



# Technology in Environmental, Health & Safety

# Introductions

- Nick Kruse; Regional EHS Manager
- Joe Metcalf; Bedding Products EHS Director

# Our Core Tenants

- ❑ Master basic regulatory compliance
- ❑ Create employee-centric EHS program
- ❑ Continuous improvement thru data driven decisions

# Data Driven Decisions



# What EHS Data?

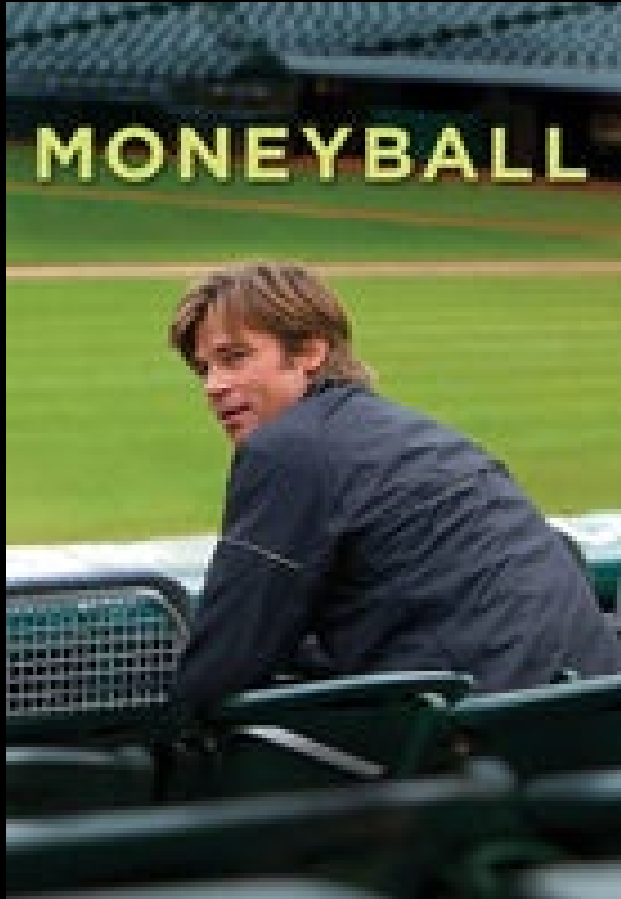
- ❑ Lagging indicators
  - ❑ OSHA rates
  - ❑ Workers Compensation claims and dollars
  - ❑ Insurance

# Leading Indicators / Causation

Measurable or observable variable that predicts a change or movement in another data series, process, trend, or other phenomenon of interest before it occurs.

Similar to root cause, the deeper you go in leading indicators, the broader the outcome impact and the more control you have.

# Leading Indicators / Causation



## Baseball Sabermetrics –

- K-BB%, wOBAcon, xwOBAcon, ISO, SLG%, xSLG, AVG, xBA, HR/9, Brls/BBE%, Brls/PA%, Average Spin Rate, Average Velocity, Average Exit Velocity, Average Launch Angle, WHIP, Hits/IP, Hard Hit Rate, Hard%, Soft%, GB%, FB%, and LD%.

# The Case of Jose Bautista

Blue Jays – 10 seasons

- ❑ Averaged 29 homeruns / yr
- ❑ 6 time All – Star
- ❑ 4-time MVP top ten votes
- ❑ 3 Silver Sluggers

Pirates – 4.5 previous seasons

- ❑ Bench player
- ❑ Averaged 10 homeruns / yr



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# Information Loop

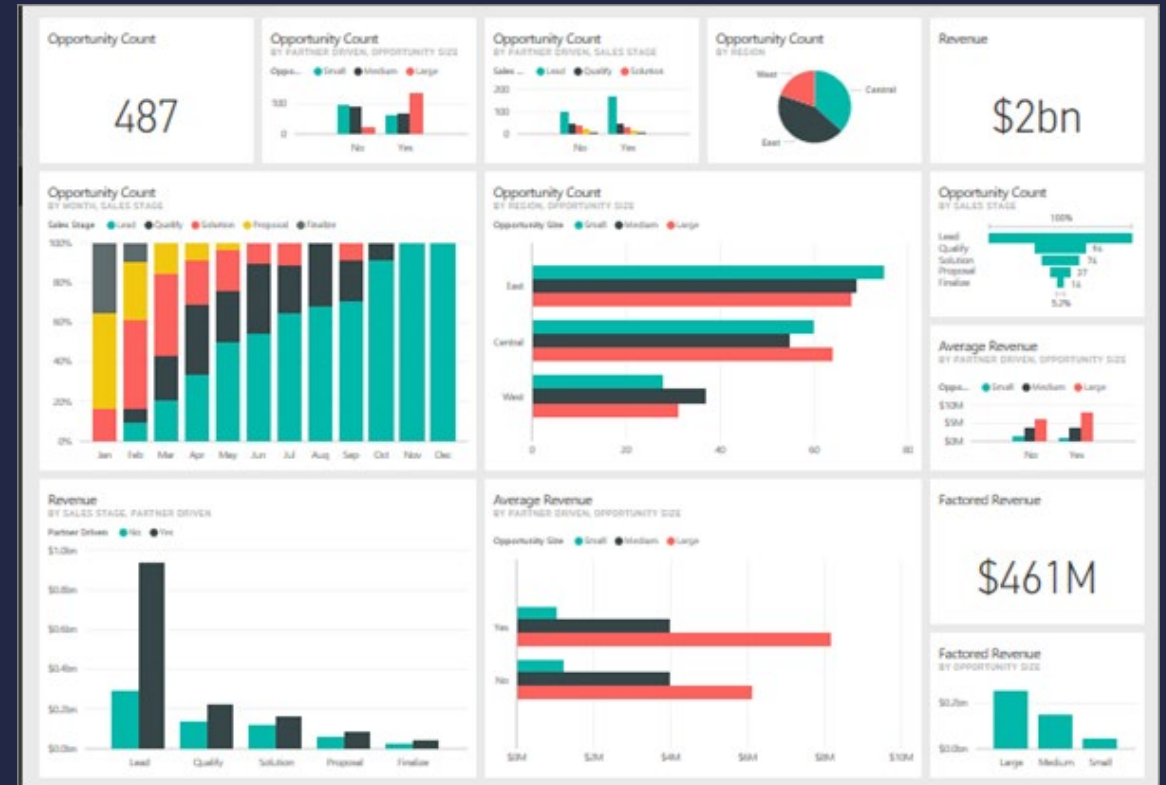
- ❑ Identify what data you want to collect
- ❑ Develop systems to capture
- ❑ Aggregate
- ❑ Sort
- ❑ Trend
- ❑ Evaluate

# Best EHS Data to Capture?

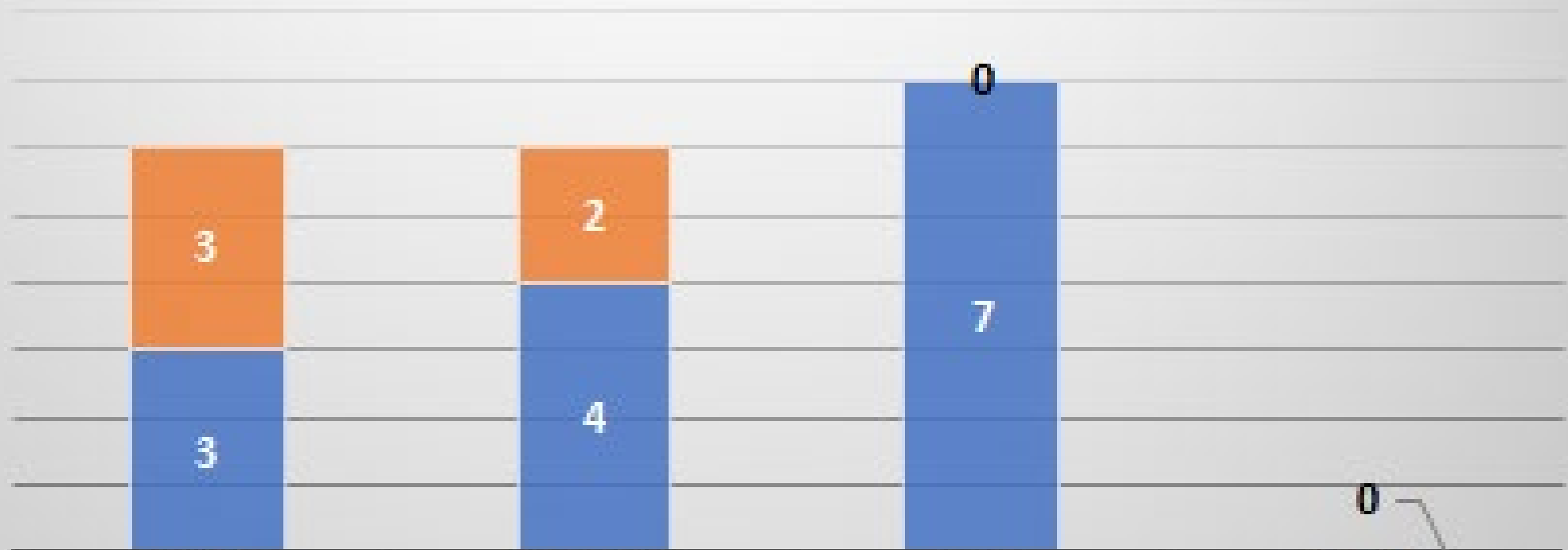
- ❑ We're not as advanced as baseball
- ❑ We do collect a lot of data
  - ❑ Incident investigations
  - ❑ Job Safety Analyses
  - ❑ Audits / inspections / assessments
  - ❑ Budgets, goals

# Technologies

- ❑ Microsoft Office
- ❑ SharePoint
- ❑ Power BI
- ❑ Power App
- ❑ Power Automate
- ❑ In-house developed
- ❑ 3rd Party
- ❑ Teams



# Arm Cuts, Punctures, and Burns in Wire 2013-Present



	Spring	Summer	Fall	Winter
Night	3	2	0	0
Day	3	4	7	0



## Various style sleeves

Protection driven utilizing data. Puncture protection for wire drawing but heat and puncture protection for galvanizing department.



## High Cut Resistance Sleeve

An A7 cut protection and still high puncture protection. Also, cool and breathable fabric to reduce heat related resistance.

# Employee-centric EHS Program



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# Partnering with Our Employees

To be effective, any safety and health program needs the meaningful participation of workers. They often know the most about potential hazards associated with their jobs. Successful programs tap into this knowledge base.

Worker participation means that workers are involved in establishing, operating, evaluating, and improving the safety and health program.

# How to Do It

- ☐ Encourage workers to participate in the program
- ☐ Encourage workers to report safety and health concerns
- ☐ Give workers access to safety and health information
- ☐ Involve workers in all aspects of the program
- ☐ Remove barriers to participation

# Employee Engagement

≥50% of employees actively engaged and involved in EHS related activities:

- ☐ Safety Audits / Inspections
- ☐ Safety Committees
- ☐ Employee Suggestions (that were implemented)
- ☐ Trainer or presenter in EHS training
- ☐ Lead in Job Hazard Assessments or Incident Investigations
- ☐ Participant in EHS themed CI, 6S, or related projects
- ☐ Near-miss reporting

# Safety Recognition - Benefits

- ❑ Excite Partners with tangible useful items
- ❑ Involves Supervisor and Managers
- ❑ Easy to administer, both entry and reporting
- ❑ Competitive in a good way
- ❑ Places more safety professionals on the floor
- ❑ Flexible ways to earn points (easily adaptable)
- ❑ INJURY AND RISK REDUCTION

# How to Earn Points

6S Event Participation (per Day)

Behavior Correction

Cleaning Lights in WD

Create a Safety Document/Device

Employee Conducting Toolbox Talk

Event Investigation Participation

Hazard Recognition & Corrected

Impromptu Audit Participation

Lead Safety/CI Committee

Mentoring New Hire / Transfer

Participate in Continuous Improvement Team

Review Safety Procedure

Running Sweeper/Housekeeping

Safety/CI Committee Member

Training Partner New to Dept

Zone Audits

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# Safety Recognition - Obstacles

- ☐ Partners who feel it is a trap
- ☐ Partners who think it will be difficult to get involved
- ☐ Partners who do not want company logo on tangible items
- ☐ Entries of items that should be normal during employment (i.e., picking up after ourselves)
- ☐ Maintaining the program, it must remain fresh

# The Exchange

❑ Team members can exchange earned points for a variety of items.

❑ Thermos/Insulated drink cup

❑ Shirts, polo and dress

❑ Jackets, vest, sweatshirts

❑ Hats, both ballcap and knit caps

❑ All items are available for both female and male

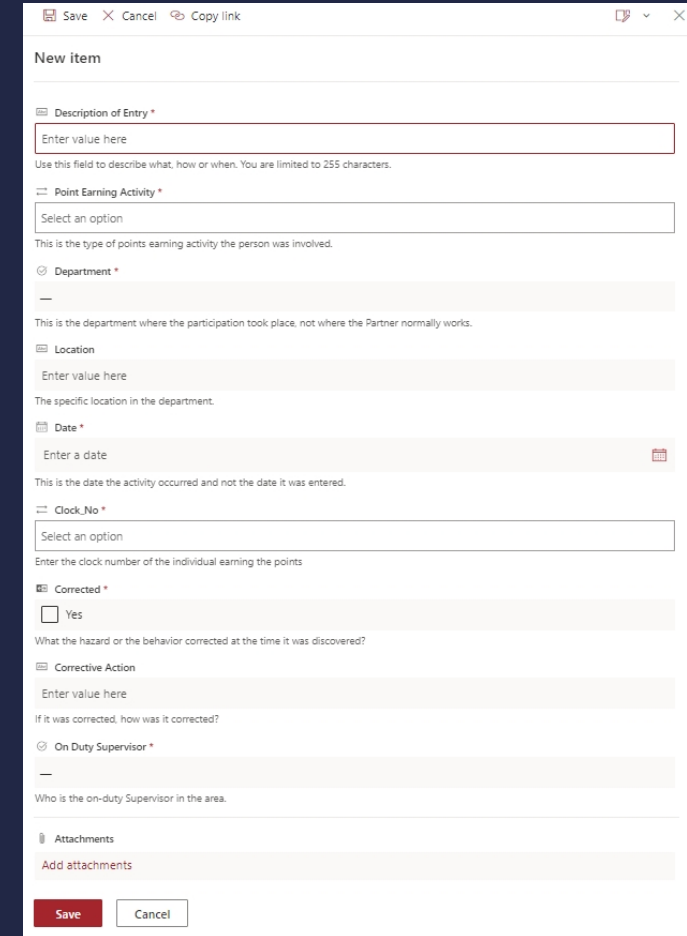
❑ Create excitement by changing items occasionally



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# Recognition Technology

- ❑ Utilizing SharePoint it is extremely easy.
- ❑ Further options with Power App, Power Automate and Power BI can extremely decrease the need for administration of the program



The screenshot shows a 'New Item' form in a SharePoint list. The form has a title bar with 'Save', 'Cancel', and 'Copy link' buttons. The form fields are as follows:

- Description of Entry \***: A text box with the placeholder 'Enter value here'. Below it, a note says 'Use this field to describe what, how or when. You are limited to 255 characters.'
- Point Earning Activity \***: A dropdown menu with the placeholder 'Select an option'. Below it, a note says 'This is the type of points earning activity the person was involved.'
- Department \***: A dropdown menu with a dash placeholder. Below it, a note says 'This is the department where the participation took place, not where the Partner normally works.'
- Location**: A text box with the placeholder 'Enter value here'. Below it, a note says 'The specific location in the department.'
- Date \***: A date picker with the placeholder 'Enter a date'. Below it, a note says 'This is the date the activity occurred and not the date it was entered.'
- Clock\_No \***: A dropdown menu with the placeholder 'Select an option'. Below it, a note says 'Enter the clock number of the individual earning the points.'
- Corrected \***: A checkbox labeled 'Yes'. Below it, a note says 'What the hazard or the behavior corrected at the time it was discovered?'
- Corrective Action**: A text box with the placeholder 'Enter value here'. Below it, a note says 'If it was corrected, how was it corrected?'
- On Duty Supervisor \***: A dropdown menu with a dash placeholder. Below it, a note says 'Who is the on-duty Supervisor in the area.'
- Attachments**: A section with the text 'Add attachments' and a plus icon.

At the bottom of the form are 'Save' and 'Cancel' buttons.

## New item

 Description of Entry \*

Enter value here

Use this field to describe what, how or when. You are limited to 255 characters.

 Point Earning Activity \*

Select an option

This is the type of points earning activity the person was involved.

 Department \*

—

This is the department where the participation took place, not where the Partner normally works.

 Location

Enter value here

The specific location in the department.

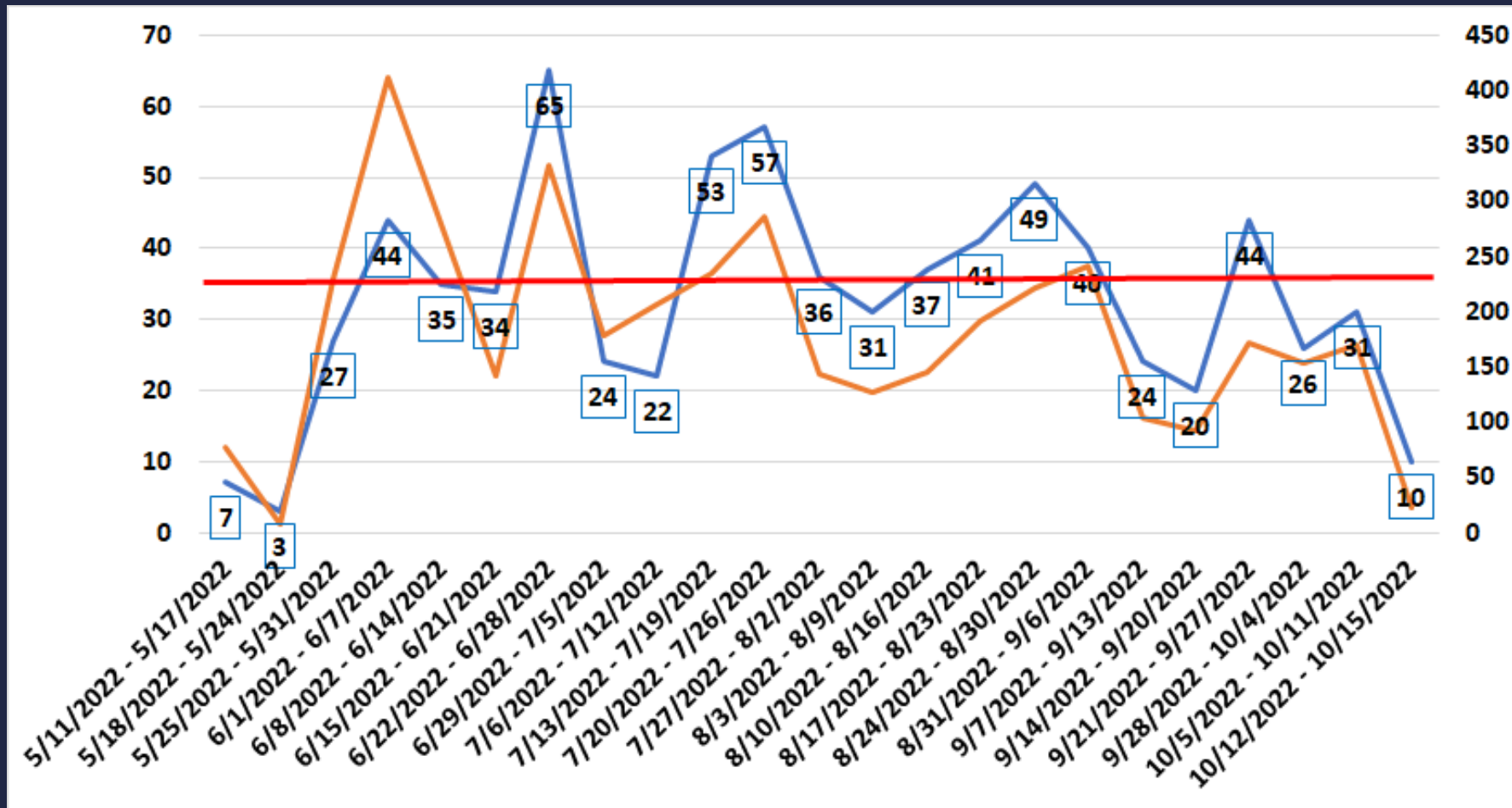
 Date \*

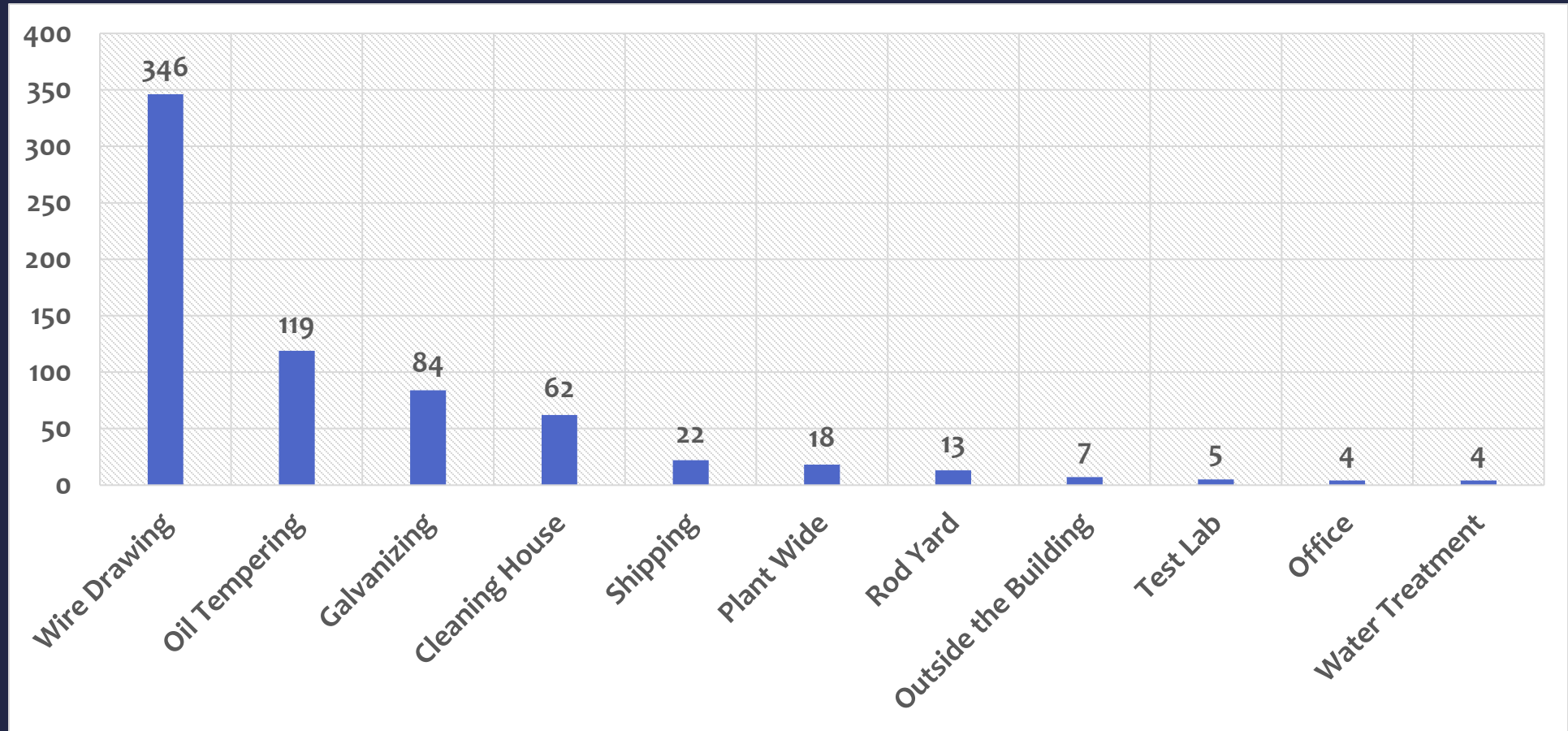
Enter a date



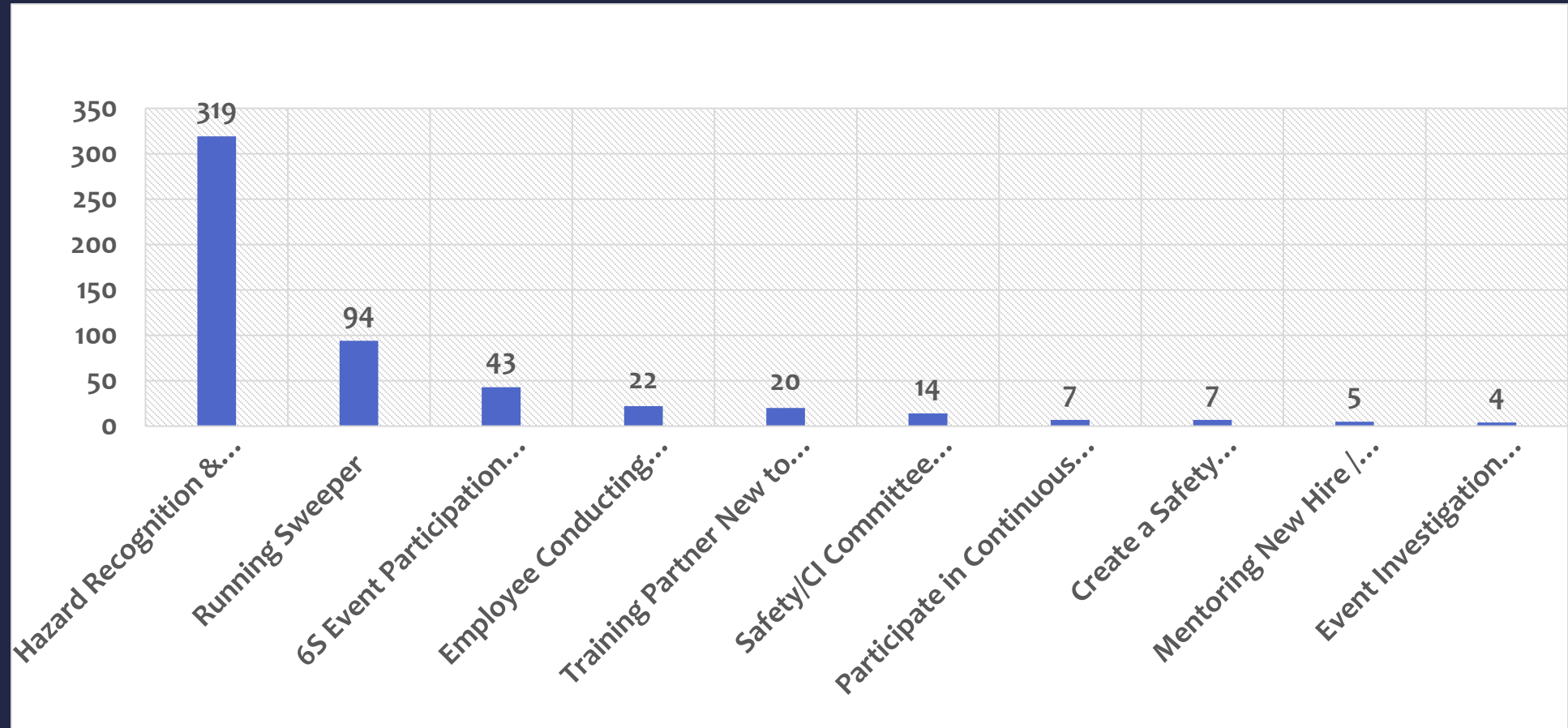
This is the date the activity occurred and not the date it was entered.

# Weekly Performance Graph





# Type of Activity and Total



# Regulatory Compliance



# Regulatory Compliance

## ☐ **Programs, policies and procedures-related**

**requirement:** Indicates required programs or policies, which can be written or unwritten, and/or be a mix of procedures (e.g.; work practices, controls), policies or plans required to meet a rule's requirements.

## ☐ **Inspections and tests requirement:** Indicates required inspections, workplace evaluations, hazard assessments, visual examinations tests, and/or surveys, documented and undocumented.

# Regulatory Compliance

- ❑ **Recordkeeping requirement:** Indicates rules that have recordkeeping requirements for activities such as injury reporting, equipment inspections, surveys, tests, medical monitoring, exposure monitoring, training, records and other documentation requirements.
- ❑ **Certification requirement:** Indicates rules that have a certification component. Certification will usually mean a written, signed, and dated statement confirming the performance of a requirement—also called a “certification record” in many rules. Also "Competent person" and "Qualified person"

# Regulatory Compliance

## ☐ **Training and communications requirement:**

Indicates rules that have requirements for employee training, instruction, communications and/or providing information.

## ☐ **Exposure monitoring requirement:** Indicates rules that require exposure monitoring or other monitoring components for workplace hazards such as noise, chemicals and air contaminants.

# Regulatory Compliance

❑ **Medical surveillance requirement:** Indicates rules that require regular medical examinations and consultations for employees who may be overexposed to hazardous substances during their work and/or a medical or a physically qualified component.

❑ **Signs, markings, tags requirement:** Indicates rules that have requirements for some type of labeling component for equipment, machines and tools or signs for regulated areas, or requirement for establishing a regulated area, a posting requirement or placarding.

# Regulatory Compliance

- ☐ **Permitting and reporting:** Indicates rules that have requirements approved agreements with regulatory agencies governing appropriate use, testing, inspections, and reporting.
- ☐ **All the shop floor requirements!**





Our  
Technology



SafeGuard 2.0 Incident Log



OSHA Log



Create Safety Work Order



SafeGuard Dashboard



International Online Portal



CCMSI Work Comp Portal



Job Hazard Analysis



SafeGuard Training Materials



SafeGuard Webinars



SafeGuard Programs & Documents



Temporary Staffing Resources



Zone Audit Inspections



COVID-19 Materials



GRC Impairment Documentation



Discussion Board



Employee Recognition Program



SG Promotional Items

	A	B	C	D	E	F	G
1	<b>EHS Regulatory Reports and Permits</b>						
2	<b>REPORTING CALENDAR</b>						
3							
4	<b>Branch</b>	<b>Unit</b>	<b>Reference</b>	<b>Media</b>	<b>Report / Permit ID</b>	<b>Submit To</b>	<b>Next Due</b>
11	Carthage (0400)	Drawn Wire	Landfill Permit		5008Y113874	Republic Services	12/17/2022
12	Carthage (0400)	Drawn Wire	Wastewater Water Discharge Permit	PSTD	8901-21	City of Carthage	12/31/2022
13	ECS-Americus (1117)	Specialty Foam	SW	Storm Water	Annual Report - Stormwater	GA EPD; Non-Point Source Program; 2 Martin Luther King, Jr. Drive, SW, Suite 1462; Atlanta, GA 30334	12/31/2022
14	Sterling Steel (0530)	Steel Rod	Mercury	EPA	SEMI Annual Mercury Switch Plan Report/Certification	Springfield and Peoria	12/31/2022
15	High Point (1506)	US Spring	SW	Storm Water	NOGNE0517	Annual self-recertification	2/1/2023
16	Springhill (0906)	Adjustable Beds	TIER II	EPCRA/SARA	40686 Florida SERC ID	Florida SERC /Eplan report /University of Texas	3/1/2023
17	Carthage (0400)	Drawn Wire	Tier 2	EPCRA/SARA	64836LGGTTEASTC	Missouri Emergency Response Commission	3/1/2023
18	Merit Steel (0R01)	Drawn Wire	Tier II	EPCRA/SARA	Site ID #IND984873646	CDX.EPA.Com	3/1/2023
19	ECS-Americus (1117)	Specialty Foam	EP-2	EPCRA/SARA	Tier II Annual Report	Eplan Electronic Submittal Website	3/1/2023
23	Sterling Steel (0530)	Steel Rod	CAAPP	Air	ID #195818AAI - Permit #96010019	IEPA - Division of Air Pollution Control	3/1/2023
24	Sterling Steel (0530)	Steel Rod	TIER 2	EPCRA/SARA	ID# 011098	Illinois Emergency Management Agency	3/1/2023
25	Sterling Steel (0530)	Steel Rod	Annual Generator Report	land	Site #ILR000115675	IEPA - Bureau of Land	3/1/2023
26	Carthage (0001) A	US Spring	Tier II	EPCRA/SARA	Carthage Spring Building 1 & 2	Missouri Emergency Response Commission	3/1/2023
27	Carthage (0001)B	US Spring	Tier II	EPCRA/SARA	Carthage Spring Building 3	Missouri Emergency Response Commission	3/1/2023
28	Clearfield (0042)	US Spring	Tier II	EPCRA/SARA	exempt - annual reporting		3/1/2023
29	Denver (0008)	US Spring	Tier II	EPCRA/SARA	exempt - annual reporting		3/1/2023
30	Ennis (0003)	US Spring	Tier II	EPCRA/SARA	RN104357652	<a href="http://www.texastier2.org">www.texastier2.org</a>	3/1/2023
31	Ennis (0003)	US Spring	SW	Storm Water	exempt - annual reporting		3/1/2023
32	High Point (1506)	US Spring	Tier II	EPCRA/SARA	exempt - annual reporting		3/1/2023
33	LA Spring (0052)	US Spring	Tier II	EPCRA/SARA	CERS ID: 10273804	California Environmental Reporting System	3/1/2023

## REQUIRED RISK PROGRAMS AND TRAINING

OSHA Program Topic	OSHA Reference	Program Required	Audit Required	Required Training		Training Frequency		
				All	Affected	Initial	Annual	Periodic
Accident Reporting and Investigation	<a href="#">1904</a>	Yes	Yes	Yes	---	Yes	No	No
Bloodborne Pathogens	<a href="#">1910.1030</a>	Yes	Yes	No	Yes	Yes	Yes	No
Compressed Gas	<a href="#">1910.101</a>	No	Yes	No	No	No	No	No
Confined Space Entry (Permit Required)	<a href="#">1910.146</a>	Yes	Yes	No	Yes	Yes	No	Yes
Dipping & Coating Operations	<a href="#">1910.122-126</a>	No	Yes	No	No	No	No	No
Electrical Safety	<a href="#">1910.331-335</a>	Yes	Yes	No	Yes	Yes	No	Yes
Emergency Action Plans	<a href="#">1910.38</a>	Yes	Yes	Yes	---	Yes	No	Yes
Fall Protection	<a href="#">1910.28-30, 140</a>	Yes	Yes	No	Yes	Yes	No	Yes
Fire Extinguishers	<a href="#">1910.157</a>	No	Yes	No	Yes	Yes	Yes	No
Fire Protection Equipment Maintenance	<a href="#">Subpart L</a>	Yes	Yes	No	Yes	Yes	No	No
First Aid	<a href="#">1910.151</a>	No	No	No	Yes	Yes	Yes??	No
Flammable & Combustible Liquids	<a href="#">1910.106</a>	No	Yes	No	Yes	Yes	No	No
Housekeeping	<a href="#">1910.141</a>	No	No	No	No	No	No	No
Hand Tool Safety	<a href="#">1910.242</a>	No	Yes	No	Yes	Yes	No	No
Hazard Communication	<a href="#">1910.1200</a>	Yes	Yes	Yes	---	Yes	No	Yes
Hazardous Waste Operations	<a href="#">1910.120</a>	Yes	Yes	No	Yes	Yes	Yes	No
Hearing Conservation	<a href="#">1910.95</a>	Yes*	Yes	No	Yes	Yes	Yes	No
Hot Work (Welding, Cutting, Brazing)	<a href="#">1910.252-255</a>	Yes	Yes	No	Yes	Yes	No	No
Industrial Hygiene	<a href="#">1910.1000</a>	Yes	Yes	No	Yes	Yes	Yes	Yes

Incident  
management

Training

Audits /  
inspections

SDS library

Sustainability

Permit /  
reporting  
tracking

EHS Management  
Software

# Continuous Improvement Projects



# Taggle Tree on Galvanizing Line

- ❑ Designed to automate the process of shutting down the line in the event of a tangle or caught in
- ❑ Innovative use of simpler technology
- ❑ Zero injuries since implementation
- ❑ Savings of \$100k-plus through internal team



# pH Monitoring Technology in Wastewater Treatment

- ❑ Real time monitoring and data collection
- ❑ Email and text notifications of upset conditions prior to permit exceedance
- ❑ Historical performance and the possibility of chemical reduction through more accurate application



# Question and Discussions

THANK YOU!