

What's Happening and What's Coming at Mapistry



Speaker



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What is our mission?

To fuel a sustainable economy by
empowering organizations to make
**intelligent environmental and
safety decisions**

The challenge

Why do EHS teams struggle to make intelligent decisions today?



Data is Siloed

- EHS & leadership teams are too often in the dark
- This forces EHS to be reactive rather than proactive
- Time is wasted on manual data collection processes

Resources are Limited

- Minimal EHS staff
- Operations & production take priority over EHS
- Regulations are changing quickly!

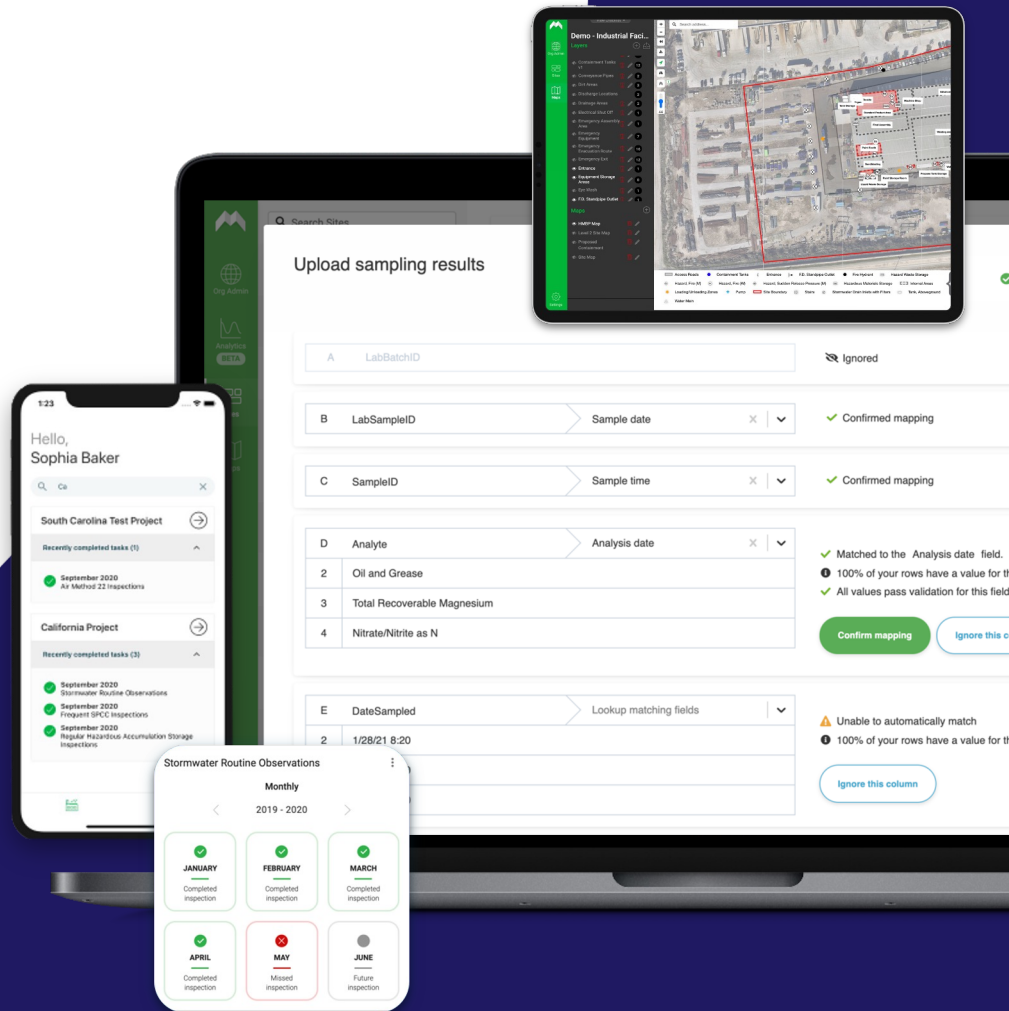
How can we help
our customers
make **intelligent**
decisions?



Step 1:

Give EHS leaders & regulators confidence that requirements are being met

- Mapistry is the system of record: track & complete **all requirements in one place** (no more paper, Excel, etc)
- Easily & quickly **identify missed requirements**
- **Hold staff accountable** without onerous busy work
- **Automate** as much as possible (reminders, integrations, etc)

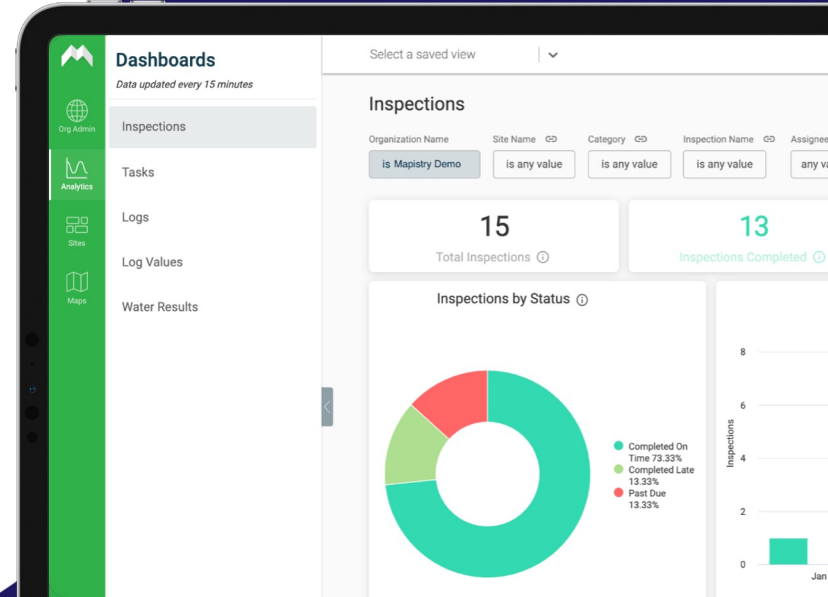
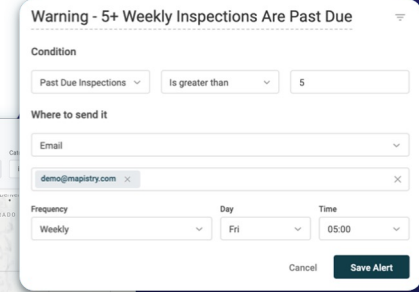
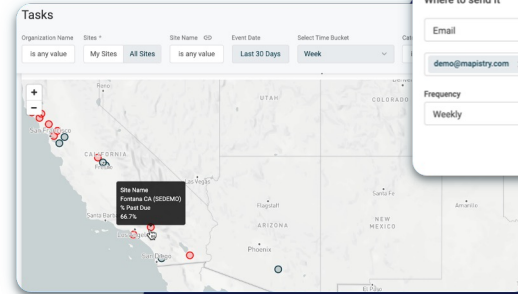


Step 2:

Proactively identify EHS risks

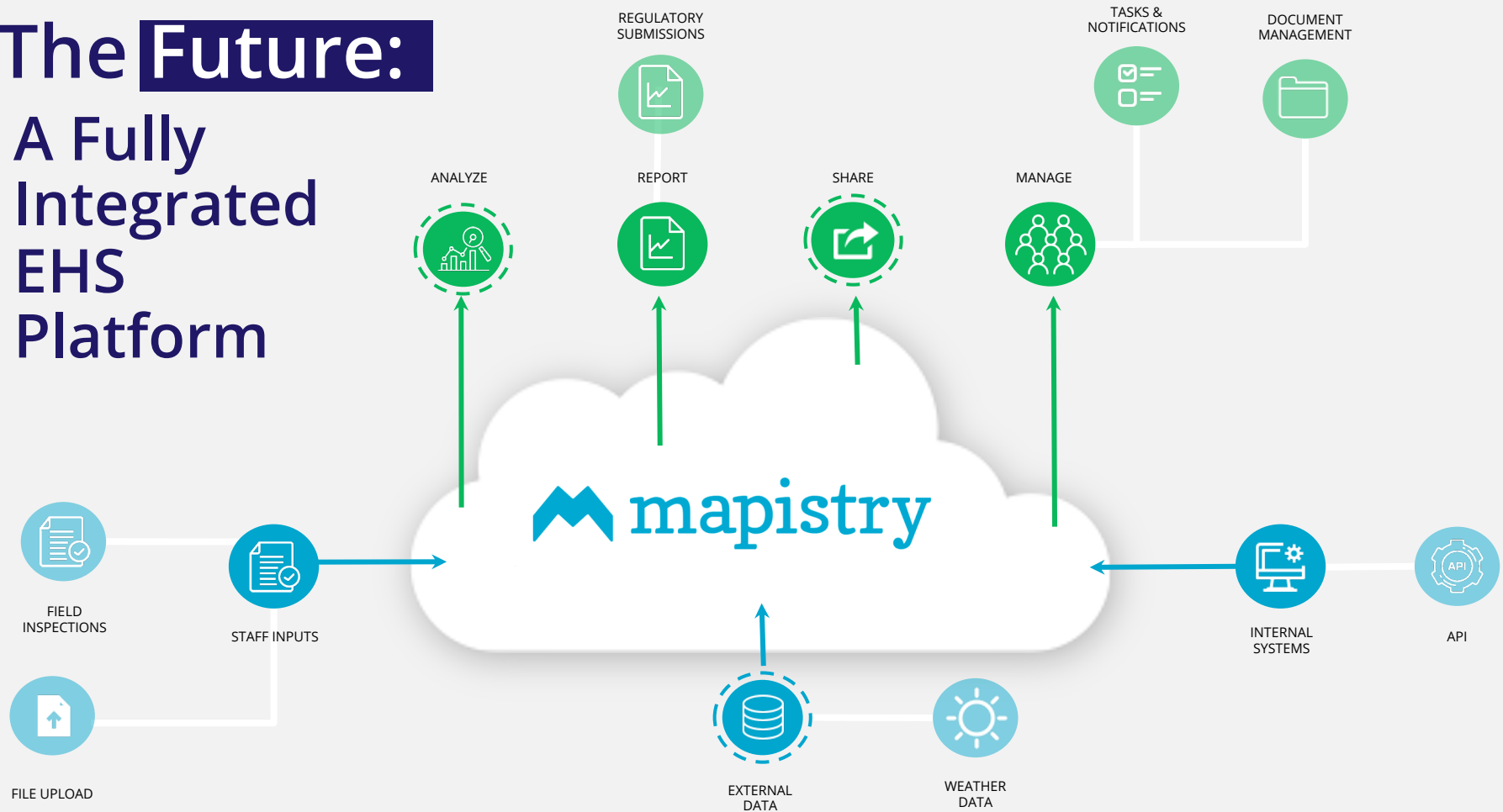
With confidence that basic requirements are being tracked, EHS managers & leaders can be **proactive instead of reactive**

- Where are our largest sources of pollution?
- Which sites identify suspiciously little regular maintenance?
- Which water samples are unusually high in a particular contaminant?
- Which sites are the largest sources of CO2 emissions?
- Which site would be mostly likely to be sued?



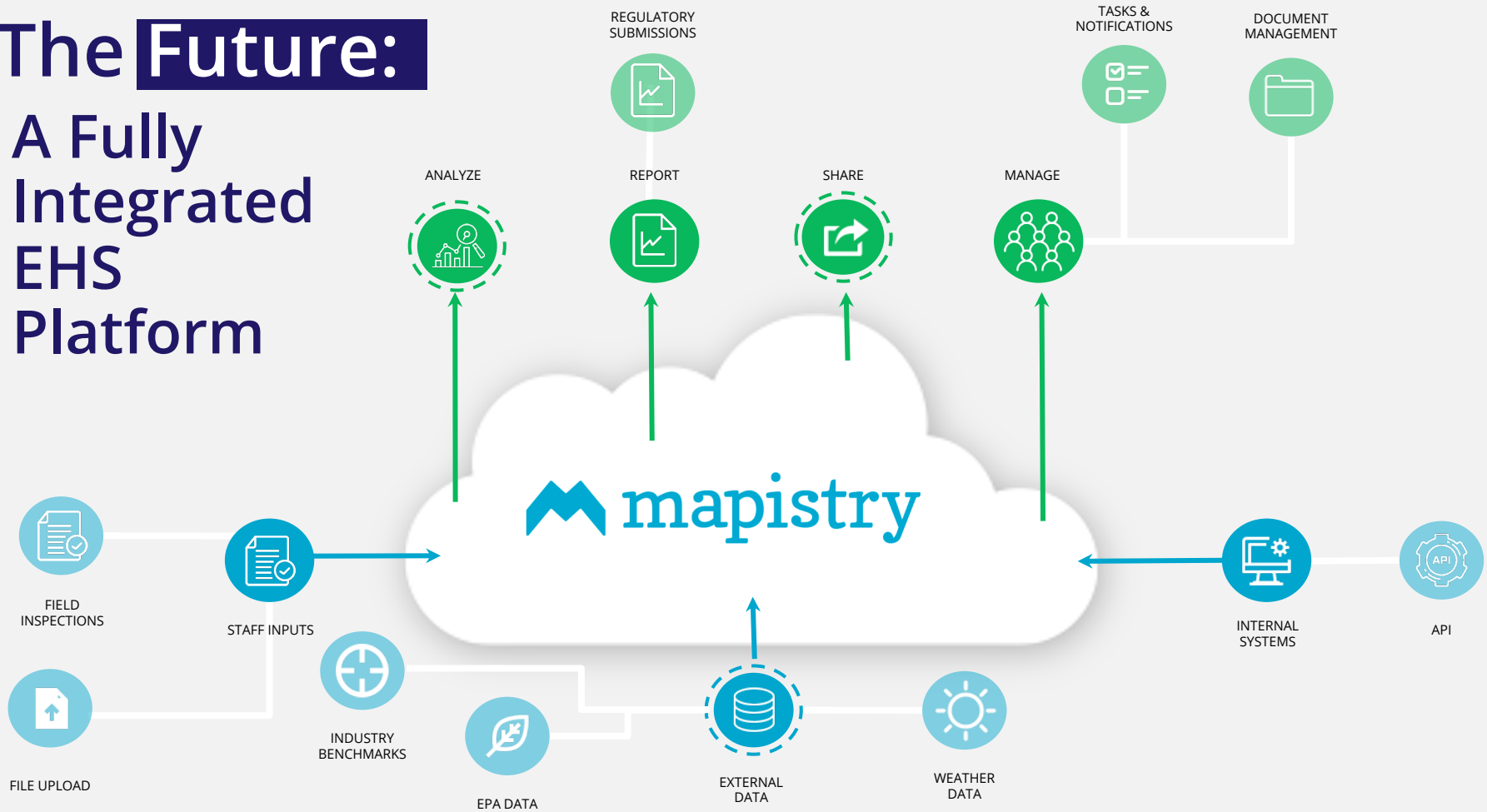
The **Future:**

A Fully Integrated EHS Platform



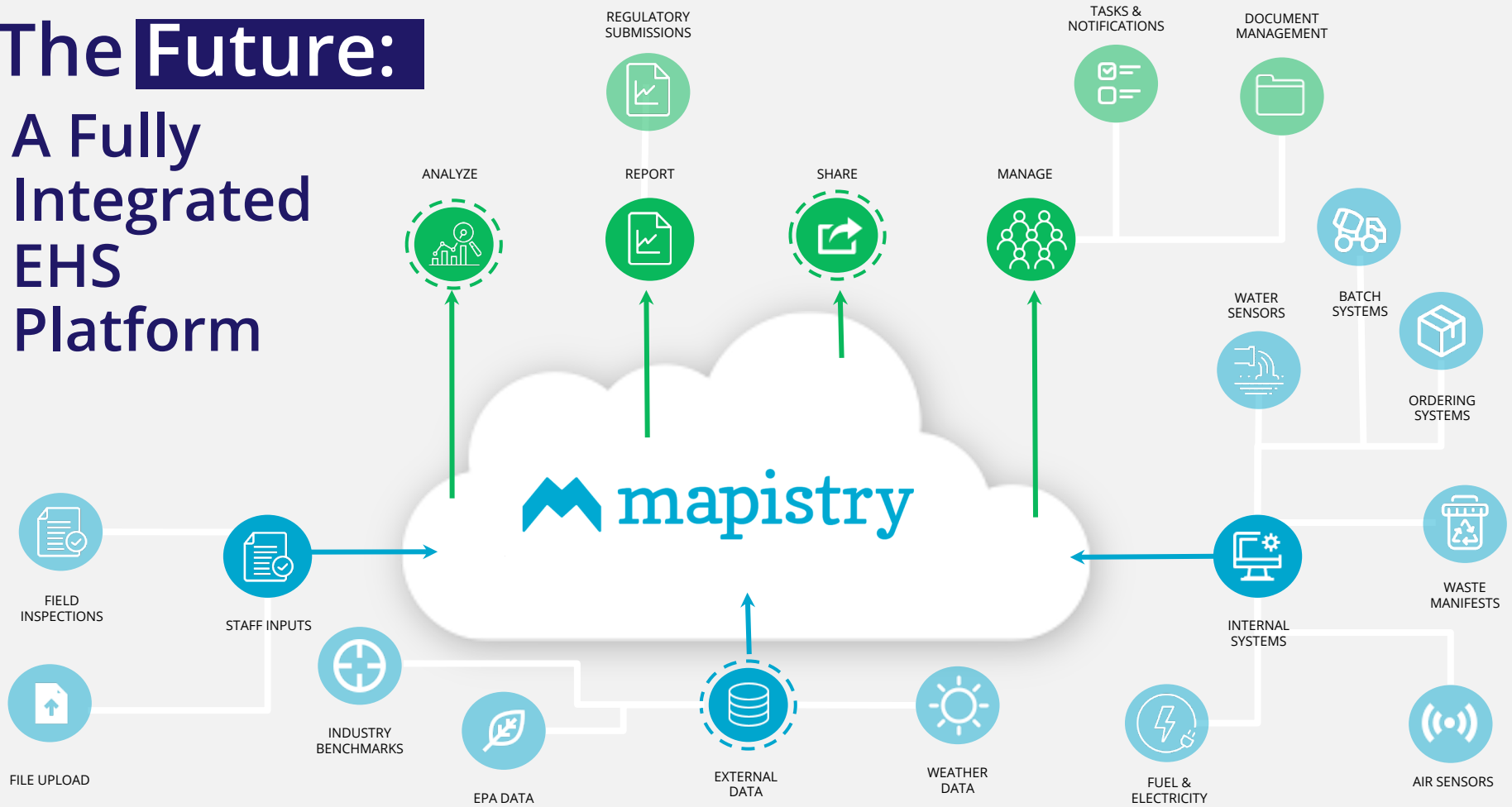
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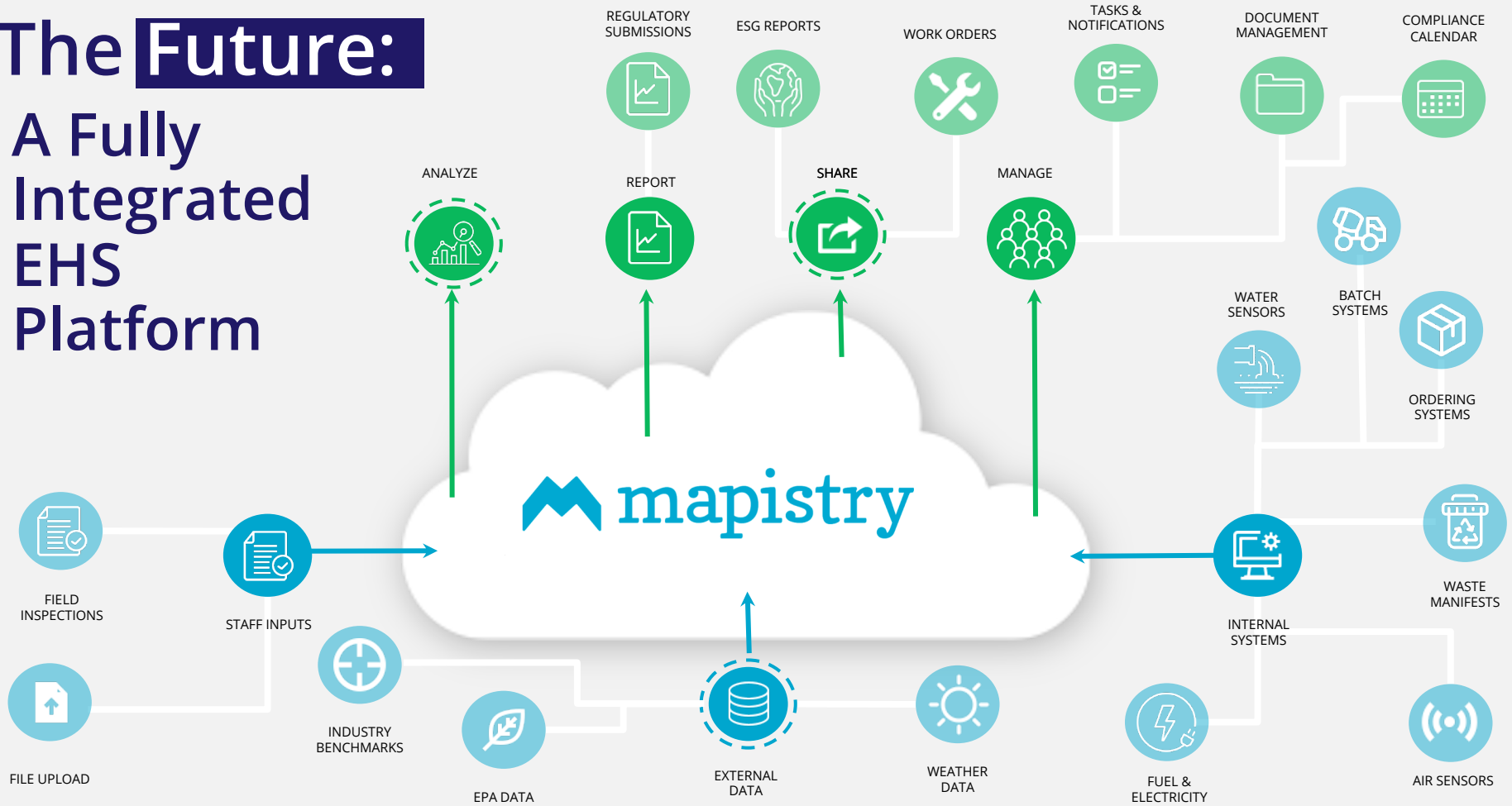
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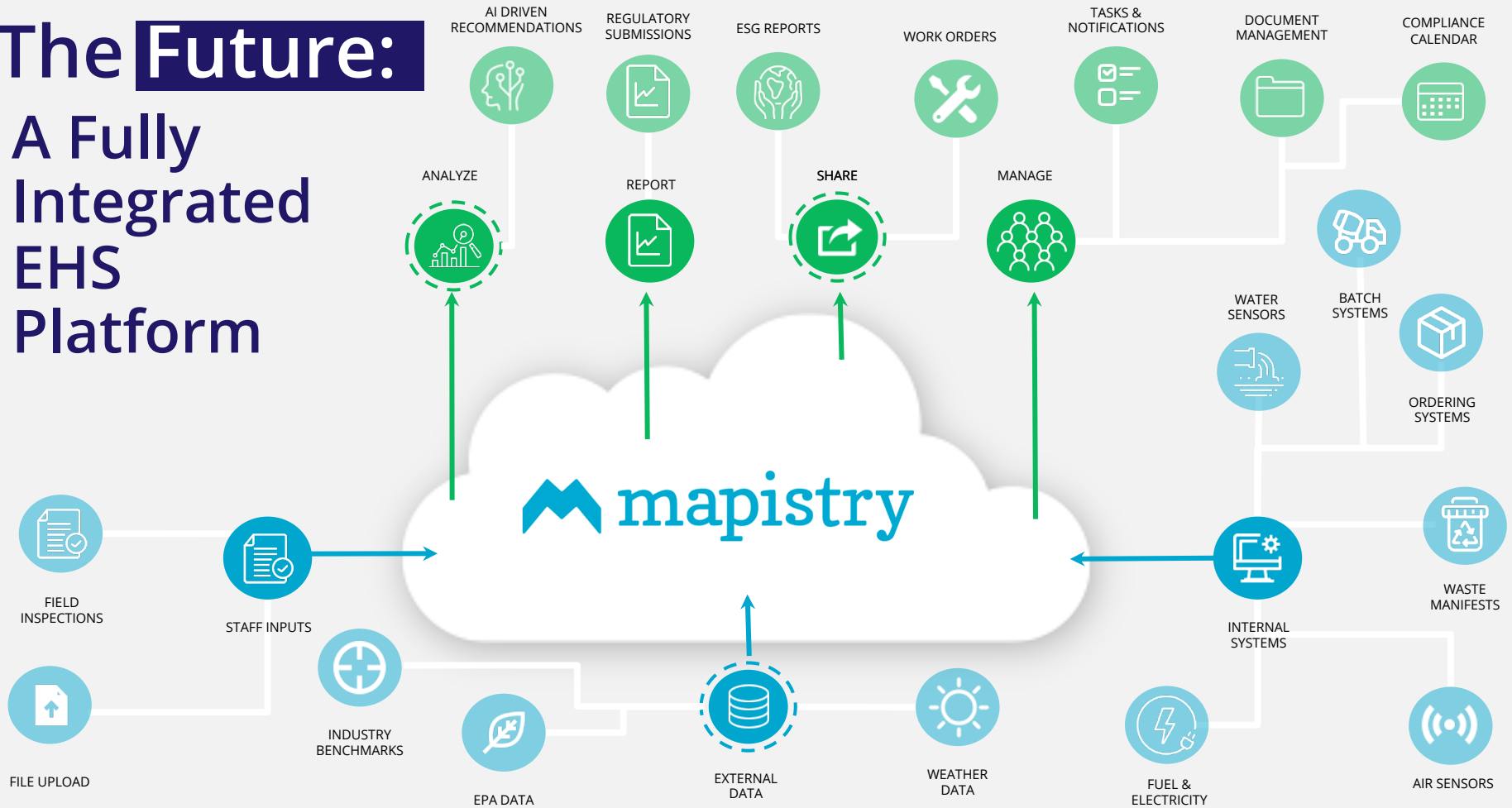
The Future:

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The Future:

A Fully Integrated EHS Platform



If we accomplished all this, what would the world like?

- Industrial facilities would *actually* be compliant with environmental regulations
- Air, land and water pollution would be markedly reduced (e.g. 24% of CO2 emissions come from industry)
- EHS professionals would have time to focus on sustainability and exceeding minimum standards



Our Vision

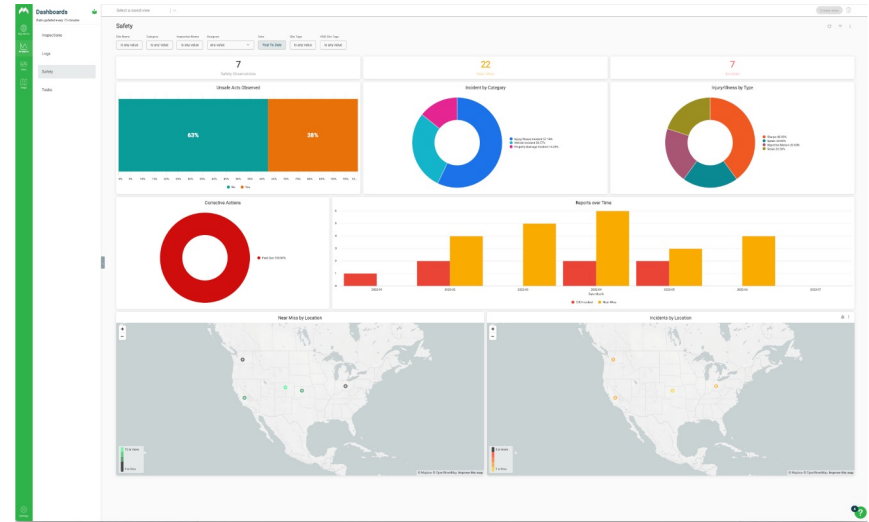
We would live in a world in which every organization's **environmental and safety programs** are a **source of employee pride, customer trust, and investor confidence.**

What's New?

Recent releases and our focus in 2022

Analytics

- Out of the box water & log dashboards
- Custom dashboards
- Save & share saved filters
- Updated every 15 minutes



Dashboards for
General Cement

Data updated every 15 minutes

Search Dashboards...

Alerts

SPCC Inspection Results

Custom Dashboard Test

Logs

Inspections

Tasks

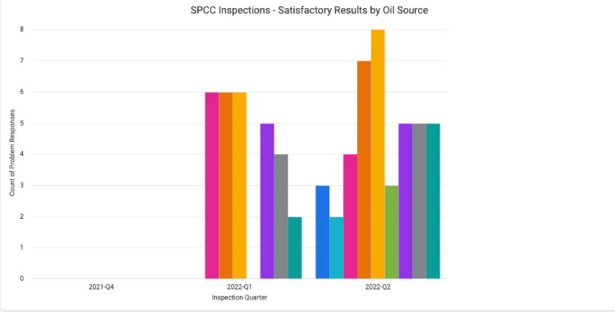
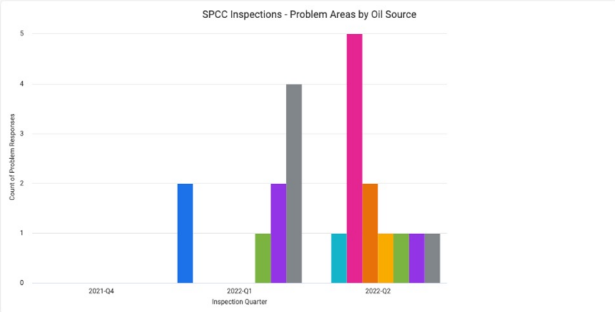
Water Results

Select a saved view

Create view

SPCC Inspection Results

Site Name: Inspection Date:



SPCC Inspections - Result Summary

Inspection Date	CA - RMC Facility Hazardous Waste Drum - 55 gallons used oil filters	CA - RMC Facility New Oil tank	CA - RMC Facility Oil Tank 1: 500-gallons mineral oil	CA - RMC Facility Oil Tank 2: 1,000-gallons diesel fuel	CA - RMC Facility Oil Tank 3: 250-gallons hydraulic oil	Demo Facility - Form Template Testing AST-1	Demo Facility - Form Template Testing AST-2	Demo Facility - Form Template Testing AST-3
1 2022-06-23	0	0	0	0	0	0	0	0
2 2022-06-22	0	1	2	1	0	0	1	1
3 2022-06-21	0	0	0	0	0	0	0	0
4 2022-06-20	0	0	0	0	0	0	0	0
5 2022-06-19	0	0	0	0	0	0	0	0
6 2022-06-18	0	0	0	0	0	0	0	0
7 2022-06-17	0	0	0	0	0	0	0	0
8 2022-06-16	0	0	0	0	0	0	0	0
9 2022-06-15	0	0	0	0	0	0	0	0
Totals	2	1	5	2	1	2	3	5

Inspection Date	CA - RMC Facility Hazardous Waste Drum - 55 gallons used oil filters	CA - RMC Facility New Oil tank	CA - RMC Facility Oil Tank 1: 500-gallons mineral oil	CA - RMC Facility Oil Tank 2: 1,000-gallons diesel fuel	CA - RMC Facility Oil Tank 3: 250-gallons hydraulic oil	CA - RMC Facility Warehouse Storage (%)	Demo Facility - Form Template Testing AST-1	Demo Facility - Form Template Testing AST-2	Demo Facility - Form Template Testing AST-3
1 2022-06-23	0	0	0	0	0	0	0	0	0
2 2022-06-22	1	2	1	2	3	0	3	2	2
3 2022-06-21	0	0	0	0	0	0	0	0	0
4 2022-06-20	0	0	0	0	0	0	0	0	0
5 2022-06-19	0	0	0	0	0	0	0	0	0
6 2022-06-18	0	0	0	0	0	0	0	0	0
7 2022-06-17	0	0	0	0	0	0	0	0	0
Totals	3	2	10	13	14	3	10	9	7

SPCC Inspections - Results



Dashboards
Data updated every 15 minutes

HAP and VOC

Inspections

Logs

Tasks

Settings

Select a saved view

HAP and VOC 3m ago

Site Tag Site Name Log Limit Status Date Range

is any value is any value is in the last 30 days More · 13

Today
current emissions data with comparison to limits

Total VOC and HAP (Current)

End Date	Log Item Name	% Lin Amc	Current Value	Limit
2022-07-20	(1) Total VOC Emissions -12 Month Rolling ...	39%	35.2	90.0
2022-07-20	(2) HAP Total - 12 Month Rolling (tons)	10%	1.3	13.0
2022-07-20	(3) Graphic Arts Total VOC Emissions - Rollin...	0%	0.0	25.0

End of Month Totals
end of last month emission data with comparison to limits

Total VOC and HAP


End Date	Log Item Name	% Lin Amo	End Mon	Limit	Unit
2022-06-30	(1) Total VOC Emissions -12 Month Rolling (L...	39%	35.2	90.0	tons
2022-06-30	(2) HAP Total - 12 Month Rolling (tons)	10%	1.3	13.0	tons
2022-06-30	(3) Graphic Arts Total VOC Emissions - Rollin...	0%	0.0	25.0	tons
2022-06-30	(3) VOC Graphic Arts	0%	0.0	4,200.0	lbs


Individual HAP (Current)

End Date	Log Item Name	% Lin Amc	Current Value	Limit
2022-07-20	1,4-Dioxane- 12 Month Rolling (tons)	0%	0.0	6.0
2022-07-20	Acetaldehyde- 12 Month Rolling (tons)	2%	0.1	6.0
2022-07-20	Acrylonitrile- 12 Month Rolling (tons)	1%	0.1	6.0
2022-07-20	Ethylene oxide- 12 Month Rolling (tons)	0%	0.0	6.0
2022-07-20	Formaldehyde- 12 Month Rolling (tons)	3%	0.2	6.0
2022-07-20	Methanol- 12 Month Rolling (tons)	2%	0.1	6.0
2022-07-20	Methyl Methacrylate- 12 Month Rolling (tons)	1%	0.1	6.0
2022-07-20	Styrene- 12 Month Rolling (tons)	0%	0.0	6.0
2022-07-20	Vinyl Acetate- 12 Month Rolling (tons)	13%	0.8	6.0






Individual HAP

End Date	Log Item Name	% Lin Amc	End Mon	Limit	Unit
2022-06-30	1,4-Dioxane- 12 Month Rolling (tons)	0%	0.0	6.0	tons
2022-06-30	Acetaldehyde- 12 Month Rolling (tons)	2%	0.1	6.0	tons
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Dashboards for 


General Cement 

Data updated every 15 minutes




-  Orig Admin
-  Analytics
-  Sites
-  Maps
-  Settings


- Inspections
- Logs
- Tasks
- Facility Audit Scores**
- Water Results

Select a saved view 

Create view 

Facility Audit Score

6m ago   

Site Name  Inspection Month

Audit Score Card Results

4


Completed Forms

Audit - Score

Site Name	Event Date	Audit Total
Phoenix	2022-05-31	30
Phoenix	2022-05-18	30
Phoenix	2022-05-04	27

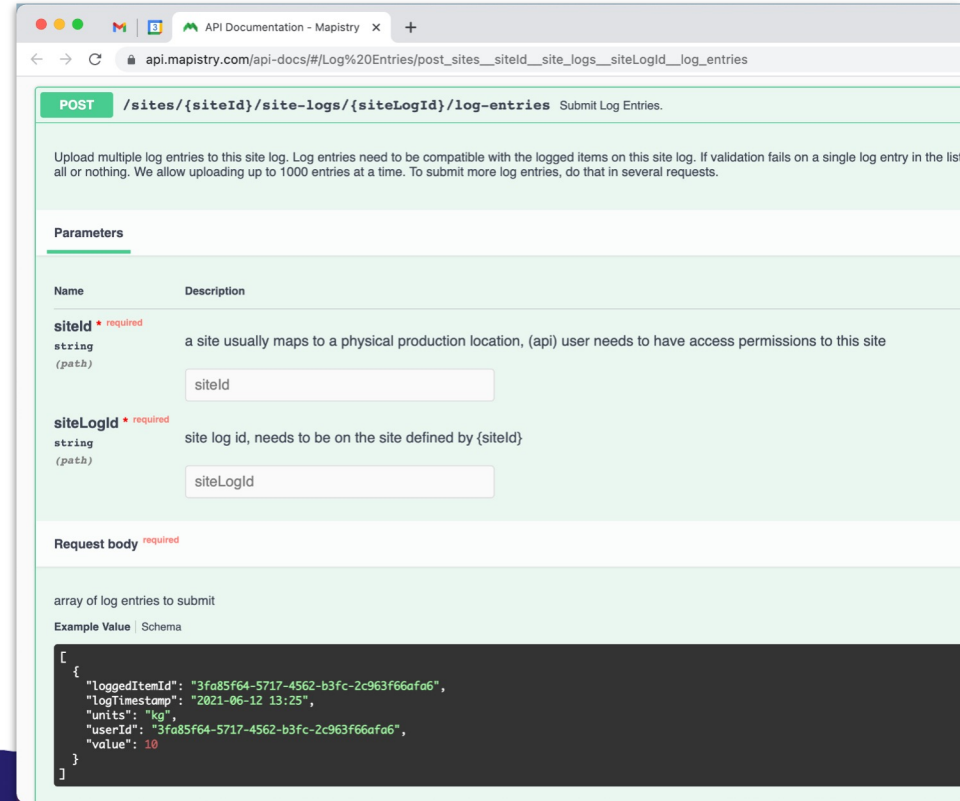
Audit Responses

Event Date Field Name	2022-05-31	2022-05-18	2022-05-04
	Number of Issues	Number of Issues	Number of Issues
1 Phoenix 1080 Bulk Petroleum Storage	1	5+	2
2 Phoenix 1080 Maintenance – Tractor Bay / Pm Bay	2	0	0
3 Phoenix 1080 Maintenance Shop- Welding Area	0	2	0
4 Phoenix Big Tire Drift / Utility Drift / Main Tire Bay	4	1	0
5 Phoenix Fire Extinguisher Drift / Utility Lunchroom / Contractor Drift	4	2	5+
6 Phoenix Shaft Landing / Mcc Room	2	0	2
7 Phoenix Small Tire(S) / Staging Drift	1	2	0
8 Phoenix Sumps/ Pump Stations (1080 / A-Area)	0	3	4
9 Phoenix Tote/ Barrel Containment Area	1	0	5+



Modern REST API

- **Eliminate manual data entry by automating the addition of new compliance data values:**
 - Daily production (e.g. cement, aggregates)
 - Groundwater or dust suppression water usage
 - Waste generated
 - Equipment/generator runtime hours
 - Water data from lab reports
- **Retrieve consolidated historical data,** whether added manually or via API
- **Directly tie into your vendors** (e.g. waste hauler or analytical laboratory) rather than entering data manually or via file uploads



The screenshot shows a web browser window displaying the API documentation for a REST API endpoint. The browser's address bar shows the URL: `api.mapistry.com/api-docs/#/Log%20Entries/post_sites__siteId__siteLogs__siteLogId__log_entries`. The page title is "API Documentation - Mapistry".

The endpoint is a **POST** request to `/sites/{siteId}/site-logs/{siteLogId}/log-entries`. The description states: "Upload multiple log entries to this site log. Log entries need to be compatible with the logged items on this site log. If validation fails on a single log entry in the list all or nothing. We allow uploading up to 1000 entries at a time. To submit more log entries, do that in several requests."

The **Parameters** section lists two required path parameters:

Name	Description
siteId * required string (path)	a site usually maps to a physical production location, (api) user needs to have access permissions to this site
siteLogId * required string (path)	site log id, needs to be on the site defined by {siteId}

The **Request body** section is marked as required and describes the request as an "array of log entries to submit". An example value is provided in a dark-themed code block:

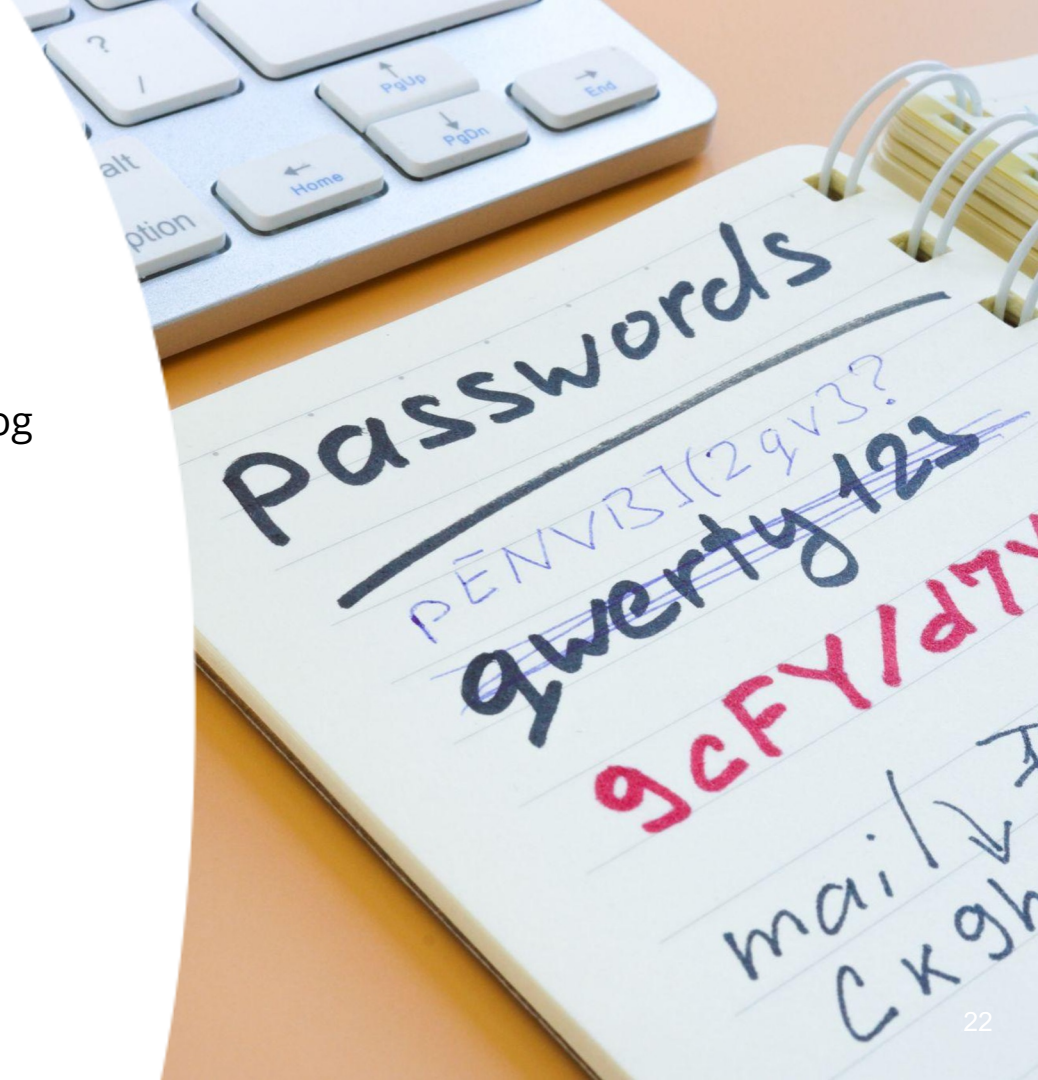
```
[  
  {  
    "loggedItemId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",  
    "logTimestamp": "2021-06-12 13:25",  
    "units": "kg",  
    "userId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",  
    "value": 10  
  }  
]
```

Recent API Improvements

- GET wastewater data
 - Flow log, sampling results, water mass load
- GET meta data
 - e.g. list of sites associated with a user
- GET and POST log data
 - e.g. air emissions, machine run time
- Improved reliability & security
 - Rate limiting, pagination, etc.

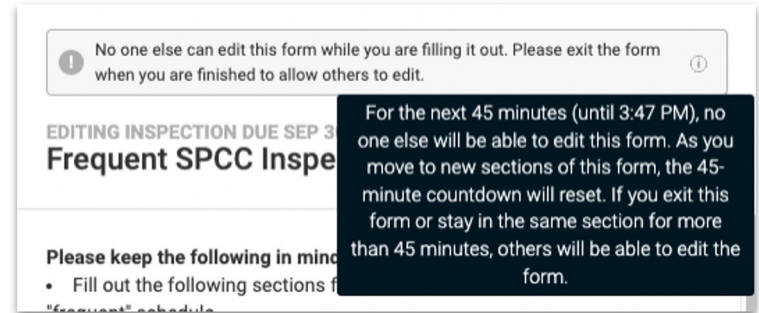
SSO & AUP

- Single sign-on (SSO) allows a user to log in with a single ID to any of several software systems
- Automated user provisioning (AUP) is the method of automatically granting and managing access to applications
- Okta, Microsoft Azure

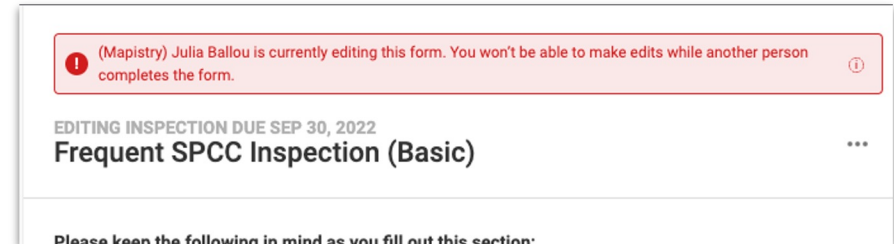


Inspection “locking”

- In the past, if two users completed an inspection simultaneously, one would have overwritten the work of the other
- Now, to prevent this, only one user can actively complete an inspection the same time.



This screenshot shows a form titled "EDITING INSPECTION DUE SEP 30, 2022" with the subtitle "Frequent SPCC Inspection". A grey notification box at the top states: "No one else can edit this form while you are filling it out. Please exit the form when you are finished to allow others to edit." A dark blue callout box on the right explains: "For the next 45 minutes (until 3:47 PM), no one else will be able to edit this form. As you move to new sections of this form, the 45-minute countdown will reset. If you exit this form or stay in the same section for more than 45 minutes, others will be able to edit the form." Below the notification, the text "Please keep the following in mind" is visible, followed by a bullet point: "Fill out the following sections for 'Frequent' schedule".



This screenshot shows a form titled "EDITING INSPECTION DUE SEP 30, 2022" with the subtitle "Frequent SPCC Inspection (Basic)". A red notification box at the top states: "(Mapistry) Julia Ballou is currently editing this form. You won't be able to make edits while another person completes the form." Below the notification, the text "Please keep the following in mind as you fill out this section:" is visible.

Accessibility

- Keyboard accessibility
 - Making software navigable without the use of a mouse
- Color accessibility
 - Accommodate color blindness and low vision users
- Baby steps: we're prioritizing accessibility in everything new we build



What's Next?

A sneak peak into what we are working on now

1. Air Emissions Logging 2.0
2. Compliance Calendar



Air Emissions Logging 2.0

We built Mapistry Logs to help customers comply with record-keeping requirements for air permits. As more and more customers have used the product, with more complex use cases, we want to revamp the product.

Furthermore, please review these PTOs and note the conditions. These conditions are necessary to ensure continued compliance with the operating requirements pursuant to all applicable District regulations, in particular:

- **Condition 1 of PTO 16207A & 16307** requires the annual plant throughput, along with a monthly summary of plant production figures for the previous twelve months to be submitted to the District, upon request;
- **Condition 3 of PTO 16207A & 16307** restricts the quarry production to not exceed 43,200 tons per day;
- **Condition 1 of PTO 16324** requires the annual diesel fuel usage and operating hours to be reported to the District, upon request;
- **Condition 3 of PTO 16324** restricts the engine to not operate more than 12 hours per day.

Air Emissions Before Mapistry

"I don't know that our paper logs are getting filled out. **Getting the information is futile.** In most cases right now, we're not getting all the information we need. Operations staff are not keeping the documentation, and if they are, they aren't sending it to us. And **if an inspector shows up on site, they certainly don't have the information organized in a manner that the inspector will think we're doing everything that we should, the way we should.** That's one of the primary things that drove us to get Mapistry."

Air Emissions Before Mapistry

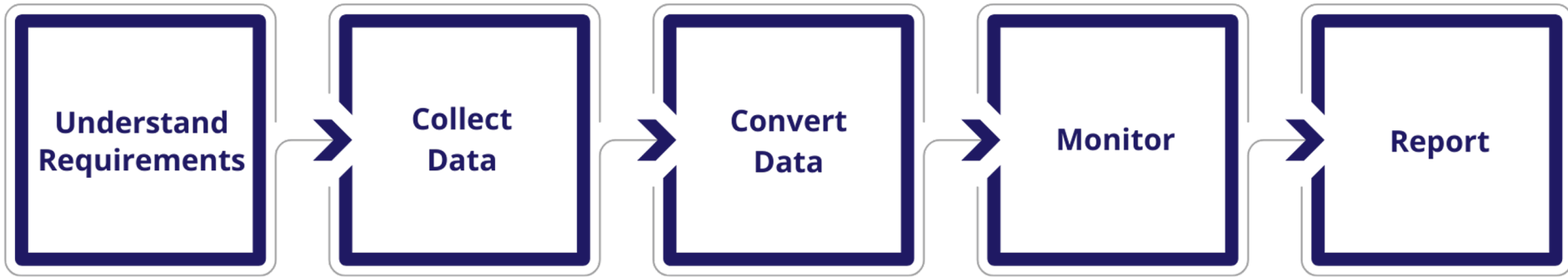
- Spreadsheets manually updated for both data entry & insights; double-entry from paper logs
- Error-prone
- Issues with version control
- No proactive reminders or alerting

Air Emissions with Mapistry Today

“Before Mapistry, **it was a week-long data project to get the numbers together for reporting. Now in Mapistry it takes 5 seconds.**

Data logging in Mapistry has been a big improvement in terms of visibility. People can see if they reached their limit. That used to always be a surprise. The team would go in at the end of the month and calculate year-to-date totals and realize at some point during that month they'd gone over the limit, but at that point they can't go back. **Having the visibility and the bar graph showing we are coming up to a limit instead of having to remember the limit or look at the permit has helped. With the visibility of everyone seeing that, someone will catch it before it becomes an exceedance.”**

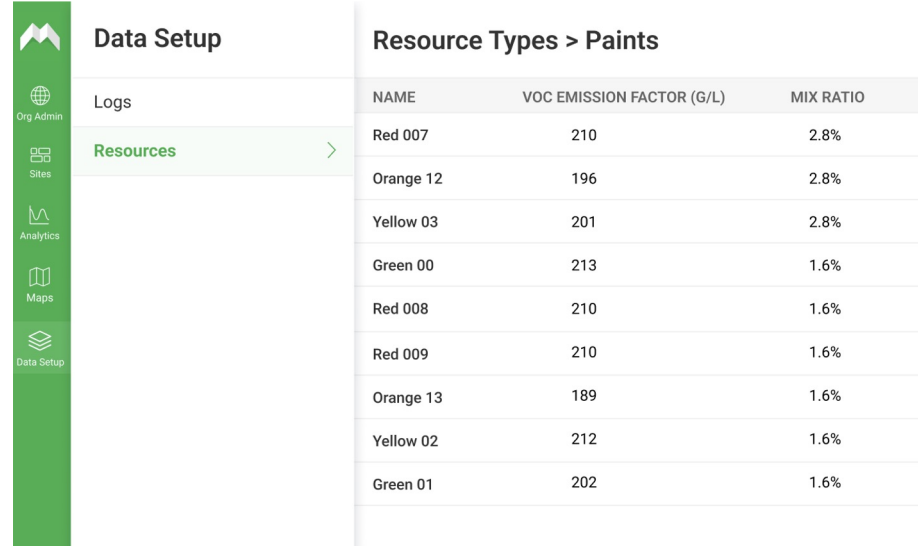
Air Permit Compliance Journey



Air Emissions 2.0 Improvements

Structured data

- Library of associated emission factors and other metadata
- Organization-level insights
- Improvements to raw & processed data tables



The screenshot displays the Mapistry interface. On the left is a green sidebar navigation menu with icons for Org Admin, Sites, Analytics, Maps, and Data Setup. The main content area shows a 'Data Setup' header and a list of menu items: 'Logs', 'Resources' (highlighted in green with a right-pointing arrow), and 'Data Setup'. To the right of the 'Resources' menu item is a table titled 'Resource Types > Paints'.

NAME	VOC EMISSION FACTOR (G/L)	MIX RATIO
Red 007	210	2.8%
Orange 12	196	2.8%
Yellow 03	201	2.8%
Green 00	213	1.6%
Red 008	210	1.6%
Red 009	210	1.6%
Orange 13	189	1.6%
Yellow 02	212	1.6%
Green 01	202	1.6%

Air Emissions 2.0 Improvements

- More powerful formulas & aggregation calculations
- Easier data input
- Focused insights on completeness of requirements & limit status

Compliance Calendar

- At-a-glance visibility into all of a site's upcoming compliance tasks
- Automatic source of truth for inspections and tasks completed in Mapistry
- Cross-team visibility into a site's requirements
- Reduce missed deadlines

We want your input!

- At Mapistry we believe the only way to build great products is to do it with our customers.
- We're looking for partners to meet with us regularly through the development process and provide feedback on designs and beta versions.



Thank you!