



The Data-Driven Solution to Manage Regulated Waste

March 17, 2021



23rd California Unified Program Annual
Training Conference
February 2 – March 18, 2021

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23rd Annual California CUPA Training Conference
February-March 2021

Introductions & Welcome

Moderator

Heidi Sanborn, Executive Director National Stewardship Action Council

Speakers

Chris Ripley, CEO Smarter Sorting

Jeff Scott, Director of Retail Services US Ecology



Topics

1. The Problem: Lack of Transparency
2. Smarter Pickup: How it works
3. What this Means for Regulators



What we're doing together

- Challenges with the current system result from managing paper and information across thousands of locations and touchpoints.
- Retailers, Waste Transporters, TSDFs and Regulators currently have no visibility into other parts of the ecosystem in order to plan.
- The result is a regulatory environment with no common baseline for stakeholders to work from.

A new partnership: US Ecology & Smarter Sorting

- **Industry Transformation:**
Data Driven Execution leading to full life-cycle product management

Smarter Sorting and US Ecology have created a single system that optimizes how regulated products move through the entire supply chain, bringing data-driven clarity to the sector.

- **Regulatory Transparency:**
Computational, Accurate, Accountable, and Transparent

Retailers and Regulators currently depend on a Black Box system of product classification and Waste Management. Smarter Sorting's Computational Classifications have replaced the expert driven, back and forth world of classifications with a system that takes all guesswork and discussion out of the process.

Our Vision

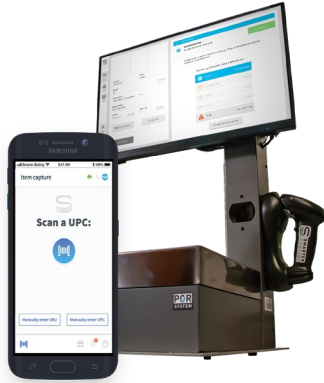
- **Goal:**
From the Back of the Store, to the Back of the Truck to the TSDf, create data driven transparency through the entire regulated waste management process.
- **Outcome:**
We have created the first full life-cycle-product management solution for regulated items
 - Every piece of waste is tracked on an item by item basis from generation to disposal
 - Complete transparency into every container at every generator in real time
 - Take all guesswork out of tracking generator status
 - Give retailers and regulators a transparent understanding of every product's CA or Federal Waste code



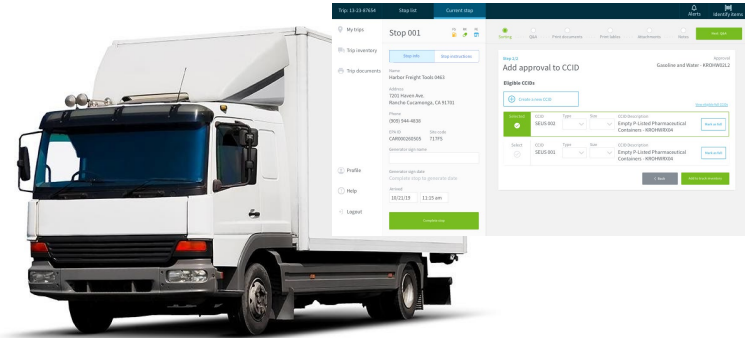
How it works



We Connect The Back of the Store to The Back of Truck



Back of Store Scanning Technology automates employee decision making and tracks the path of every waste item

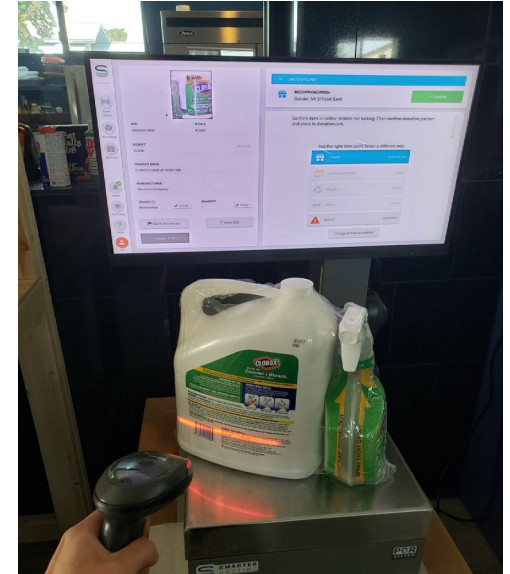


Waste Transporter Integration ensures every item is managed correctly, compliantly and tracked through disposal.

Back of Store solution

Every item in a retailers inventory is classified for federal and state waste codes, plus transporter profile. This enables each item to be managed in-store with an eye towards full life-cycle product management. The result:

- Accurate, accountable decision making by employees
- Full transparency into every store's waste stream on an item and bin basis
- Real Time Generator Status tracking
- Fewer stops leading to reduction in CO₂ emissions
- Avoid unnecessary waste creation



Back of Truck solution

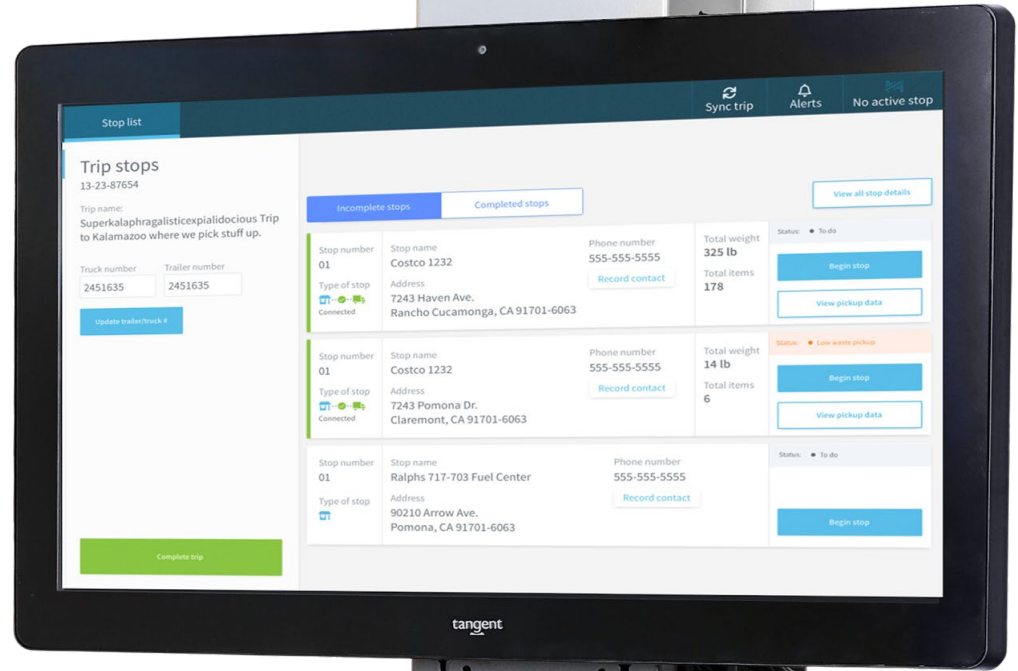
US Ecology's in-truck system is integrated with the back of store solution, taking all guesswork out of waste pickups.

- Matches waste profiles
- Every pickup is automatically audited, ensuring in-store data matches manifest data
- Each shipment of waste is tracked from store to disposal



What the driver sees

- Upcoming Stops

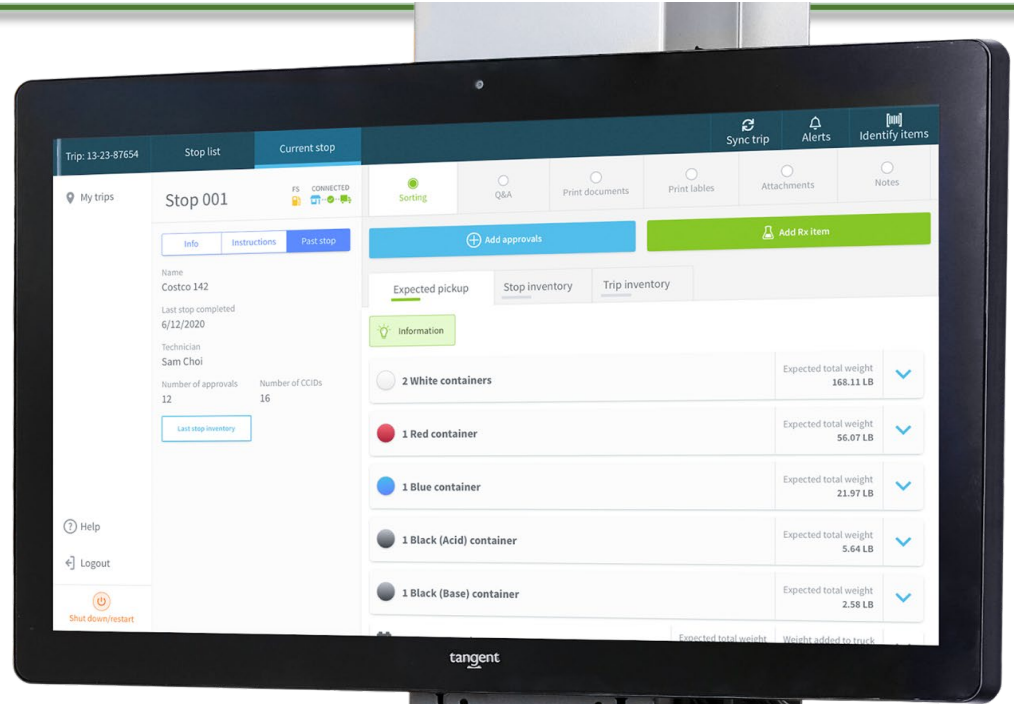


TruckSIS in cargo area of USEcology transporters



What the driver sees

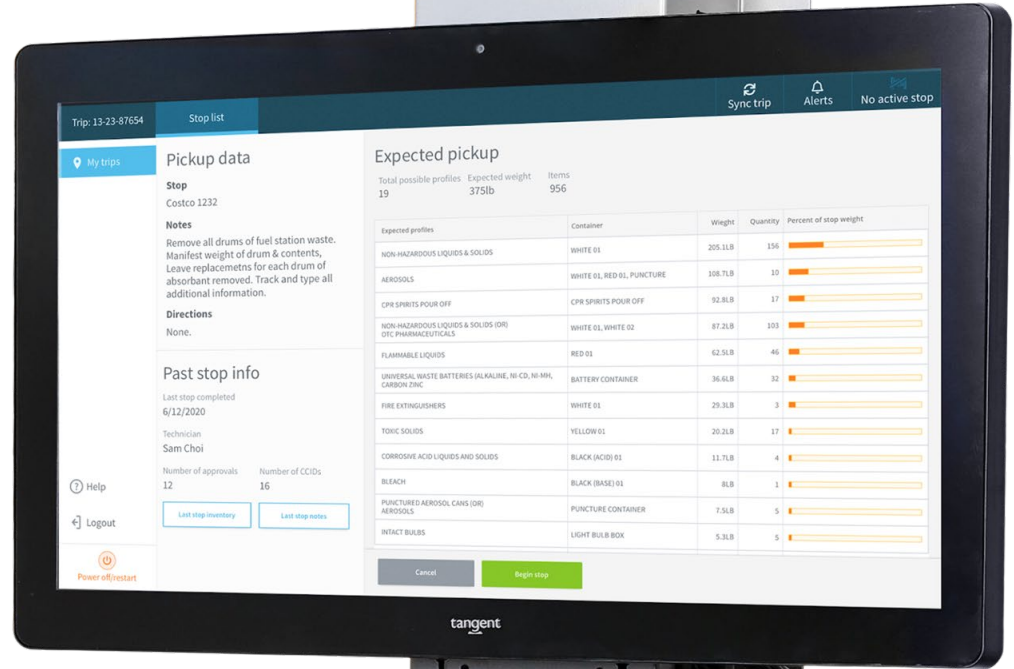
- Materials per stop
- Volume per stop



TruckSIS in cargo area of USEcology transporters

What the driver sees

- Cumulative pickup for all scheduled stops



TruckSIS in cargo area of USEcology transporters

System results

- Prints Labels
- Prints Manifests
- Tracks every Shipment



What it means



Store: Granular, real time accumulation tracking per profile

Retailer Waste Bins	Accumulated Weight (Lbs)		
	77 days	154 days	231 days
BLACK (ACID)	15.5	26.3	26.3
BLACK (BASE)	11.6	12.4	14.3
BLUE (REACTIVE)	9.0	17.7	26.1
RED (FLAMMABLE)	19.8	39.5	94.2
WHITE (STATE TOXIC)	338.8	661.0	1024.0
YELLOW (TOXIC)	12.9	16.9	29.7
Battery Container	11.6	29.3	67.6
CPR Spirits Pour Off Container	37.1	170.0	245.7
Nicotine Recycling	2.9	9.0	13.9
Light Bulb Box	0.0	1.2	1.6
Total	459.2	983.3	1,543.4

Hauler Waste Profile	Accumulation			
	77 days	154 days	231 days	
AEROSOLS	2.6	10.8	16.8	<i>lbs</i>
FLAMMABLE LIQUIDS	1.6	2.8	7.7	<i>gallons</i>
FLAMMABLE SOLIDS	0.9	0.9	0.9	<i>lbs</i>



Accumulation is tracked scan by scan, profile by profile with summary roll-ups and detailed drill downs available.

This data allows pickup thresholds to be tracked for any combination of waste type / weight / time.

Title 22, Division 4.5: 66262.34



Store: Flammable accumulation example

Hauler Waste Profile	Accumulation			
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Waste pickup automatically scheduled when any profile exceeds regulatory thresholds for available storage capabilities — more efficient than a set schedule.

Title 22, Division 4.5: 66262.34

MAQ Per Control Area from IFC

5003.1.1

- Class IA Flammable Liquids: 30 gal
- Class IB & IC Flammable Liquids: 120 gal
(Limits doubled with sprinkler system or cabinet)

OSHA Standards from 29 CFR

1926.152(b)(2)

Quantities of flammable liquid in excess of 25 gallons shall be stored in an acceptable or approved cabinet

1926.152(b)(3)

Not more than 60 gallons of Category 1, 2 and/or 3 flammable liquids or 120 gallons of Category 4 flammable liquids shall be stored in any one storage cabinet.

Store: Real time generator status tracking

- Track Generator Status by location in real time
- Retailer and Transporter share access
- Mitigates risk of episodic event
- Retailer can share data w/ Regulators

Title 22, Division 4.5: 66262

Audit Mode
Generator Status

Region	State	WHS #	Warehouse	Generator Type	Dec 20	Jan 21	Feb 21
MW	KY	634	NL Louisville	SQG	VSOQ	VSOQ	VSOQ
		1156	Lexington	SQG	VSOQ	VSOQ	VSOQ
		1197	Florence	SQG	VSOQ	VSOQ	VSOQ
		1238	Louisville	SQG	VSOQ	VSOQ	VSOQ
NW	WA	734	Nampa	SQG	VSOQ	VSOQ	VSOQ
		1	Seattle	SQG	VSOQ	VSOQ	VSOQ
		6	Tukwila	SQG	VSOQ	VSOQ	VSOQ
		8	Kirkland	SQG	VSOQ	VSOQ	VSOQ
		13	Silverdale	SQG	VSOQ	VSOQ	VSOQ
		61	Federal Way	SQG	VSOQ	VSOQ	VSOQ
		64	Tumwater	SQG	VSOQ	VSOQ	VSOQ
		95	Tacoma	SQG	VSOQ	VSOQ	VSOQ
		103	Clarkston	SQG	VSOQ	VSOQ	VSOQ
		106	Aurora Village	SQG	VSOQ	VSOQ	VSOQ
		110	Issaquah	SQG	VSOQ	VSOQ	VSOQ
		112	Wenatchee	SQG	VSOQ	VSOQ	VSOQ
		114	Everett WA	SQG	VSOQ	VSOQ	VSOQ
		486	Kennewick	SQG	VSOQ	VSOQ	VSOQ

Scan Date: Last 3 months | Region: (All) | State: (All)

WHS #: (All) | Warehouse: (All) | Dept Number: (All)

Generator Status: VSOQ | Item Number: (All) | Vendor Name: (All)

Tom

RetailSIS in Back of Store

Store: "Inspection Mode" to facilitate inspections

- Inspection Mode facilitates regulatory inspections
- Video that explains how the system works to regulators.
- Easy access to current on-site accumulations to show compliance.

Audit Mode

What's this?
View all items and where they are contained. Every item is scanned into the RetailSIS and given a specific waste path. The this device is also connected to US Ecology to automatically request pickups when necessary. [Watch overview video](#)

GENERATOR STATUS VSQG
LAST PICKUP DATE: 1.15.2020
NEXT REQUIRED PICKUP: 39 days
TOTAL HAZMAT: 231.98 LB
ACUTE HAZMAT: 0 LB

SELECT A PATH: HAZMAT
FILTER BY STATE: All

FLAMMABLE LIQUIDS 01
ACCUMULATION START: 2.21.2020
10 items 16.07 LB

UNIVERSAL WASTE BATTERIES 01
ACCUMULATION START: 1.24.20
40 items 32.04 LB

AEROSOLS 01
ACCUMULATION START: 1.16.20
26 items 14.68 LB

NON-HAZ LIQUIDS AND SOLIDS 01
ACCUMULATION START: 1.16.20
94 items 353.64 LB

NON-HAZ LIQUIDS AND SOLIDS 02
ACCUMULATION START: 4.21.20
21 items 32.01 LB

BULBS 01
ACCUMULATION START: 1.16.20
4 items 2.79 LB

PROFILE Flammable Liquids
ACCUMULATION START: 2.21.2020
PACKAGE STATE: Full

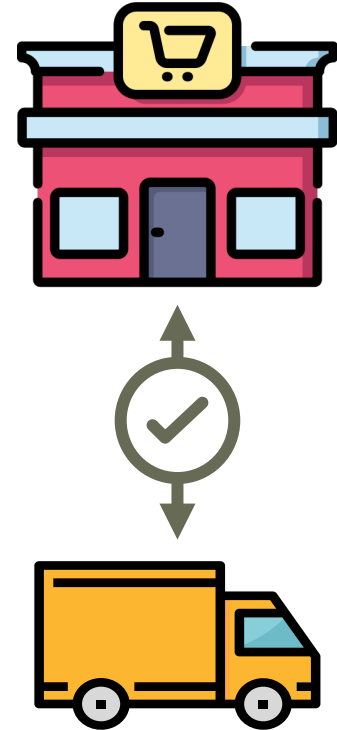
Item name	Date/Time	Item #	Quantity	Weight
SEAFOAM MOTOR TREATMENT	09:58 2-04-2020	913437	1	0.050
CHEV TECHRON FUEL 6/140Z	13:12 2-04-2020	136589	1	1.50
STP FUEL INJECTOR 12Z/12PK 00506	15:28 2-04-2020	998564	4	8.25
LISTERI ULTECLEAN MWA5H	09:32 6-03-2020	356478	1	2.75
MONSTER SCREENCLEAN 237ML	12:03 6-30-2020	778421	2	2.50
SPEEDBLK SUPERBLK INDIA INK	15:29 8-06-2020	654238	1	3.50
			10	16.07 LB

[Print contents](#) [Exit auditor mode](#)

RetailSIS in Back of Store

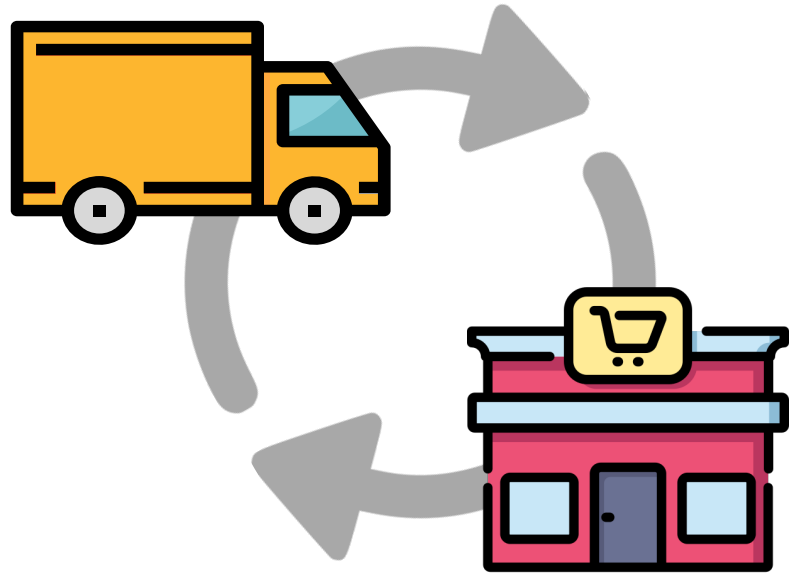
“Audit Mode” ensures manifest/store log agreement

- Often, store logs and hauler manifests differ to the point that a regulator cannot determine what was actually picked up.
- Today there is no mechanism today to ensure that a store log matches a hauler manifest.
- Audit Mode Ensures:
 - All items slated for pickup are, in fact, collected
 - Profiles match
 - Allow regulator to actually see the profile that a specific product is mapped to.



Transporter: Accurate and compliant pickups

- Confidence in what we're picking up and how to document it appropriately, before we pick it up
- Know the profile of what we're picking up



Transporter: Manifest value

- We know what we're picking up — currently we take generators word
- We know how to document it correctly
- The system allows us to know the Manifest is 100% correct for the shipment
- Each shipment and each item within the shipment is track from the generator to the TSDF

Areas of generator compliance

CA Regulations Affected include:

Title 22, Division 4.5:

Generator Status: 66262

Waste Characterization: 66261,
66262.11

Manifesting: 66262.20

Labeling: 66262.31

Packaging: 66262.30

Waste Accumulation: 66262.34

LDR: 66268

Used Oil: 66279

Universal Waste: 66273



Areas of offeror/transporter compliance

DOT Regulations Affected include:

CFR 49:

Shipper Responsibility: 173 Subpart B

HM Shipping Papers: 172.201 / 172.202 / 172.205

Marking: 172 Subpart D

Labeling: 172 Subpart E

Placarding: 172 Subpart F

Classification: 171.2 / 171.3



In Summary

Industry Transformation:

Data Driven Execution leading to full life-cycle product management

Smarter Sorting and US Ecology set out to bring transparency to the regulated product lifecycle. We have created a single system that optimizes how regulated products move through the entire supply chain, bringing data-driven clarity to a sector that has never benefited from modern principles of transparency.





Any Questions?



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BREAK TIME!

