



DOECAP Treatment, Storage, and Disposal Facility Audit Program Trends Analysis



Pete Yerace
Environmental Scientist
EMCBC



Agenda



Treatment, Storage, and Disposal Facility (TSDF) Audit Findings Trending

- TSDFs audited by DOECAP
- Total Findings by TSDF in Calendar Year (CY) 2018 and 2019
- Total Findings by Concentration in CY 2018 and 2019
- Top Findings by Concentration for CY 2019
- Common Trends Identified with Different Views
- Conclusions



CY 2018-2019 Comparison: TSDFs Audited by DOECAP



Number of TSDFs Audited by DOECAP in 2018: 9

Number of Findings in 2018: 19

Number of TSDFs Audited by DOECAP in 2019: 8

Number of Findings in 2019: 38



CY 2018-2019 Comparison: Total Findings By TSDF



Facility	2018 Findings	2019 Findings
TSDF 1 (Haz Waste Only Facility)	--	8
TSDF 2 (Haz Waste Only Facility)	2	--
TSDF 3	0	6
TSDF 4	5	5
TSDF 5	2	2
TSDF 6	Facility partial closure	--
TSDF 7	Facility closure	--
TSDF 8	4	5
TSDF 9	1	0
TSDF 10 (New Rad Waste Processing Facility)	--	9
TSDF 11	5	3
TOTALS	19	38



CY 2018-2019 Comparison: Total Findings By TSDF (Chemical Facilities)



Haz Waste Only Facilities	2013	2014	2015	2016	2017	2018	2019
Chemical Facility 1	--	--	2	--	--	--	--
Chemical Facility 2	4	4	--	--	--	--	--
Chemical Facility 3	--	9	--	10	--	--	8
Chemical Facility 4	--	8	--	3	--	2	--
TOTALS	4	21	2	13	0	2	8



CY 2018-2019 Comparison: Total Findings By Concentration



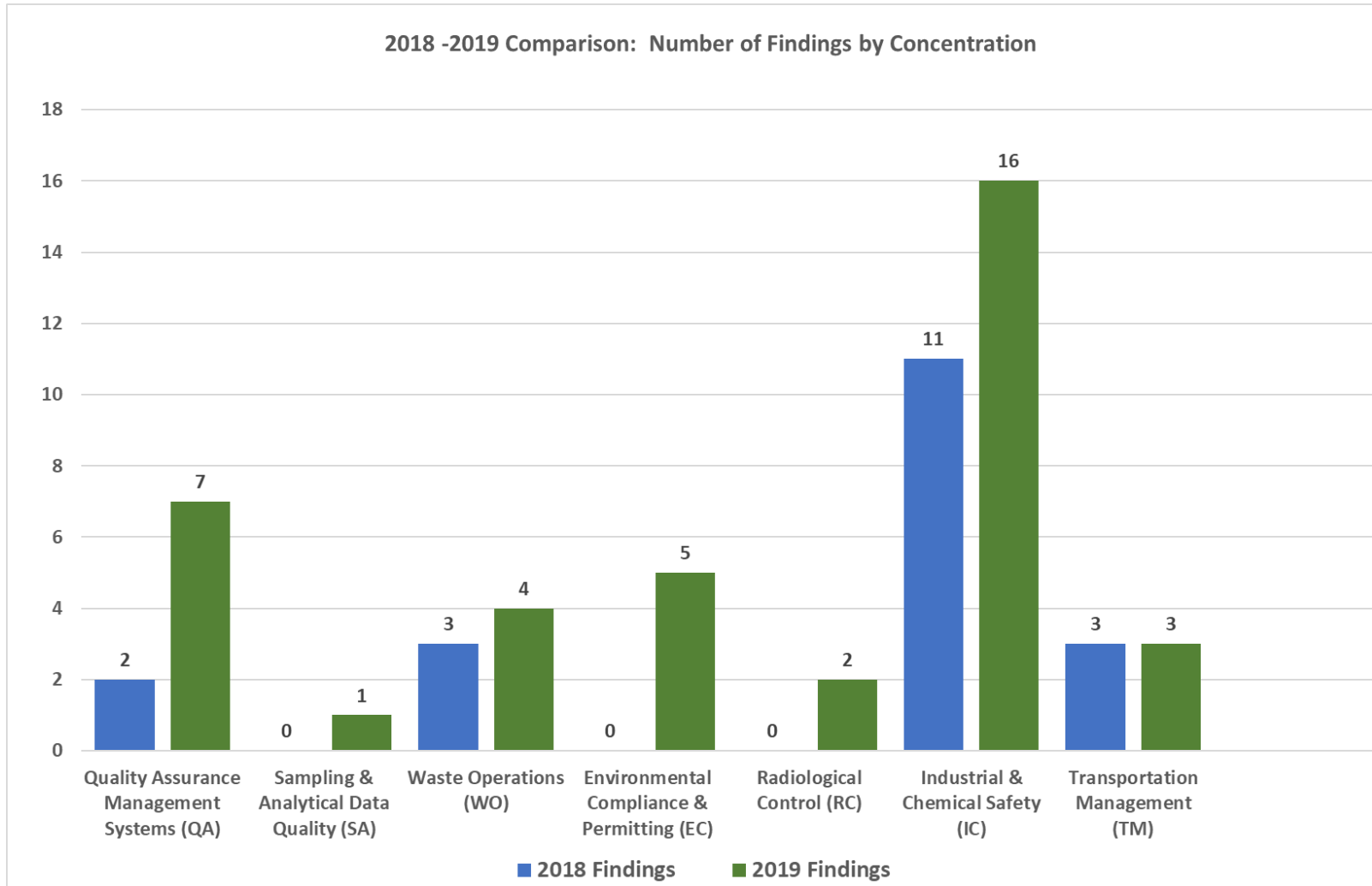
Concentration Area	2018 Findings	2019 Findings
Quality Assurance Management Systems (QA)	2	7
Sampling & Analytical Data Quality (SA)	0	1
Waste Operations (WO)	3	4
Environmental Compliance & Permitting (EC)	0	5
Radiological Control (RC)	0	2
Industrial & Chemical Safety (IC)	11	16
Transportation Management (TM)	3	3
TOTALS	19	38



CY 2018-2019 Comparison: Total Findings By Concentration



2018 -2019 Comparison: Number of Findings by Concentration





CY 2019 Top Findings By Concentration



Concentration Area	2019 Findings	Top Findings		
		Reference	# of Instances	Subject Area
Quality Assurance Management Systems (QA)	7	NQA-1, Requirement 17	3	Quality records not being maintained properly
Sampling & Analytical Data Quality (SA)	1	Operating Procedure	1	Lack of procedure
Waste Operations (WO)	4	Waste Tracking Procedures	2	Waste Tracking
		RCRA Part B Permit	2	Not compliant with permit
Environmental Compliance & Permitting (EC)	5	RCRA Permits/ State Regulations	4	Not labeling containers and areas correctly
Radiological Control (RC)	2	Operating Procedures	1	Insufficient radiation storage signage
			1	PPE maintenance
Industrial & Chemical Safety (IC)	16	29 CFR 1910.101(b)	2	Handling and storage of cylinders
		29 CFR 1910.1450(e)(4)	2	Review of Chemical Hygiene Plan
		Facility Safety & Health Manual/Rules	8	Various rules violated: Emergency exit & equipment inaccessible; unsafe work practices
Transportation Management (TM)	3	49 CFR 172	1	Transportation plan not reflecting current practices
		Operating Procedures	2	Insufficient system testing / lack of information documentation
TOTALS	38			



Quality Assurance Management Systems



Reference Standard	Finding
NQA-1, Requirements 2 & 5	<p>The current procedures do not reflect the actual processes as being implemented in the field and the facility has not developed operating procedures that are applicable to the current work processes.</p> <p>Examples:</p> <ol style="list-style-type: none"> 1) Lifting and rigging equipment inspections are not being performed and documented as required per Operating Procedure, "Lifting and Rigging." 2) Requirements established in the Quality Assurance Manual for QA record storage and retention are not flowed down to implementing procedures.
Quality Assurance Plan	The facility that provided the overhead crane and hoist service has not been evaluated as a quality vendor and has not been placed on their approved vendor list.
NQA-1, Requirement 17	Quality records for crane and/or forklift inspections which require records retention are not stored in a 1-hour fire cabinet to protect from damage or loss prior to being scanned to the USG database.
NQA-1 Requirement 17	Quality records are not maintained in a storage facility, vault, room, or container(s) with a minimum two-hour fire rating.
NQA-1 Requirement 2	Training records were not current for all positions that were randomly selected.
NQA-1, Requirement 17, 601 and 603 (Storage)	Completed quality records are not being stored in a 1-hour fire rated cabinet prior to being scanned.
Quality Assurance Plan, Quality Assurance Indoctrination and Training	Commercial Grade Dedication (CGD) training was not current in the training database for one employee.



Quality Assurance Management Systems



Reference Standard	Finding
NQA-1, Requirements 2 & 5	The current procedures do not reflect the actual processes as being implemented in the field and the facility has not developed operating procedures that are applicable to the current work processes. Examples:
Quality Assurance	...ed and documented as A record storage and not been evaluated as a st. records retention are not to being scanned to the
NQA-1, Requirement 17	USG database. Quality records are not maintained in a storage facility, vault, room, or container(s) with a minimum two-hour fire rating.
NQA-1 Requirement 2	Training records were not current for all positions that were randomly selected.
NQA-1, Requirement 17, 601 and 603 (Storage)	Completed quality records are not being stored in a 1-hour fire rated cabinet prior to being scanned.
Quality Assurance Plan, Quality Assurance Indoctrination and Training	Commercial Grade Dedication (CGD) training was not current in the training database for one employee.

Quality Assurance Management Systems:

- Quality records not being stored properly (fire-rated cabinets)
- Training records not current



Minimal Findings

Sampling and Analytical Data Quality

- Lack of procedure to address operations processes



philipmattarini
Courtesy www.clipart-library.com/



Waste Operations

Reference Standard	Finding
RCRA Part B Permit	Accessible entry points to the active area of the facility (vehicle and personnel gates) were not controlled/monitored.
RCRA Part B Permit	Waste flammable gas cylinders were not adequately separated from waste cylinders containing oxidizers. They were stored within 3 feet of each other without a fire barrier.
Waste Receipt, Tracking and Inventory	Used scintillation cocktail vials are accumulated in a red container in the Health Physics Lab. The container is not marked with the words "hazardous waste."
Waste Tracking and Documentation	A radioactive waste Sealand container location was listed as being in aisle P-43. It was actually located in aisle P-42.



Courtesy www.clipart-library.com/

Trends:

- Waste tracking: Improper documentation and labeling of waste
- RCRA Part B permit non-compliance:
 - Entries not monitored
 - Gas cylinders not stored properly



Environmental Compliance & Permitting

Reference Standard	Finding
Safety and Health Manual, Hazard Communication and Chemical Safety	Facility had multiple sub-containers of what appeared to be "Simple Green" that weren't labeled.
Personnel Training Program	The indoctrination checklist for initial training for a new employee was not signed by the training manager.
RCRA Permit	Some security signs outside the mixed waste storage pad were faded to the point that they are not legible from 25 feet as required by regulations and RCRA permit.
RCRA Permit	Two satellite accumulation containers in the outside maintenance building were labeled as hazardous waste but were not marked with the hazards of the contents.
State Department Environmental Rules and Regulations	Hazardous waste was identified on the surface of the lid of the satellite accumulation area container.



Courtesy www.clipart-library.com/

Trends:

- RCRA Part B permit non-compliance:
 - Improper security signage
- Containers not labeled properly



Radiological Control

Reference Standard	Finding
Operating Procedure: Posting Requirements	A radiation storage area was not posted at all access points with the required signage indicating the radiological hazard. An entrance to the hallway leading to the chemical laboratory was not posted with the existing radiological conditions in the hallway, where radioactive material was stored.
Operating Procedures: Use of Individual Respiratory Protection Equipment and Respiratory Protection Program	Several personnel who are required to use respirators were overdue beyond one year for respirator fit tests.



Courtesy www.clipart-library.com/

Only 2 findings:

- Not following operating procedures:
Improper signage in radiation storage area
Insufficient respirator maintenance



Industrial and Chemical Safety



Reference Standard	Finding
29 CFR Part 1910.134(h)(2)(I) Facility Health and Safety Rules	Self-contained Breathing Apparatus equipment was not properly stored in the sample rack area. Emergency exit route was blocked in the receiving building warehouse.
Chemical Hygiene Plan Facility Health and Safety Rules	As part of the review the auditor identified that one hood sash in the receiving lab was malfunctioning and could not be lowered. In addition, the auditor interviewed lab personnel and it was not clear that the personnel understood the fume hood sash height requirement as defined in the Clean Harbors Chemical Hygiene Plan. Access to fire extinguishers were restricted at several locations within the facility.
29 CFR Part 1910.303(g)(1) and Part 1910.303(g)(1)(ii) Facility Health and Safety Rules	In multiple locations at the facility there were materials stored in areas that limited ready and safe operation and maintenance of electrical equipment. Work rests of offhand grinding machines in the fab shop and day maintenance shop exceeded the maximum opening of one-eighth inch.
Facility Safety and Health Manual, Job Safety Analysis and Safe Work Permits Facility Safety and Health Manual, Compressed Gas Safety	Facility does not have individual Job Safety Analysis or Safe Work Permits for their key process/activity areas. There are cylinders stored outside the main process building that do not have an overhead cover.
Facility Safety and Health Manual, Forklift	Forklift was operated inside the warehouse without a spotter.



Industrial and Chemical Safety

Reference Standard	Finding
NEC 210.8 (B) (5)	An inspection of the Radiation Laboratory revealed an electrical outlet within 6' of the sink. It does not have GFCI protection.
29 CFR 1910.1450(e)(4)	Laboratory Chemical Hygiene Plan hasn't been reviewed since 2017.
29 CFR 1926.152(g)(9) Conspicuous and legible signs prohibiting smoking shall be posted.	An inspection of the new fuel storage and refueling area found there are not any "No Smoking" signs posted around or near fueling area.
29 CFR 1910.101(b), Compressed Gases	Several cylinders were observed in the full flammable cylinder storage area adjacent to the outside maintenance shop that were not secured.
Job Hazard Analysis: Operation of hydraulic and pneumatic precompactors	A worker was observed placing their hand within the designated "moving parts" of the operation.
29 CFR 1910.1450(e)(4)	The Laboratory Chemical Hygiene Plan is reviewed on a 2-year review cycle but should be reviewed annually.
29 CFR 1910.101(b), Compressed Gases	Facility was storing one oxidizing gas cylinder (labeled oxygen) and one flammable gas cylinder (labeled propane) next to each other. These are designated as incompatible materials and should be stored according to OSHA requirements.



Courtesy www.clipart-library.com/



Industrial and Chemical Safety

Reference Standard	Finding
NEC 210.8 (B) (5)	An inspection of the Radiation Laboratory revealed an electrical outlet within 6' of the sink. It does not have GFCI protection.
29 CFR 1910.1450(e)(4)	Laboratory Chemical Hygiene Plan hasn't been reviewed since 2017.
29 CFR 1926.152(g)(9) Conspicuous and legible signs prohibiting smoking shall be posted.	An inspection of the new fuel storage and refueling area found there are not any "No Smoking" signs posted around or near fueling area.

Trends:

- Facility Safety and Health Rules and Regulations
 - Emergency exits and equipment not accessible
 - Unsafe work practices
- 29 CFR 1910 non-compliance:
 - Chemical Hygiene Plan not annually reviewed
 - Gas cylinders not stored properly



Transportation Management

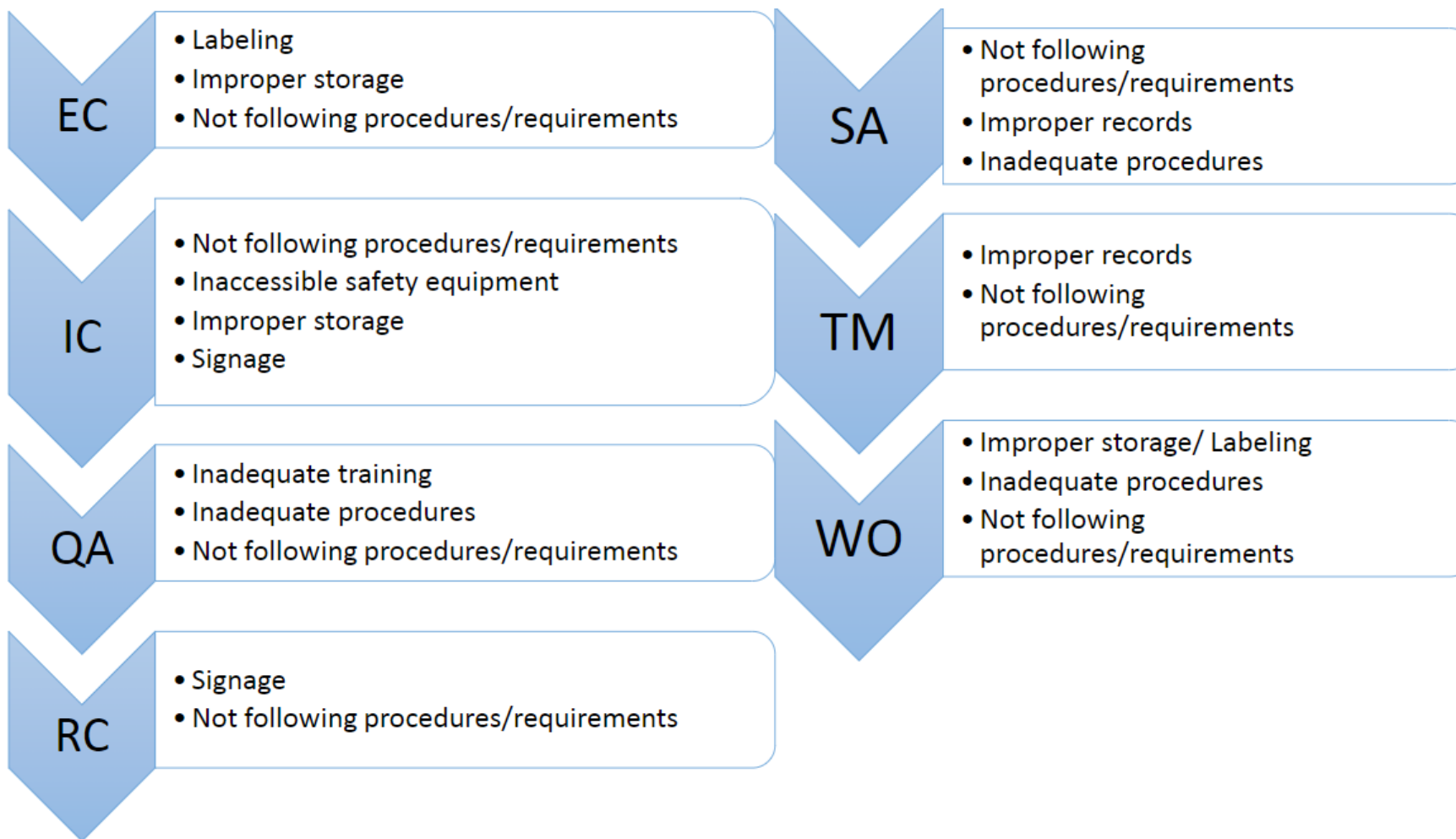
Reference Standard	Finding
Operating Procedure: Software Control, Verification, and Validation	The required information to demonstrate either a primary or a secondary verification or validation was not provided on the spreadsheets used to perform transportation calculations for shipping of hazardous materials.
49 CFR § 172.800(b)	The current Transportation Plan does not reflect all current practices in the field.
Operating Procedure: Transportation Incident Notification Response	Transportation Incident Notification and Response system test was not performed in the past calendar year (2018).

Trends:

- Not following operating procedures:
 - Insufficient documentation
 - Lack of system testing
 - Transportation Plan not reflecting current practices



CY 2019 Common Trends - View 1





CY 2019 Common Trends - View 2 Trending Across Concentration



EC	IC	QA	RC	SA	TM	WO
<ul style="list-style-type: none">• Not following procedures• Improper storage	<ul style="list-style-type: none">• Not following procedures• Improper storage	<ul style="list-style-type: none">• Not following procedures• Inadequate procedures	<ul style="list-style-type: none">• Not following procedures	<ul style="list-style-type: none">• Not following procedures• Inadequate procedures	<ul style="list-style-type: none">• Not following procedures	<ul style="list-style-type: none">• Not following procedures• Improper storage• Inadequate procedures



Conclusions



- **Overall findings from 2018 doubled in 2019**
 - From 19 increasing to 38
- **Top 2 concentrations with most findings in 2019**
 - **Industrial and Chemical Safety**
 - Unsafe work practices
 - Blocked emergency exits and equipment
 - Improper storage of compressed gas cylinders
 - Review of Chemical Hygiene Plan
 - * **Quality Assurance Management Systems**
 - Quality records not being stored properly (fire-rated cabinets)
 - Training records not current
- **Reasons and Explanations**
 - In CY 2019 audited a new facility to DOECAP
 - In CY 2019 audited a Chemical only facility (last time audited was 2016)
- **Mature facilities, or those that are audited annually, are less likely to establish trend**
- **Future focus of audits - Operations and Implementation of Procedures**



Questions