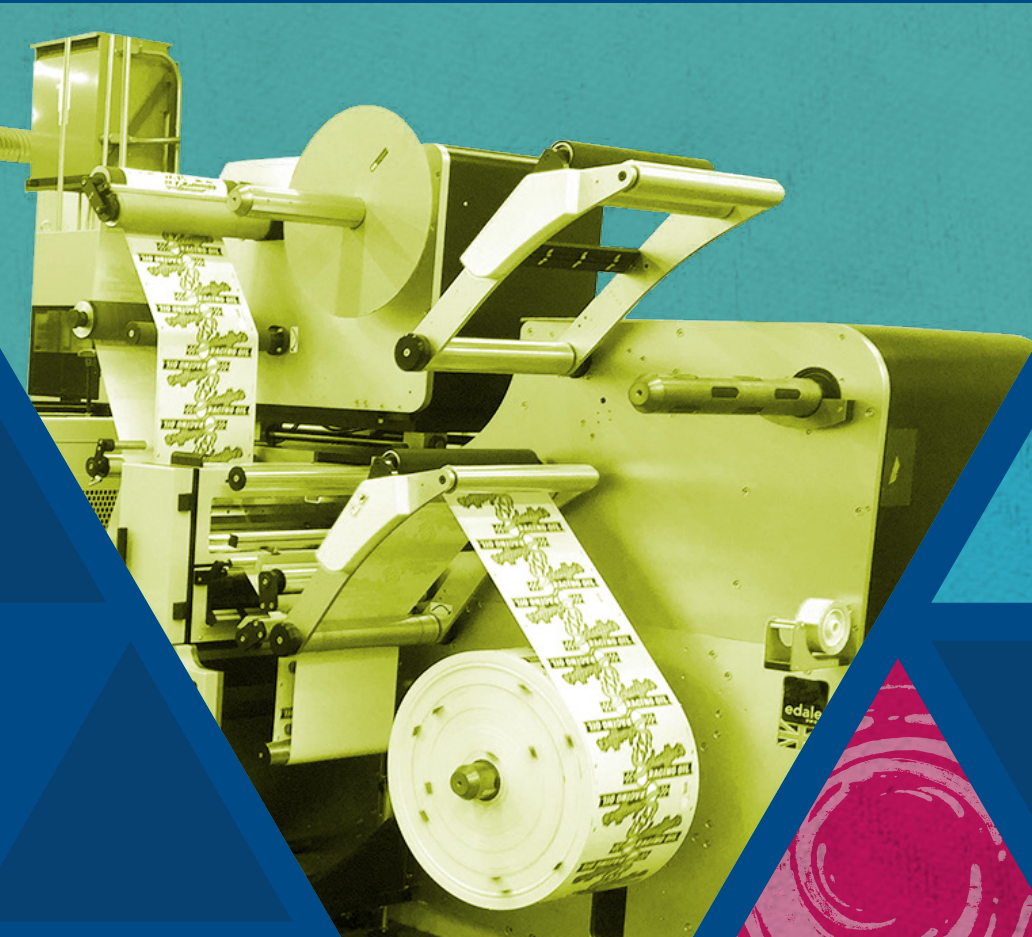


EMPIRE EMS Annual Report

Fiscal Year 2018-2019



EMPIRE EMS Annual Report

Fiscal Year October 2018 to September 2019

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Kristin Soper | @ Unsplash

EMPIRE

EMS Annual Report

Fiscal Year October 2018 to September 2019

Our Company Mission

At Empire, we are dedicated to being a cutting-edge print supplier. We create custom products that enrich our customers' brand and identity by providing a friendly, knowledgeable customer experience every time.

Our Company Vision

Empire is customer focused. We listen to both our internal and external customers and look to improve based upon their input. Through relentless pursuit of customer satisfaction, we work to grow our customer base and make our company strong. We develop our people by investing in education and training to empower them to make improvements to the products, services, processes and themselves. We concentrate on implementing sustainable production methods that are environmentally safe to protect our planet for future generations.

Our Core Values

Respect • Integrity • Responsibility •
Continual Improvement • Knowledge • Excellence



Our Environmental Vision

(Sustainability Policy)

FOCUS

Empire's focus is providing our customers with products and services that produce sustainable results and business practices. Through our relentless pursuit of customer satisfaction, we will grow Empire's customer base and strengthen our company. We will strive to improve our process by listening to our customers, collaborating with our business partners and developing our people through education and training. Our employees will be empowered to continually make improvements to the process, their work environment and themselves. We will develop production methods that implement sustainable environmental, health and safety (EHS) practices into all aspects of our operations.

COMMIT

We commit to being compliant with all applicable EHS and labor regulations (federal and state). We will continue to implement programs and procedures in accordance with these requirements.

PLEDGE

We pledge to look for new opportunities and innovations that will help enhance and improve our sustainability program beyond regulatory compliance. We will strive to incorporate activities and procedures that will reduce our impact on the environment as well as improving the quality of health and wellness of the employees. We will measure our progress through regular audits and annual reviews.

STRIVE

Empire will strive to implement procedures to target prevention of activities, services or products that may cause harm to human health, safety, or the environment. These procedures will be designed to affect Empire and/ or the surrounding community.

COMMUNICATE

We will communicate our sustainability commitment to our employees, vendors, customers and community through educational training and marketing. We will encourage their input on meeting our goals and improving our procedures.

photo by Jay Yehle
(HVAC Specialist)




Executive Summary

(President Statement)

Most companies see the world changing. At Empire, we are changing the world. This year we will be launching a value-add that is unmatched in our industry. We are taking a hard look at how our product is manufactured. We are designing and building equipment that will improve the process. We will use visual control to improve the quality. Our registration will be two to three times better than the industry standard. With these changes our process improvement goals are to have 90% less conveyance, be 30% faster with 35% less labor, and 50% less scrap. We will increase our use of UV LED curing technology. We will be adding an element of sustainability to each manager's responsibility that supports the EMS and the company's vision.

What this means is our manufacturing process has little impact on the environment. It produces an environmentally-friendly product that meets our quality standards and customer expectations, without increasing the cost to the customer.

I look back on where we were and where we are today and can proudly say we have come a long way. I frequently get asked how to make change. My answer is, "DO IT"! This phrase may not sound like much, but it makes change happen. Do something and learn from it, do it again and learn more and then do it again! Changing the world doesn't just happen, but if you do something small, all those small things end up changing the world.


John Freismuth, President

External EMS Audit

(Continuous Improvement)

On May 16, 2019, Empire Screen Printing, Inc. underwent an independent third-party audit of our Environmental Management System (EMS). The audit was performed by Douglas Johnson of Environmental Intelligence, Inc. The results of the audit indicated that the Empire's EMS is in conformance with the requirements found in 299.83 (dg) of the Environmental Results Program and that the EMS is functionally equivalent to the ISO 14001:2004 standard.

The audit yielded no findings of nonconformity. The review included a Level 1-4 documentation review, public document/communications review, and interviews with management and employees. A tour of the offices and observation of work were elements of the audit process. In his letter of conformance, Mr. Johnson indicated that the tour and interviews were extraordinary, impressive and exemplary.

One opportunity for improvement was identified, which was offered as a consideration to support the organization's strategic, forward-looking goals for the management of the business. This improvement opportunity involved training and certifying additional personnel for our standard drinking water testing. This has been done, with certification to be completed in January 2020.



Accomplishments

(Business Friend of the Environment Award)

On August 13th, 2019 in Madison Wisconsin, Wisconsin Manufacturers and Commerce (WMC) announced Empire Screen Printing as the recipient of the 2019 Wisconsin Business Friend of the Environment in recognition of environmental innovation efforts. Empire has gone above regulatory requirements to better support their employees, customers, and the environment.

"It is with great pride that our company has been chosen to receive these awards.

Being recognized in our city, as well as the state only validates the accomplishments of our people. We truly believe our innovations will change the landscape of printing, and we're honored these associations are acknowledging our achievements."

- Jennifer Schloesser (Creative Director, Empire Screen Printing)



Accepting the award: John Freismuth, President (center), and Jennifer Schloesser, Creative Director (right)

(Diamond Recognition Award)

On July 31st, 2019, Empire was recognized by the La Crosse Area Development Association (LADCO) for our innovation in sustainable screen printing technology. Empire received the Diamond Recognition-Manufacturer of the Year Award. This award is presented to a company that has demonstrated leadership, quality, innovation, expansion, export focus, and job creation.



"The City of Onalaska is proud that a major homegrown company such as Empire Screen Printing has decided to maintain and grow its operations here over the decades while demonstrating its commitment to environmental stewardship."

"Having expanded production and diversified its goods to cutting edge high-quality products for many industries, Empire has demonstrated a superior level of innovation, industry leadership, and job creation, without compromising its promise to its employees and community. LADCO and the Coulee Region are truly fortunate to have this company in our backyard and it was LADCO's honor and an easy choice to recognize Empire with its Manufacturer of the Year Award at its 23rd Annual Industry Appreciation event."

- Jorge Beltran (Executive Director, LADCO)



Carina Olson (R&D)



Creating Awareness

(Being a Leader in the Industry)

To be a leader in the industry means you have to be a part of it. To make change happen, you can keep it to yourself or you can drive change to benefit the industry. That's what we have set out to do.

Being part of organizations that matter within our industry is important to reach as many other companies as we can. With that in mind, we are on the board of two major trade associations: Specialty Graphic Imaging Association (SGIA) and National Association of Graphic and Product Identification Manufactureres, Inc. (GPI). Bi-yearly meetings bring like-minded business leaders together to share best practices throughout the industry. These meetings are influential and provide a platform to communicate change and learn from one another on a national level.

Over the last ten years, we have played a pivotal role in promoting UV LED ink curing technology within the screen printing industry. We're able to push change because we have reached out to our partners and suppliers to improve inks, and our ink suppliers have gone above our expectations. In 2020, our goal is to be 0% solvent ink-free in screen printing and we are right on track with our goal. We could not accomplish our goal without the help of our ink suppliers.

On the local front, President, John Freismuth is a member of EPIC21. EPIC21 is an executive peer group for business leaders and provides a platform to share ideas, best practices, build leadership skills and self-improvement. Leaders are from all sorts of different businesses. This is a great place to gain support and knowledge from other members and apply them to their own business.

Every other year, we hold our National Sales Meeting. In 2019, we partnered with SGIA in order to expand our outreach to draw in even more vendors, suppliers, customers, and competitors. This event will take place from July 21st - 23rd, 2020. We have rebranded this show as our Partners in Printing Expo, where we will have over 100 vendors showcasing the latest technology, and covering 5 different print segments: screen, digital, flexographic, offset, and lithography.

National Sales Meeting

2018

**WELCOME
to EMPIRE!**



2018-2019 Objectives Results

OBJECTIVE 1 RESULTS

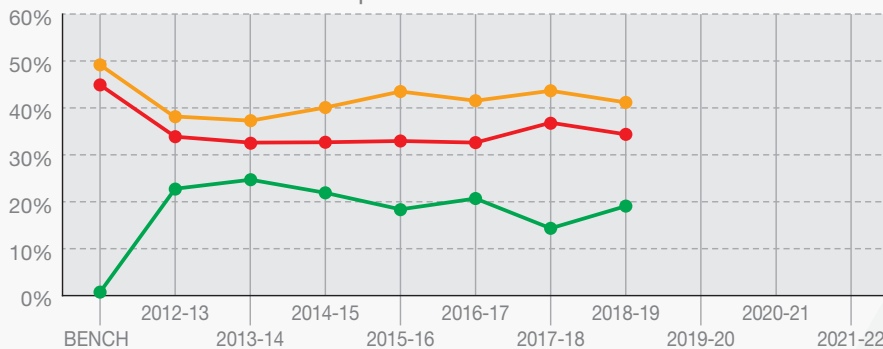
Reduce our annual landfill waste to 23.85% by 2022

Empire Screen identified 2012 as the baseline year for setting a waste reduction goal. In 2012, 47.69% of waste generated was sent to the landfill. By 2022, Empire Screen will reduce the waste sent to the landfill by 50%, with an annual reduction of 2.39%, resulting in no more than 23.85% of all the waste generated being sent to the landfill.

Before 2018, we were averaging an annual reduction of approximately .95%, which is 1.44% under our yearly goal. In 2018, we saw a big jump in landfill waste due to an increase in sales, common materials that aren't recyclable, and new presses that use material and waste that are currently not recyclable. In order to combat the increase in landfill waste and decrease in recycling last year, we created action items:

- » Graphium Ink Boxes were currently going to the landfill. Procedure was changed - the ink bags are pulled out of its cardboard box. The cardboard is sent to recycling, with just the bag going to the landfill. The department goes through an average of 20 boxes per month (approximate 240 per year).
- » In August 2018, D&M Recycling approved the recycling of our most common material - polycarbonate, requesting that it be separated based on whether the material contained adhesive or not. Since re-implementing polycarbonate recycling, we monitored the usage and disposable of this material. Out of our total recycling, polycarbonate with adhesive was 21,570 lbs (**13.26% of total**) and polycarbonate with no adhesive was 17,072 lbs (**10.50% of total**).
- » In addition to the above action items, we had Hilltopper perform a preliminary waste audit to see if there were areas for improvement. They provided us with an alternative single-stream option. Since they would only collect it and not process the waste, we would not be able to document how much unacceptable material is being pulled. We were concerned that a single-stream might cause employees to dump everything into one container even if it can be recycled, so we decided to stay with our current recycling procedure.

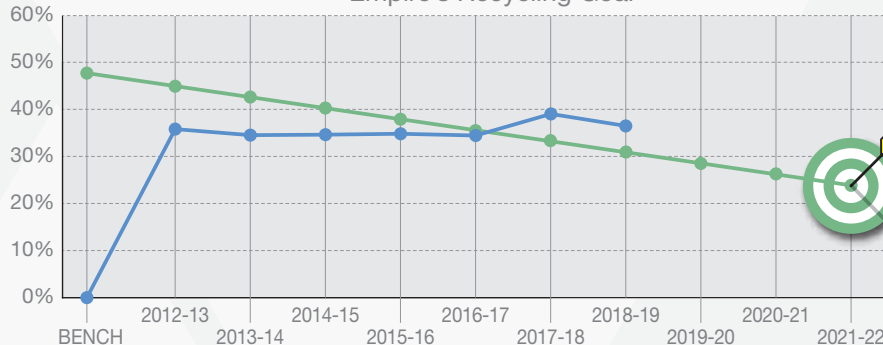
Empire's Generated Waste



FISCAL YEAR	Landfill %	Energy %	Recycle %	Total Waste (tons)	Cost Savings [†]
2011-12*	47.69%	52.31%	0.00%	369.64	---
2012-13	35.77%	40.44%	23.79%	370.96	\$6,618.85
2013-14	34.49%	39.63%	25.87%	351.24	\$6,814.93
2014-15	34.59%	42.56%	22.85%	372.28	\$6,379.95
2015-16	34.78%	46.17%	19.05%	347.28	\$4,961.76
2016-17	34.41%	44.05%	21.54%	408.66	\$4,250.70
2017-18	38.99%	46.34%	14.68%	409.64	\$4,404.52
2018-19	36.44%	43.66%	19.90%	408.57	\$5,956.62

● = Landfill Waste ● = Waste to Energy
● = Recycled Material

Empire's Recycling Goal



YEAR	TARGET	ACTUAL
2011-12	47.69% Benchmark	
2012-13	45.30%	35.77%
2013-14	42.91%	34.49%
2014-15	40.52%	34.59%
2015-16	38.13%	34.78%
2016-17	35.74%	34.41%
2017-18	33.35%	38.99%
2018-19	30.96%	36.44%
2019-20	28.57%	
2020-21	26.18%	
2021-22	23.85%	

● = Target
● = Actual

OBJECTIVE 2 RESULTS

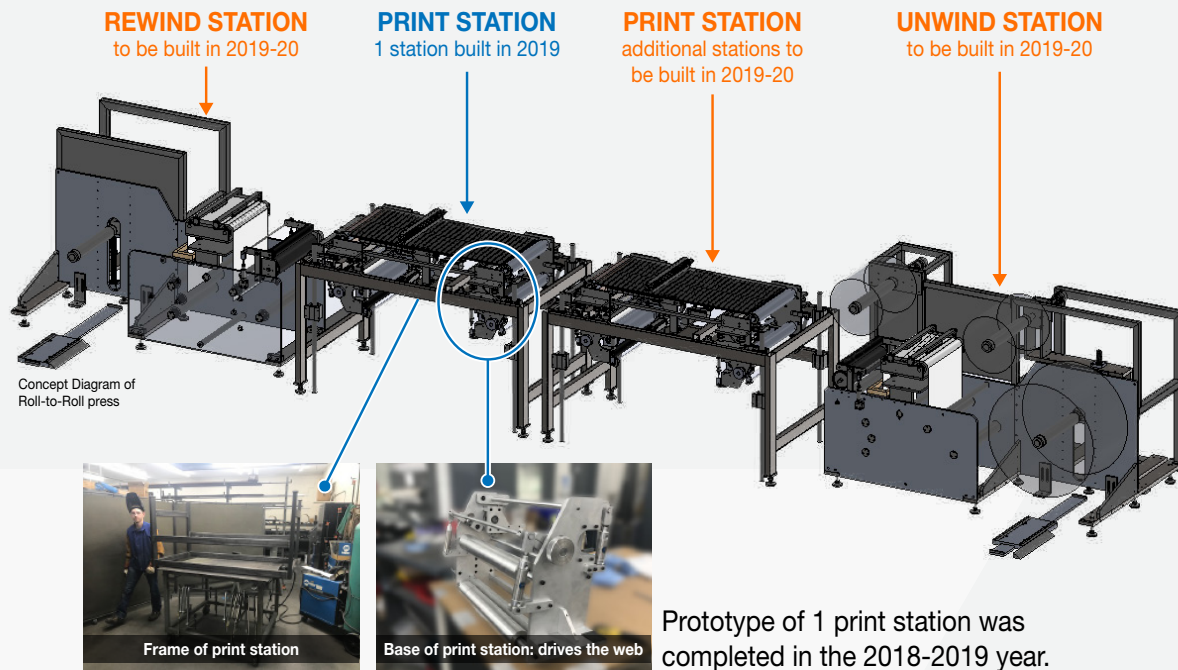
Implement sustainable print methods with equipment using UV LED technology

1. Develop a Roll-to-Roll screen print unit using UV LED technology (press design phase only).

Design phase of the program and prototype of the touch screen technology and motion systems have been completed. Our objective for 2018-19 will be design/build phase of the actual prototype press. *Note: This was originally an objective in 2015-2016, but management decided to put this on hold until the completion of the 12-color press.

On February 20, 2019 during a Supervisor meeting, Empire's Machine Shop employees presented the prototype graphic concepts for the upcoming Roll-to-Roll screen print unit. During this meeting, they outlined the steps that they would be taking for the 2018-2019 fiscal year, which included building a prototype of an actual print station. This print station was built in May of 2019. With this objective completed, we will proceed with the rest of the press, including additional print stations, and rewind/unwind stations. This will be a continuing objective for our 2019-2020 year.

PROTOTYPE OF ROLL-TO-ROLL USING LED TECHNOLOGY



2. Baseline Metrics for new Graphium Press

The Graphium is a hybrid digital/flexo printer that was purchased by Empire. This printer is equipped with LED curing technology in the four Flexo print stations and UV Mercury curing in the digital inks. *Note: This is a continuation from the previous year's objective.

The following action items were completed for the Graphium press metrics:

- » A monitor was attached to the press during run time to determine baseline energy use:

Description	480/400	480 chiller	Flexo LED station	2 Coolers	GEW 480	TOTAL kW
Weekend (not running)	3.6	0	0	0	0	3.6
UV on - press is idle	6.3	1.7	0	0	2.3	10.3
Digital Station	8.1	2.5	0	0	7.9	18.5
Flexo Station*	8.1	2.5	1.1	.25	7.9	19.85
Flexo Station - NOVA White**	8.1	2.5	2.2	.5	7.9	21.2

All numbers are kW *Press has a total of 4 Flexo stations **NOVA is the Flexo White. This is run at 200% power - other Flexo colors run at 100%

The following action items were started but not completed due to our Objective 5 Aspect/Impact failure:

- » The Graphium press was added to our Aspects/Impacts report but has not been completed.
- » Proper procedures for safety, storage, maintenance and waste stream have been implemented. Proper work instructions are still needed to support these procedures.

OBJECTIVE 3 RESULTS

Update/replace equipment as needed for better efficiency and/or per legal and other requirements

Lighting Conversion

Empire Screen will be converting T8 fluorescent bulbs to T8 LED bulbs (15 watt or 18 watt bulbs will be installed) in twelve departments/areas. This conversion will yield a 20-35% decrease in watt usage and is set to be complete by Sept. 30th, 2019.

- Art
- Digital
- Flexo
- Lunchrooms (New & Old)
- Machine Shop
- Stock Cutting
- Customer Service
- Doming
- Graphium
- LVS (Large Value Stream)
- Polycarbonate storage room
- SVS (Small Value Stream)

This was completed in September 2019, except for Art (most lights in the department are not on, so usage is low. It was determined to wait on replacement). Based on the readings after installment, we will have a 33.34% decrease in total watt usage. In addition, these LED lights will have no color shift, which is important in the printing industry (fluorescent bulbs start to have a colorshift after six months), and they produce 20% more light.

OBJECTIVE 3 Additional improvements

The following were not part of our improvement goals, but were accomplished during the 2018-19 fiscal year.

Air Conditioner Replaced

Our Ink Department eliminated a 25-ton air conditioner (with 59,340 kWh annual usage) and replaced it with a 3-ton unit in July 2019 (with 9,185 kWh annual usage), which will produce an 84.52% energy savings.

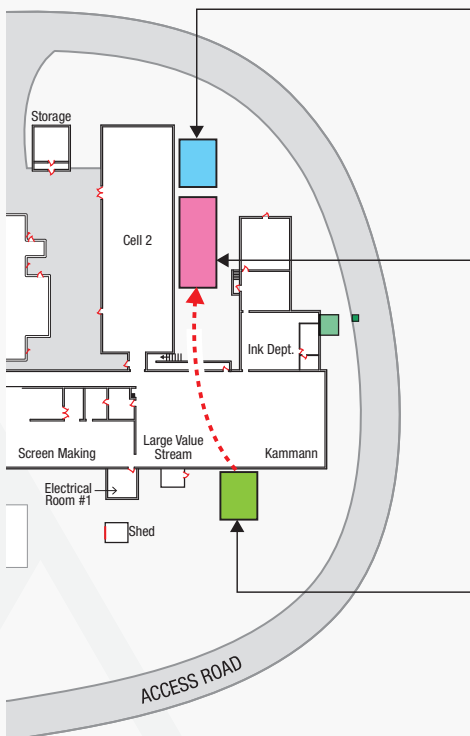
HVAC Units Eliminated/Replaced

One of our Air Handlers (**Air Handler C**), located by our Large Value Stream/Kammann area was no longer needed due to converting to LED curing. This handler only had approximately 300 hours of run time used. This handler was moved to our Cell #2 area and replaced an older unit that was original to the plant in 1992 (**Air Handler B**).

Both the air conditioner and HVAC units were on the same meters. Based on the average natural gas and electrical meter readings from June – September before and after the replacements, there was an 82% reduction in therms* and 31.7% reduction in kWh*.

*Degree days were not factored in

Back of Plant



Air Handler A

Purchased in 2008

BTU	1,620,000
CFM	15,000
Cooling Tonnage	60 tons
Watt Rating	54 kW
Usage*	247,929 kWh
Annual Cost to run	\$18,098

**Usage is based on 7 months out of the year (Not running during the winter)*

Air Handler B

Original to the plant (1992)

BTU	990,000
CFM	15,000
Cooling Tonnage	40 tons
Watt Rating	74 kW
Usage	167,832 kWh
Annual Cost to run	\$12,251

Air Handler C

Purchased in 2016

BTU	300,000
CFM	6,000
Cooling Tonnage	15 tons
Watt Rating	32 kW
Usage	72,576 kWh
Annual Cost to run	\$5,298



Purchased used with approximately 300 hours of run time

OBJECTIVE 4 RESULTS

Re-establish External Stakeholders

Based on EMS Section 7.0 (Communication), Line 6.

During our internal audit, it was suggested that the Green Committee do a review of the stakeholders due to issues with communicating and one member moving out of the area. We re-established our external stakeholders during a review in April 2019, ensuring Empire has the right people in place. A stakeholders meeting via video conference was held on May 13th, 2019. The following people were present:

Internal Stakeholders:

Jennifer Schloesser, Cathy Buttell, Amy Bettis, Keith Cook, Alexis Marsh, Doug Billings, Jeff Gierok.

External Stakeholders:

Shannon Havlik (Sustainability Manager at Organic Valley)

Casey Mehan (Sustainability Coordinator at Western Technical College in La Crosse, WI).

Topics Discussed:

- EMS Annual Report was approved by the Wisconsin DNR in April, 2019
- Presented our future objectives for 2018-19 listed in our Annual Report. Shannon questioned if there was an alternative for the Graphium inks currently being taken to the landfill (ink boxes are recycled but not the ink). She suggested talking to the vendor (Fuji) if possible to see if there are other options for recycling.
- Mentioned that we would like MPower to come out and have a tour, showing our sustainability capabilities.

OBJECTIVE 5 RESULTS

Make improvements based on our 2018 internal audit: Reevaluate and rate the aspects and impact resolutions based on the new scoring system, as well as updating all documentation. This will be done within individual departments/areas and be completed by end of 2020 fiscal year.

Based on EMS Section 2.0 (Identifying Environmental Aspects and Impacts), Line 3-4

Nothing was completed during the first year of this two-year objective. This failure was due to lack of management responsibility and not setting action items throughout the year. Our 2019 Management Review addressed this issue. A new policy deployment will be established which will add an element of sustainability to each manager's responsibility that supports the EMS and the company's vision.

We will re-establish the two year timeline in our next year's objectives, with the completion occurring by end of 2021 fiscal year.



Fawn Marsh
(Doming/Die Making)

2018-2019 Environmental Performance

Fiscal Year
10/2018 – 09/2019

Empire Screen Printing is located in Onalaska, Wisconsin, on a spacious 140.58 acre property. The commercial area covers 12.37 acres with a large 150,000 square foot facility, employing 274 full-time and 31 part-time people.



demographics

Total Sales.....	\$27,237,638
Savings from material/process improvements.....	\$500,000
Profit of.....	\$1,044,388
Total purchases.....	\$25,414,916
Total in-state purchases (approx.)	<i>Info not available</i>
% of purchases from Green Tier companies	<i>Info not available</i>



waste

Hazardous waste (still bottoms)	9 drums (4,500 lb/yr)
Increase from previous year	28.57%
Non-hazardous waste (ink).....	15 drums (7,500 lb/yr)
Reduction from previous year	25.00%
Material recycled/reused.....	81.29 tons/yr
Material sent for energy conversion.....	178.38 tons/yr
Total amount diverted from landfill.....	63.56% of product



energy

Total Electricity used	3,339,000 kWh
Reduction from previous year	7.25%
Total Natural Gas used.....	62,411 Therms
Reduction from previous year	5.51%
Renewable energy	N/A



air

Total air emissions from 01/2018-12/2018	16,350 lbs/yr
Reduction from previous year	7.64%
Ozone-depleting substances (refrigerant added every fiscal year).....	100 lbs/yr
Reduction from previous year	00.00%
Greenhouse gas emissions	N/A

Air emissions are recorded annually



water

Empire has 2 water wells, which are not regulated by the city. The amount of recycled/reused and pollutants discharged is not recorded.



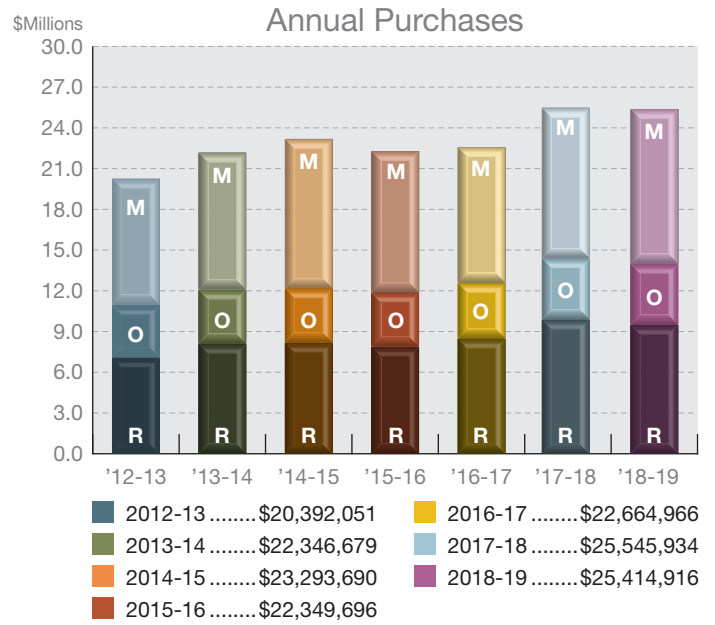
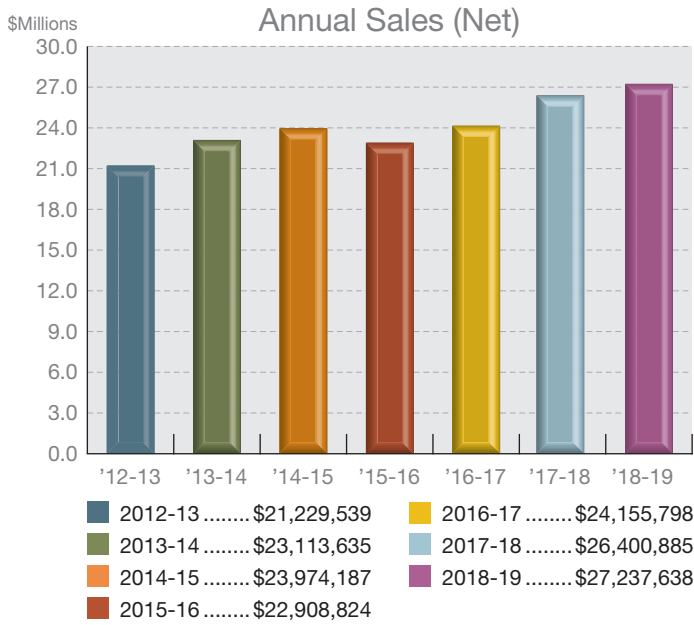
transportation

Hybrid vehicles.....	2
Gas vehicles (includes 1 tractor for mowing)	3
Diesel tractor used for mowing/snow removal.....	1
Vehicle maintenance expenses	\$3,830

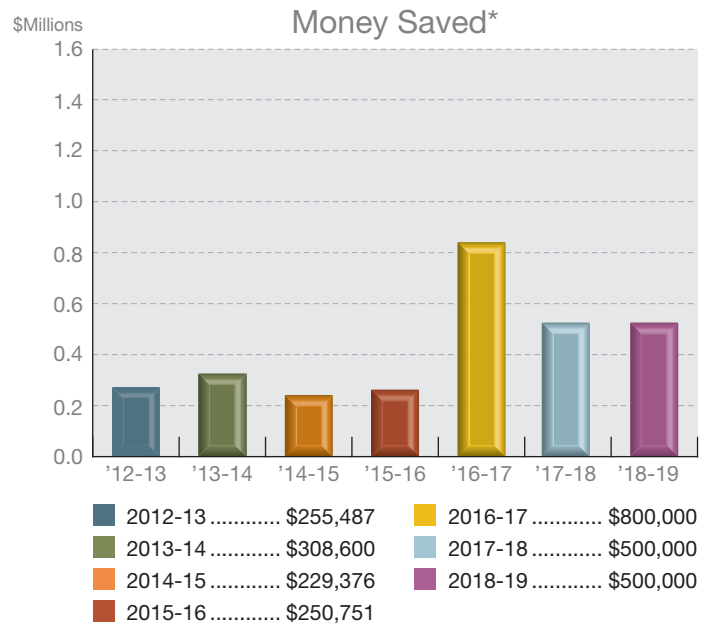
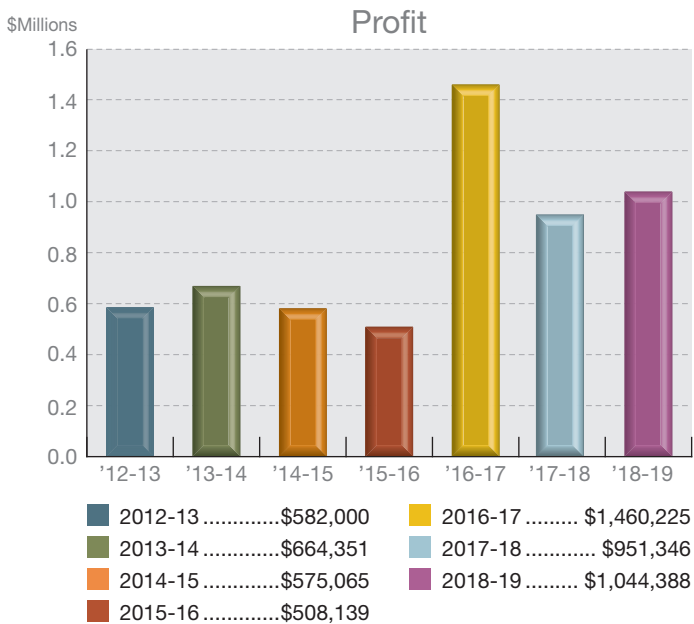
(Vehicle expense includes gas, oil, tires & misc. maintenance - not itemized)

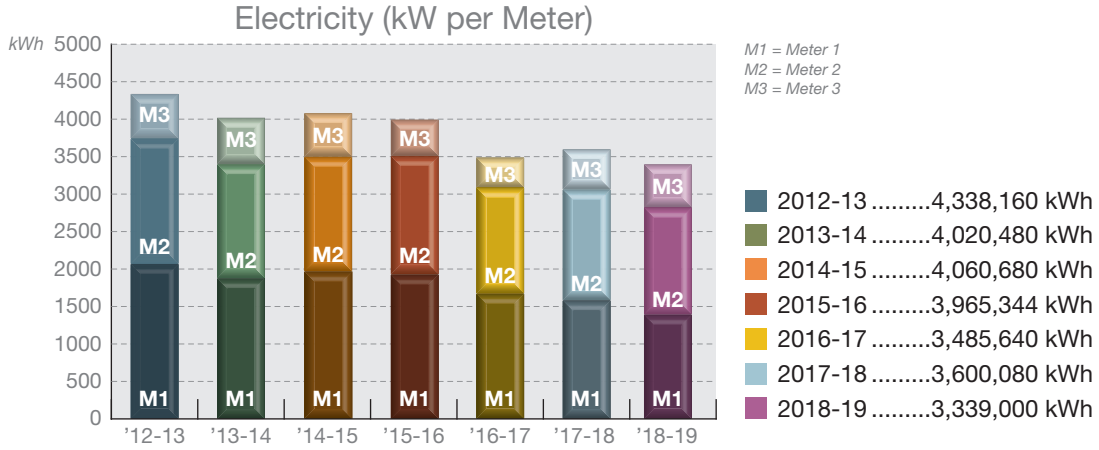


demographics | sales & purchases

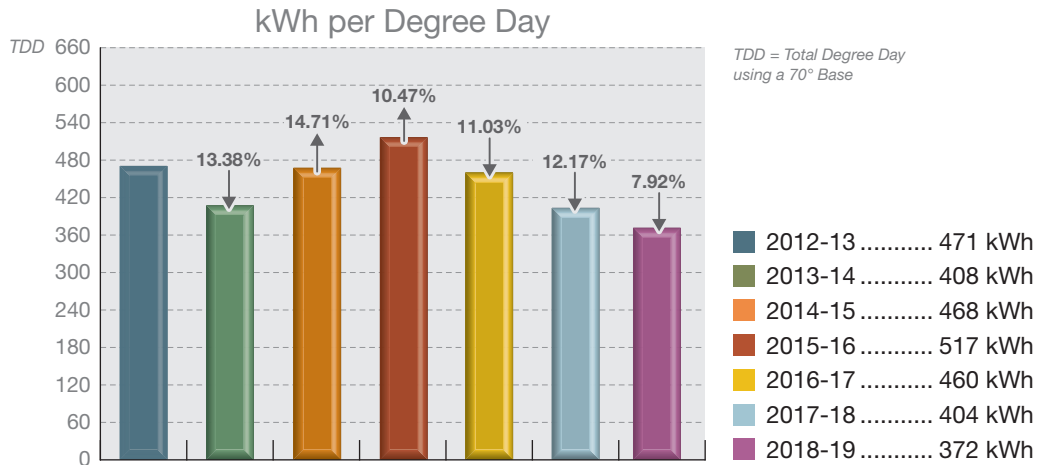


demographics | profit & money saved



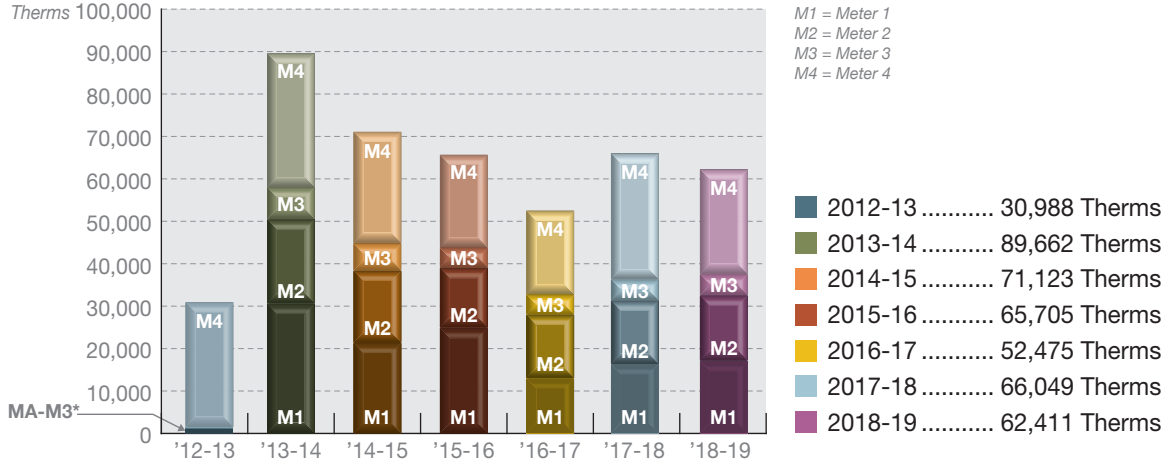


2012-13 4,338,160 kWh			2013-14 4,020,480 kWh			2014-15 4,060,680 kWh			2015-16 3,965,344 kWh		
M1	2,056,080 kWh		M1	1,876,200 kWh		M1	1,968,960 kWh		M1	1,927,320 kWh	
M2	1,584,080 kWh		M2	1,522,920 kWh		M2	1,530,960 kWh		M2	1,551,360 kWh	
M3	698,000 kWh		M3	621,360 kWh		M3	583,760 kWh		M3	486,664 kWh	
2016-17 3,485,640 kWh			2017-18 3,600,080 kWh			2018-19 3,339,000 kWh					
M1	1,671,000 kWh		M1	1,583,280 kWh		M1	1,392,240 kWh				
M2	1,416,240 kWh		M2	1,479,520 kWh		M2	1,428,840 kWh				
M3	398,400 kWh		M3	537,280 kWh		M3	577,920 kWh				





Natural Gas (therms per Meter)



2012-13
30,988 Therms

MA	1,057 Therms
M2	243 Therms
M3	205 Therms
M4	29,483 Therms

2013-14
89,662 Therms

MA	30,621 Therms
M2	19,874 Therms
M3	7,578 Therms
M4	31,589 Therms

2014-15
71,123 Therms

M1	21,355 Therms
M2	17,030 Therms
M3	6,430 Therms
M4	26,308 Therms

2015-16
65,705 Therms

M1	24,951 Therms
M2	14,162 Therms
M3	4,643 Therms
M4	21,949 Therms

2016-17
52,475 Therms

M1	13,019 Therms
M2	14,985 Therms
M3	4,713 Therms
M4	19,758 Therms

2017-18
66,049 Therms

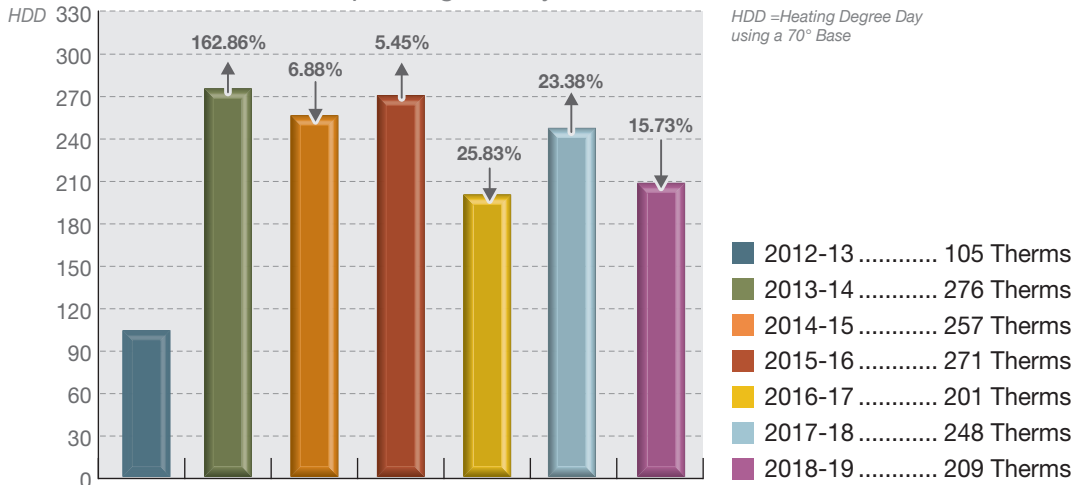
M1	16,408 Therms
M2	14,934 Therms
M3	4,993 Therms
M4	29,714 Therms

2018-19
62,411 Therms

M1	17,156 Therms
M2	15,412 Therms
M3	5,000 Therms
M4	24,843 Therms

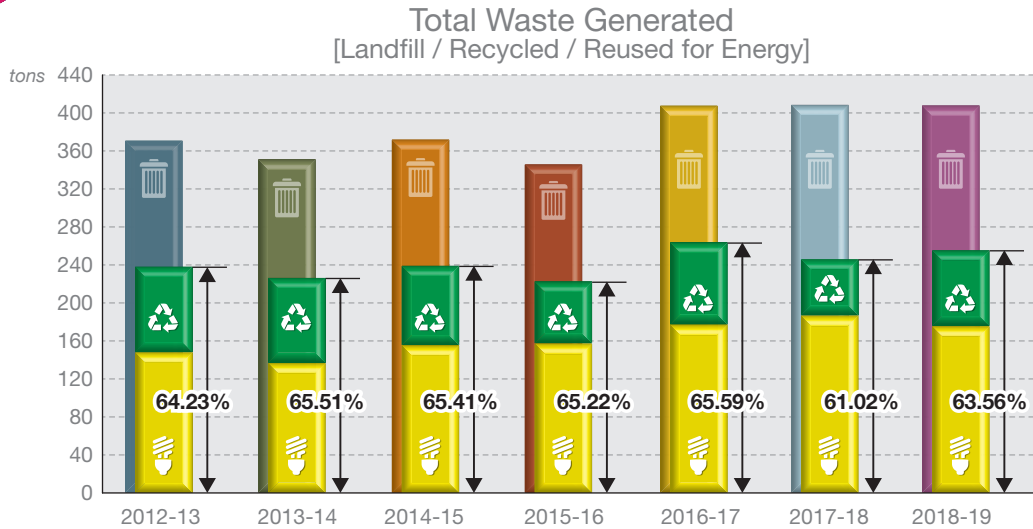
*Meter A malfunctioned in 2012-13 fiscal year, but was not discovered until September 2014. The meter was replaced with Meter #1. The therms were then averaged between October 2014-March 2014.

Therms per Degree Day





waste | total generated waste



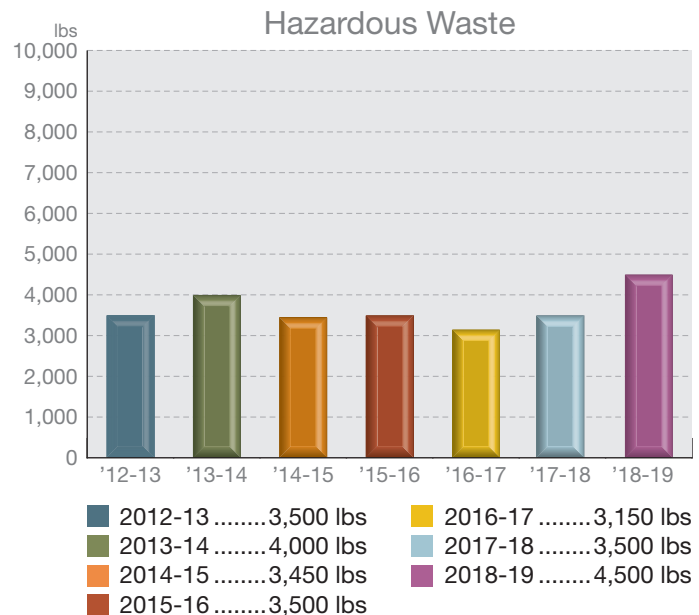
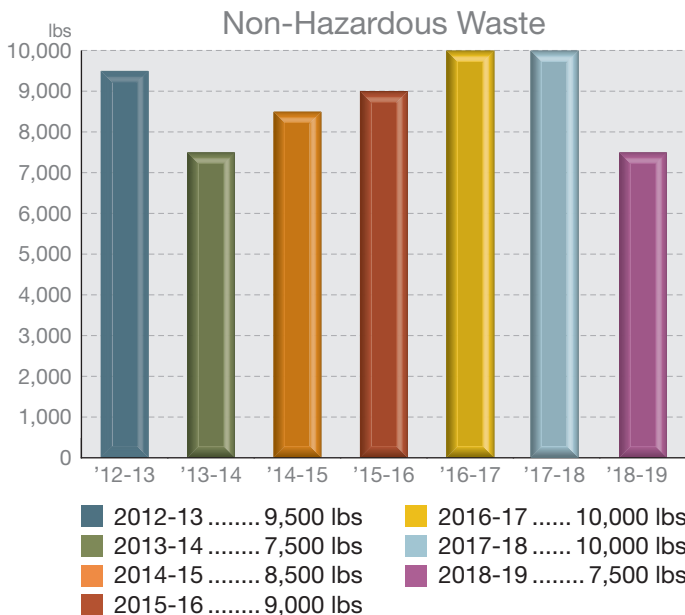
Year	Total Tons	% Diverted from Landfill	Sent for Energy*	Recycled/Reused
2012-13	370.96 tons	64.23%	150.03 tons	88.24 tons
2013-14	351.21 tons	65.51%	139.21 tons	90.84 tons
2014-15	372.28 tons	65.41%	158.45 tons	85.06 tons
2015-16	347.28 tons	65.22%	160.35 tons	66.16 tons
2016-17	408.66 tons	65.59%	180.02 tons	88.03 tons
2017-18	409.64 tons	61.02%	189.82 tons	60.12 tons
2018-19	408.57 tons	63.56%	178.38 tons	81.29 tons

*Waste for Energy is picked up by Hilltopper, who takes it to Xcel in La Crosse, WI



waste | hazardous & non-hazardous[‡]

Lbs are based on an average 500 lb drum



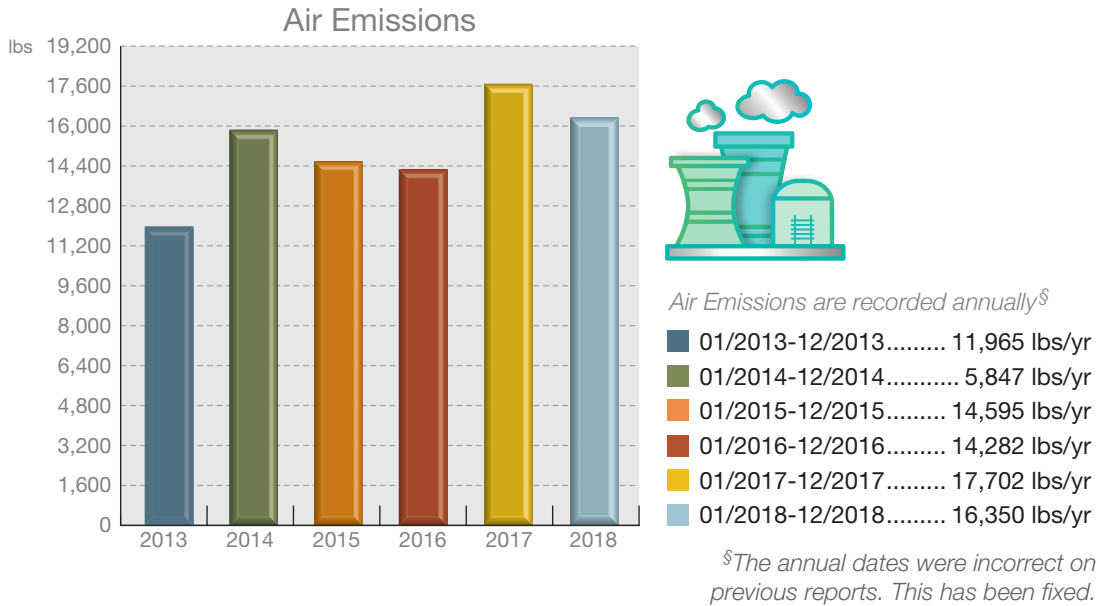
Non-hazardous waste: Vinyl*, UV and Screened Adhesive Water-Based Inks *Although vinyl is hazardous, it is sent with UV for disposal (to be incinerated with the barrel)

Hazardous waste: Still Bottoms (waste solvents - the sludge from the rags used to clean the screens)

[‡]After further review, some information in this section was incorrectly documented on past reports. Numbers & graphs has been updated.



air | emissions & ozone-depleting substances



Ozone-Depleting Substances:
No chart – Air conditioner has 100 lbs of R-22 refrigerant added annually.



transportation | vehicles & equipment

In an effort to reduce our carbon footprint, Empire uses hybrid automobiles for outside sales and other transportation needs. The maintenance expenses for the year were \$3,830.** Information on our transportation and vehicle equipment is as follows:

- 2 Prius hybrid automobiles (yr. 2011).....used for outside sales/transportation
- 2 Chevrolet Silverado trucks (yr. 1998, 2000).....used primarily for maintenance needs
- 1 John Deere 4310 diesel tractorused for mowing and snow removal
- 1 John Deere 425 Rider.....used for mowing

** The maintenance expense includes gas, oil, tires and miscellaneous maintenance. Expenses are not itemized.



Our objectives and targets for the upcoming 2019-2020 year were established during our annual management review.

2019-2020 Environmental Improvement Goals

Fiscal Year
10/2019 – 09/2020

OBJECTIVE 1

Reduce our annual landfill waste to 23.85% by 2022

Empire Screen identified 2012 as the baseline year for setting a waste reduction goal. In 2012, 47.69% of waste generated was sent to the landfill. By 2022, Empire Screen will reduce the waste sent to the landfill by 50%, with an annual reduction of 2.39%, resulting in no more than 23.85% of all the waste generated being sent to the landfill.

Action Items:

- » Our Graphium ink waste containers are currently not recyclable and are sent to the landfill. We will contact the vendor to see if there are other options for recycling.
- » As of 08/20/2019, polycarbonate with adhesive will no longer be accepted. This will affect the percentage of material we can recycle, which may cause our landfill number to increase again. To offset this we will:
 - a. Run more jobs in flow.
 - b. Reduce the amount of material being used, by not over-producing.
 - c. Print polycarbonate jobs on the roll screen press, which will have less waste in the process. Implementation will be towards the end of 2020 fiscal year.

OBJECTIVE 2

Implement sustainable print methods with equipment using UV LED technology

1. Complete/build Roll-to-Roll screen print units using UV LED Technology (2 year objective)

This is the second year of our two-year objective. The print station prototype was completed in 2019. The rest of the press will be completed and running by July 2020.

2019-2020 Action Items to be completed by January 2020:

- » Design the unwind and rewind station. This will include a web guide and nip rollers to index the web.
- » All items currently designed will be tested to hold register.
- » When base testing is complete, create the print head design. This will go on top of the print head base.
- » Motion control and touchscreen programming.

2019-2020 Action Items to be completed by July 2020:

- » Complete three additional print stations, to make a 4-color press.
- » Set a baseline for material and energy usage.



Mike Smith
(LVS Operator)

*Objective 2 continued***2. Purchase an automatic screen-washing unit that uses recycled water**

This unit has reclaiming and developing in one unit. Two-thirds of the processes will use recycled water, with one-third using clean water (for the final wash). Rags will no longer be needed in the reclaiming process. Purchase and setup of the unit will start in November 2019 and be completed by May 2020.

Currently we do not have a meter on our well, but based on our current hauling, we can reduce our cost and water/tons by 25-50%.

3. Increase UV LED in screen print production 13.33%

We will increase our use of UV LED technology in screen print production from 75% to 85% by eliminating the following equipment items:

- » *Patriot FMA Line*
- » *DTS (Direct-to-Screen), which uses Mercury Vapor lights. This is being replaced with LED imaging CST unit*
- » *Solvent inks - we will no longer print using solvent inks in screen printing production.*

OBJECTIVE 3**Update/replace equipment as needed for better efficiency and/or per legal and other requirements****Lighting Conversion**

Empire Screen will be converting T12 and T8 fluorescent bulbs to T8 LED bulbs (15 watt or 18 watt bulbs will be installed) in the following departments/areas: Art (this is a continuation from last year), IT, the old house area and outside lighting, to be completed by September 2020. After these conversions, 99% of the facility will be using LED lighting. This conversion will yield a 20-35% decrease in watt usage.

OBJECTIVE 4**Make improvements based on our 2019 external audit: Reevaluate and rate the aspects and impact resolutions based on the new scoring system, as well as updating all documentation. This will be done within individual departments/areas and be completed by end of 2021 fiscal year.**

Based on EMS Section 2.0 (Identifying Environmental Aspects and Impacts), Line 3-4

This was a failure from last year due to lack of management responsibility and not setting action items throughout the year. Our 2019 Management Review addressed this issue. A new policy deployment will be established which will add an element of sustainability to each manager's responsibility that supports the EMS and the company's vision. Evaluation of our company's process and procedures will take place through internal audits. EMS evaluation questions will be asked as well. These audits will help build awareness and improvements towards new objectives and goals. We will keep this as a two-year timeline, but will now be completed by 2021 fiscal year.

Timeline Year #1 Action Items for 2019-2020:

- » *Use the current Impact/Aspect sheet as a Management Master file and edit at the end of each year.*
- » *Create a Departmental Template Sheet that can be used to help develop the Master file, but is a more user-friendly approach and can be used throughout the year and for audits.*
- » *A Green Team member will meet with an entire department (both shifts) whenever possible, and using the Departmental Sheet, ask questions directly related to their department regarding risk and opportunity (for improvement). We will set a goal of meeting with 40% of the departments. If entire departmental meetings is not possible due to time or production conflicts, a meeting with supervisor, lead and minimum 2 employees will take place.*

Timeline Year #2 Action Items for 2020-2021:

- » *Finish meeting with departments (both shifts).*
- » *The Green Team will update the Impact/Aspect Master file.*
- » *Follow-throughs will be done every 1-2 years, to allow for turnovers, new employees, etc.*



Forward thinking companies that adapt positively to the sustainable business agenda will be at the forefront of resource productivity, reducing waste and of environmental reporting. They and their management teams make things happen ahead of their competitors.

- Michael Meacher -



Cow photo by Teresa Johnson (Hard Tool Operator)



Audra Moline (Account Manager)