in the current version of the plan will be met | Comments: |
|-----------|--------------------------|---|---|-----------|
| NA - 16 | Ammonia (total) | Other | Yes | |
| NA - 08 | Lead (and its compounds) | Modified equipment, layout or piping | Yes | |
| 7697-37-2 | Nitric acid | Changed to aqueous cleaners | Yes | |
| 7697-37-2 | Nitric acid | Initiated testing of outdated material | Yes | |
| 7697-37-2 | Nitric acid | Instituted recirculation within a process | No | |
| 7697-37-2 | Nitric acid | Other | Yes | |

Progress on TRA Plan - Reductions due to Options Implemented - Equipment or process modifications

| CAS RN | Substance Name | Activity | Reductions due to Options Implemented | Quantity |
|-----------|--------------------------|--------------------------------------|--|-------------|
| NA - 08 | Lead (and its compounds) | Modified equipment, layout or piping | The amount of reduction in use of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 08 | Lead (and its compounds) | Modified equipment, layout or piping | The amount of reduction in creation of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 08 | Lead (and its compounds) | Modified equipment, layout or piping | The amount of reduction in the substance contained in product at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 08 | Lead (and its compounds) | Modified equipment, layout or piping | The amount of reduction in release to air of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 08 | Lead (and its compounds) | Modified equipment, layout or piping | The amount of reduction in release to water of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 08 | Lead (and its compounds) | Modified equipment, layout or piping | The amount of reduction in release to land of the substance at the facility during the reporting period that resulted due to steps described: | No Amount |
| NA - 08 | Lead (and its compounds) | Modified equipment, layout or piping | The amount of reduction in the substance disposed on-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 08 | Lead (and its compounds) | Modified equipment, layout or piping | The amount of reduction in the substance disposed off-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 08 | Lead (and its compounds) | Modified equipment, layout or piping | The amount of reduction in the substance recycled off-site at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Changed to aqueous cleaners | The amount of reduction in use of the substance at the facility during the reporting period that resulted due to the steps described: | 6.96 tonnes |
| 7697-37-2 | Nitric acid | Changed to aqueous cleaners | The amount of reduction in creation of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Changed to aqueous cleaners | The amount of reduction in the substance contained in product at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Changed to aqueous cleaners | The amount of reduction in release to air of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Changed to aqueous cleaners | The amount of reduction in release to water of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Changed to aqueous cleaners | The amount of reduction in release to land of the substance at the facility during the reporting period that resulted due to steps described: | No Amount |
| 7697-37-2 | Nitric acid | Changed to aqueous cleaners | The amount of reduction in the substance disposed on-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Changed to aqueous cleaners | The amount of reduction in the substance disposed off-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the steps described: | 6.95 tonnes |
| 7697-37-2 | Nitric acid | Changed to aqueous cleaners | The amount of reduction in the substance recycled off-site at the facility during the reporting period that resulted due to the steps described: | No Amount |

Progress on TRA Plan - Reductions due to Options Implemented - Improved inventory management or purchasing techniques

| CAS RN | Substance Name | Activity | Reductions due to Options Implemented | Quantity |
|-----------|----------------|--|--|-----------|
| 7697-37-2 | Nitric acid | Initiated testing of outdated material | The amount of reduction in use of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Initiated testing of outdated material | The amount of reduction in creation of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Initiated testing of outdated material | The amount of reduction in the substance contained in product at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Initiated testing of outdated material | The amount of reduction in release to air of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Initiated testing of outdated material | The amount of reduction in release to water of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Initiated testing of outdated material | The amount of reduction in release to land of the substance at the facility during the reporting period that resulted due to steps described: | No Amount |
| 7697-37-2 | Nitric acid | Initiated testing of outdated material | The amount of reduction in the substance disposed on-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Initiated testing of outdated material | The amount of reduction in the substance disposed off-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Initiated testing of outdated material | The amount of reduction in the substance recycled off-site at the facility during the reporting period that resulted due to the steps described: | No Amount |

Progress on TRA Plan - Reductions due to Options Implemented - On-site reuse, recycling or recovery

| CAS RN | Substance Name | Activity | Reductions due to Options Implemented | Quantity |
|-----------|----------------|---|--|-----------|
| 7697-37-2 | Nitric acid | Instituted recirculation within a process | The amount of reduction in use of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Instituted recirculation within a process | The amount of reduction in creation of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Instituted recirculation within a process | The amount of reduction in the substance contained in product at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Instituted recirculation within a process | The amount of reduction in release to air of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Instituted recirculation within a process | The amount of reduction in release to water of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Instituted recirculation within a process | The amount of reduction in release to land of the substance at the facility during the reporting period that resulted due to steps described: | No Amount |
| 7697-37-2 | Nitric acid | Instituted recirculation within a process | The amount of reduction in the substance disposed on-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Instituted recirculation within a process | The amount of reduction in the substance disposed off-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Instituted recirculation within a process | The amount of reduction in the substance recycled off-site at the facility during the reporting period that resulted due to the steps described: | No Amount |

Progress on TRA Plan - Reductions due to Options Implemented - Good operator practice or training

| CAS RN | Substance Name | Activity | Reductions due to Options Implemented | Quantity |
|-----------|-----------------|----------|--|-----------|
| NA - 16 | Ammonia (total) | Other | The amount of reduction in use of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 16 | Ammonia (total) | Other | The amount of reduction in creation of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 16 | Ammonia (total) | Other | The amount of reduction in the substance contained in product at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 16 | Ammonia (total) | Other | The amount of reduction in release to air of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 16 | Ammonia (total) | Other | The amount of reduction in release to water of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 16 | Ammonia (total) | Other | The amount of reduction in release to land of the substance at the facility during the reporting period that resulted due to steps described: | No Amount |
| NA - 16 | Ammonia (total) | Other | The amount of reduction in the substance disposed on-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 16 | Ammonia (total) | Other | The amount of reduction in the substance disposed off-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the steps described: | No Amount |
| NA - 16 | Ammonia (total) | Other | The amount of reduction in the substance recycled off-site at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Other | The amount of reduction in use of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Other | The amount of reduction in creation of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Other | The amount of reduction in the substance contained in product at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Other | The amount of reduction in release to air of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Other | The amount of reduction in release to water of the substance at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Other | The amount of reduction in release to land of the substance at the facility during the reporting period that resulted due to steps described: | No Amount |
| 7697-37-2 | Nitric acid | Other | The amount of reduction in the substance disposed on-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Other | The amount of reduction in the substance disposed off-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the steps described: | No Amount |
| 7697-37-2 | Nitric acid | Other | The amount of reduction in the substance recycled off-site at the facility during the reporting period that resulted due to the steps described: | No Amount |

Progress on TRA Plan - Additional Actions

| CAS RN | Substance Name | Were there any additional actions outside the plan taken during the reporting period to reduce the use and/or creation of the substance? | Describe any additional actions that were taken during the reporting period to achieve the plan's objectives | Provide a public summary of the description of the additional action taken |
|---------|-----------------|--|--|--|
| NA - 16 | Ammonia (total) | Yes | Stopped using Ammonium Hydroxide for pH control. | Stopped using Ammonium Hydroxide for pH control. |

| CAS RN | Substance Name | Were there any additional actions outside the plan taken during the reporting period to reduce the use and/or creation of the substance? | Describe any additional actions that were taken during the reporting period to achieve the plan's objectives | Provide a public summary of the description of the additional action taken |
|-----------|----------------------------|--|--|---|
| NA - 06 | Copper (and its compounds) | Yes | Diverted Filter Cake and drill/rout dust from disposal to recycling. | Diverted Filter Cake and drill/rout dust from disposal to recycling. |
| 50-00-0 | Formaldehyde | No | | |
| 7647-01-0 | Hydrochloric acid | Yes | Replaced DI water system with an RO water system | Replaced the DI water system, which uses HCl to regenerate the resin with a RO system which does not consume HCl. |
| NA - 08 | Lead (and its compounds) | Yes | Directed the filter cake and rout dust to recycling | Directed the filter cake and rout dust to recycling. |
| 7697-37-2 | Nitric acid | No | | |
| 7664-93-9 | Sulphuric acid | No | | |

Progress on TRA Plan - Reductions due to additional actions taken

| CAS RN | Substance Name | Reductions due to additional actions taken | Quantity |
|---------|----------------------------|---|-------------|
| NA - 16 | Ammonia (total) | The amount of reduction in use of the substance at the facility during the reporting period that resulted due to the additional actions. | 2.40 tonnes |
| NA - 16 | Ammonia (total) | The amount of reduction in creation of the substance at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| NA - 16 | Ammonia (total) | The amount of reduction in the substance contained in product at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| NA - 16 | Ammonia (total) | The amount of reduction in release to air of the substance at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| NA - 16 | Ammonia (total) | The amount of reduction in release to water of the substance at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| NA - 16 | Ammonia (total) | The amount of reduction in release to land of the substance at the facility during the reporting period that resulted due to additional actions. | No Amount |
| NA - 16 | Ammonia (total) | The amount of reduction in the substance disposed on-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| NA - 16 | Ammonia (total) | The amount of reduction in the substance disposed off-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| NA - 16 | Ammonia (total) | The amount of reduction in the substance recycled off-site at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| NA - 06 | Copper (and its compounds) | The amount of reduction in use of the substance at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| NA - 06 | Copper (and its compounds) | The amount of reduction in creation of the substance at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| NA - 06 | Copper (and its compounds) | The amount of reduction in the substance contained in product at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| NA - 06 | Copper (and its compounds) | The amount of reduction in release to air of the substance at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| NA - 06 | Copper (and its compounds) | The amount of reduction in release to water of the substance at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| NA - 06 | Copper (and its compounds) | The amount of reduction in release to land of the substance at the facility during the reporting period that resulted due to additional actions. | No Amount |
| NA - 06 | Copper (and its compounds) | The amount of reduction in the substance disposed on-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| NA - 06 | Copper (and its compounds) | The amount of reduction in the substance disposed off-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the additional actions. | 7.40 tonnes |
| NA - 06 | Copper (and its compounds) | The amount of reduction in the substance recycled off-site at the facility during the reporting period that resulted due to the additional actions. | No Amount |
| 50-00-0 | Formaldehyde | The amount of reduction in use of the substance at the facility during the reporting period that resulted due to the additional actions. | |
| 50-00-0 | Formaldehyde | The amount of reduction in creation of the substance at the facility during the reporting period that resulted due to the additional actions. | |
| 50-00-0 | Formaldehyde | The amount of reduction in the substance contained in product at the facility during the reporting period that resulted due to the additional actions. | |
| 50-00-0 | Formaldehyde | The amount of reduction in release to air of the substance at the facility during the reporting period that resulted due to the additional actions. | |
| 50-00-0 | Formaldehyde | The amount of reduction in release to water of the substance at the facility during the reporting period that resulted due to the additional actions. | |
| 50-00-0 | Formaldehyde | The amount of reduction in release to land of the substance at the facility during the reporting period that resulted due to additional actions. | |
| 50-00-0 | Formaldehyde | The amount of reduction in the substance disposed on-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the additional actions. | |
| 50-00-0 | Formaldehyde | The amount of reduction in the substance disposed off-site (including tailings and waste rocks) at the facility during the reporting period that resulted due to the additional actions. | |

| CAS RN | Substance Name | Reductions due to additional actions taken | Quantity |
|-----------|----------------|--|----------|
| 7664-93-9 | Sulphuric acid | The amount of reduction in the substance recycled off-site at the facility during the reporting period that resulted due to the additional actions. | |

Progress on TRA Plan - Amendments

| CAS RN | Substance Name | Were any amendments made to the toxic substance reduction plan during the reporting period | Description any amendments that were made to the toxic substance reduction plan during the reporting period | Provide a public summary of the description of any amendments that were made to the toxic substance reduction plan during the reporting period |
|-----------|----------------------------|--|---|--|
| NA - 16 | Ammonia (total) | No | | |
| NA - 06 | Copper (and its compounds) | No | | |
| 50-00-0 | Formaldehyde | No | | |
| 7647-01-0 | Hydrochloric acid | No | | |
| NA - 08 | Lead (and its compounds) | No | | |
| 7697-37-2 | Nitric acid | No | | |
| 7664-93-9 | Sulphuric acid | No | | |

Report Submission and Electronic Certification

NPRI - Electronic Statement of Certification

Specify the language of correspondence

English

Comments (optional)

I hereby certify that I have exercised due diligence to ensure that the submitted information is true and complete. The amounts and values for the facility(ies) identified below are accurate, based on reasonable estimates using available data. The data for the facility(ies) that I represent are hereby submitted to the programs identified below using the Single Window Reporting Application.

I also acknowledge that the data will be made public.

Note: Only the person identified as the Certifying Official or the authorized delegate should submit the report(s) identified below.

Company Name

Viasystems Toronto, Inc.

Certifying Official (or authorized delegate)

Mark Scruton

Report Submitted by

Jon Pereira

I, the Certifying Official or authorized delegate, agree with the statements above and acknowledge that by pressing the "Submit Report(s)" button, I am electronically certifying and submitting the facility report(s) for the identified company to its affiliated programs.

ON MECP TRA - Electronic Certification Statement

Annual Report Certification Statement

As of 31/05/2019, I, Jon Pereira, certify that I have read the reports on the toxic substance reduction plans for the toxic substances referred to below and am familiar with their contents, and to my knowledge the information contained in the reports is factually accurate and the reports comply with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

TRA Substance List*

| CAS RN | Substance Name |
|-----------|----------------------------|
| NA - 16 | Ammonia (total) |
| NA - 06 | Copper (and its compounds) |
| 50-00-0 | Formaldehyde |
| 7647-01-0 | Hydrochloric acid |
| NA - 08 | Lead (and its compounds) |
| 7697-37-2 | Nitric acid |
| 7664-93-9 | Sulphuric acid |

