

Pasadena Citizens' Advisory Council



**20th Annual
Worker Safety Report**
*promoting continuous improvement
2000-2021*

*FULL Presentation FINAL
February 25, 2022*

The report is about PCAC plants

- ❑ Refineries that refine crude oil into gasoline and other fuels
- ❑ Chemical plants that make organic and inorganic chemicals, plastics, and fertilizer
- ❑ A plant that treats wastewater for industry and others.
- ❑ Terminals that store liquids until shipment

Safety Report is about *People* Even Though We Talk about Numbers

□ *Workers*

- Employees *and* contractors
- In 17 of 18 PCAC plants

(PCI Nitrogen did not submit data for 2021, so calculations are based on 17 plants)

□ *Workplace injuries and illnesses*

- As defined by OSHA

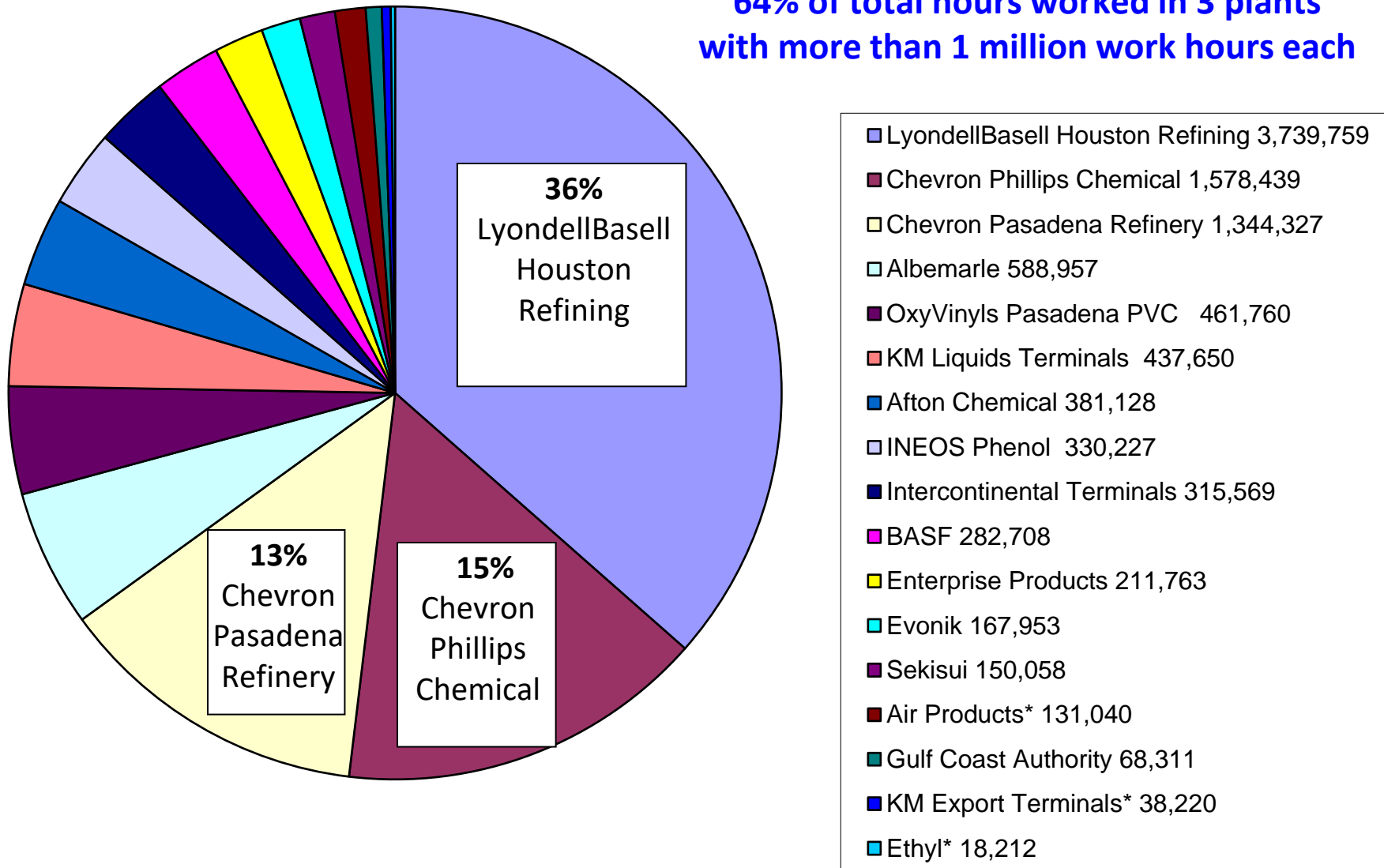
□ *Recordable Rate*

- *How many workers per 100* had a work-related injury or illness in a year
- 0.00 = best

Plant Size by Work Hours in 2021

10,246,081 Total Work Hours

64% of total hours worked in 3 plants with more than 1 million work hours each



In 2021

- **10,246,081** work hours
 - ~ 2,601 employees
 - ~ 2,325 contractors
- **22** workplace injuries or illnesses
- **1,204,467** fewer work hours than 2020
- **9** more injuries than in 2020

Zeroes are Heroes!

8 Superheroes with no employee or contractor recordables in 2021



1. Air Products*
*No contractors
2. Albemarle
3. BASF
4. Enterprise Products
5. Evonik
6. INEOS Phenol
7. Intercontinental Terminals
8. Kinder Morgan Export Terminals*
*No contractors

Zeroes are Heroes!

8 heroes with no employee recordables in 2020

1. Air Products*

*No contractors

2. Albemarle

3. BASF

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8. Kinder Morgan Export Terminals*

*No contractors



Zeroes are Heroes!

12 heroes with no contractor recordables in 2021

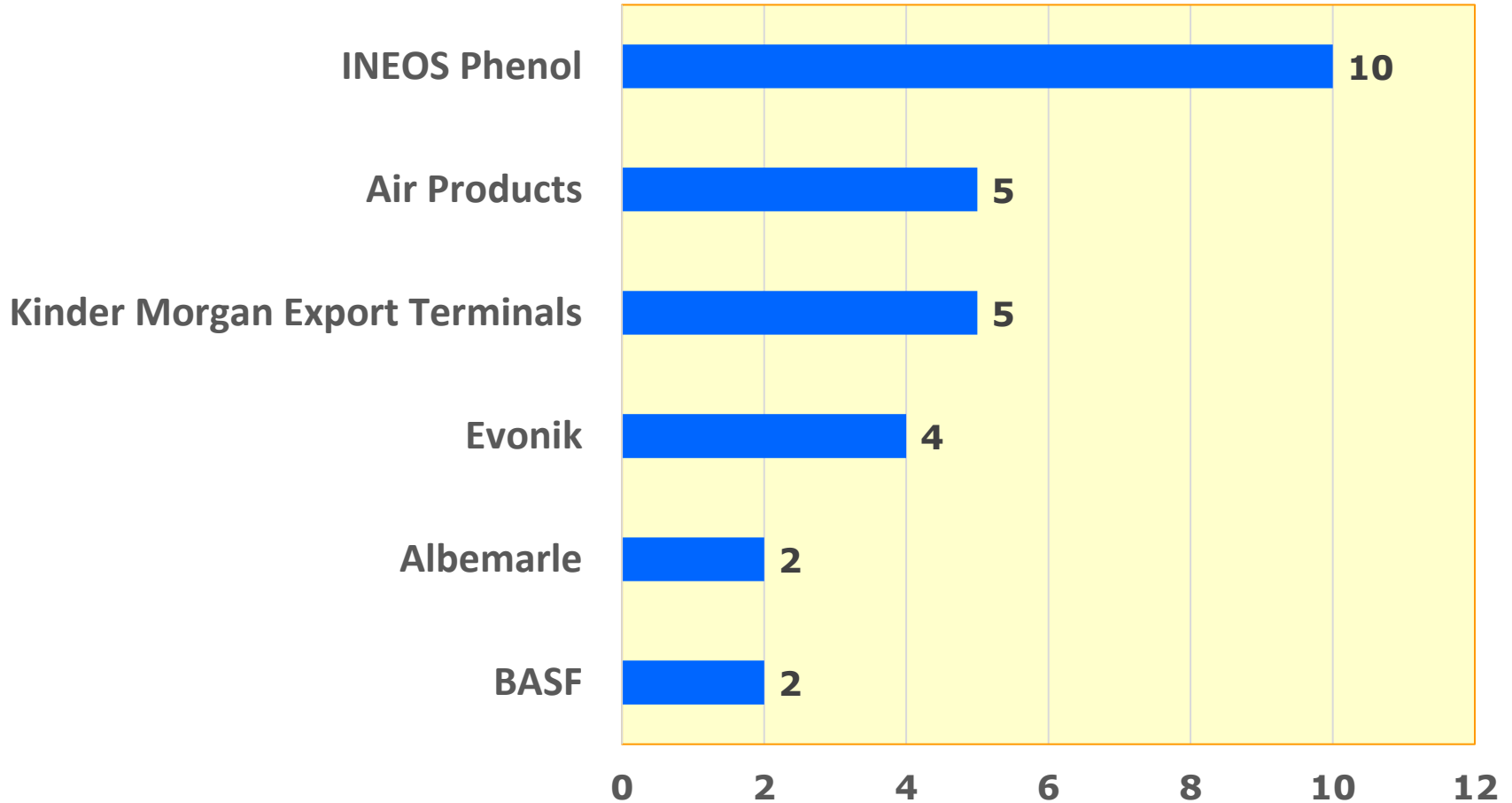
In 2021, Air Products, Ethyl, and KMET had no contractors
companies in bold had employee recordables

1. **Afton Chemical**
2. Albemarle
3. BASF
4. **Chevron Pasadena Refining**
5. **Chevron Phillips Chemical**
6. Enterprise Products
7. Evonik
8. INEOS Phenol
9. Intercontinental Terminals
10. **KM Liquids Terminals**
11. **OxyVinyls Pasadena PVC**
12. **Sekisui**

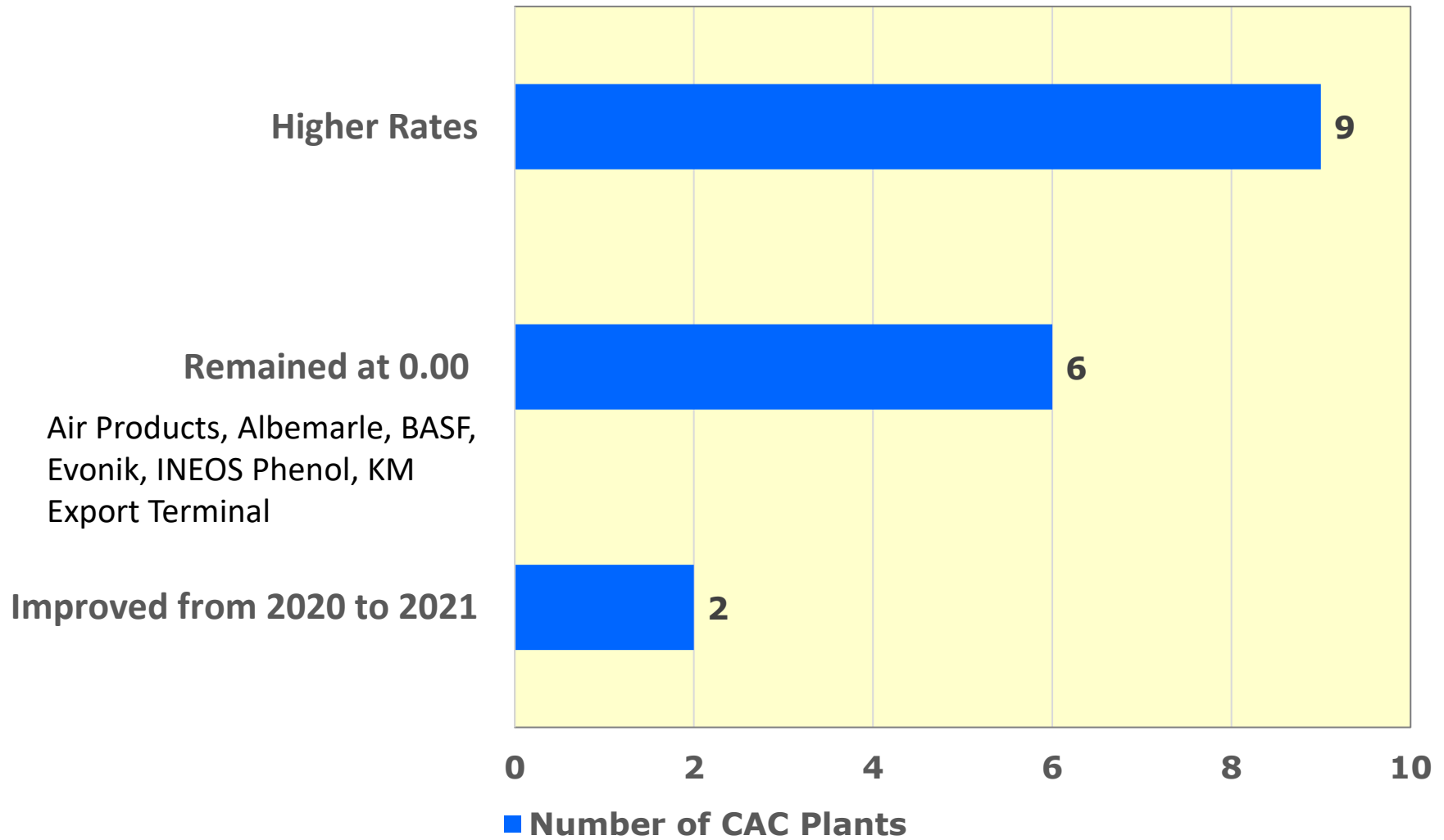


Zeroes are Heroes!

Years in a row that CAC plant had a 0.00 Recordable Rate



Comparison to Prior Years



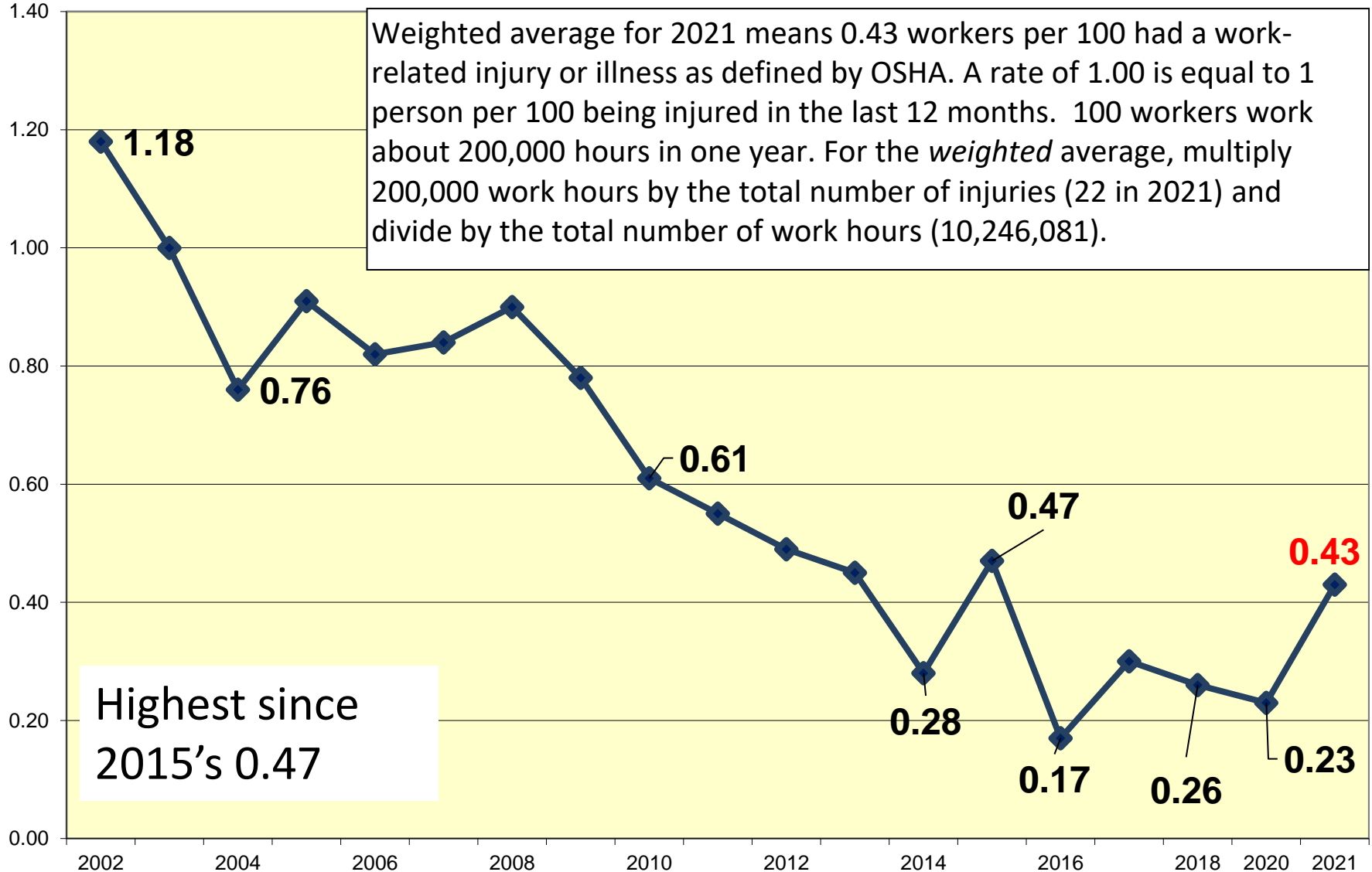
OSHA Voluntary Protection Program (VPP)

- 2 VPP plants:
 - OxyVinyls Pasadena PVC (1991)
 - Chevron Phillips Chemical (2015)
- Intercontinental Terminals working toward VPP and Challenge

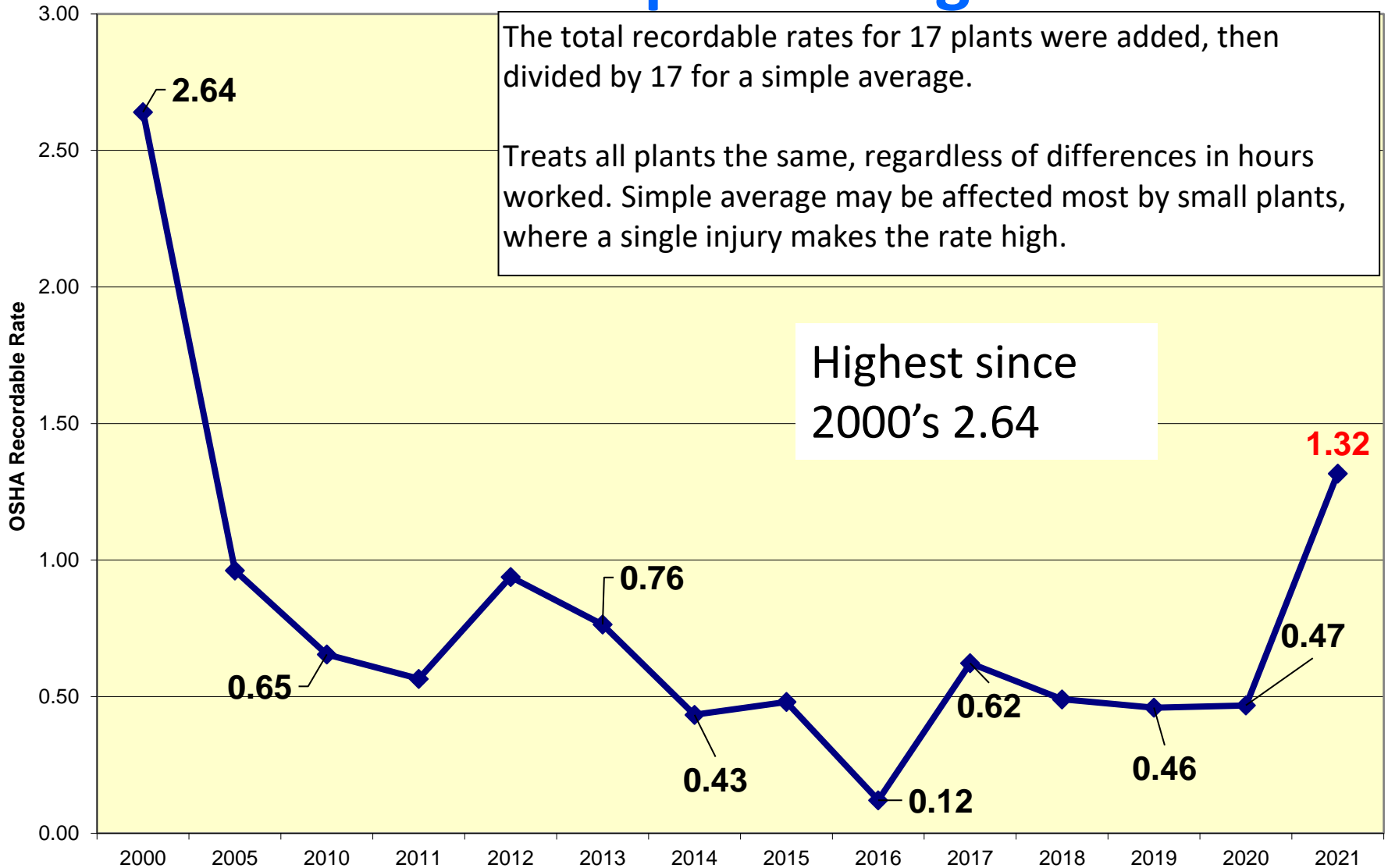
STATISTICS

averages, median, range

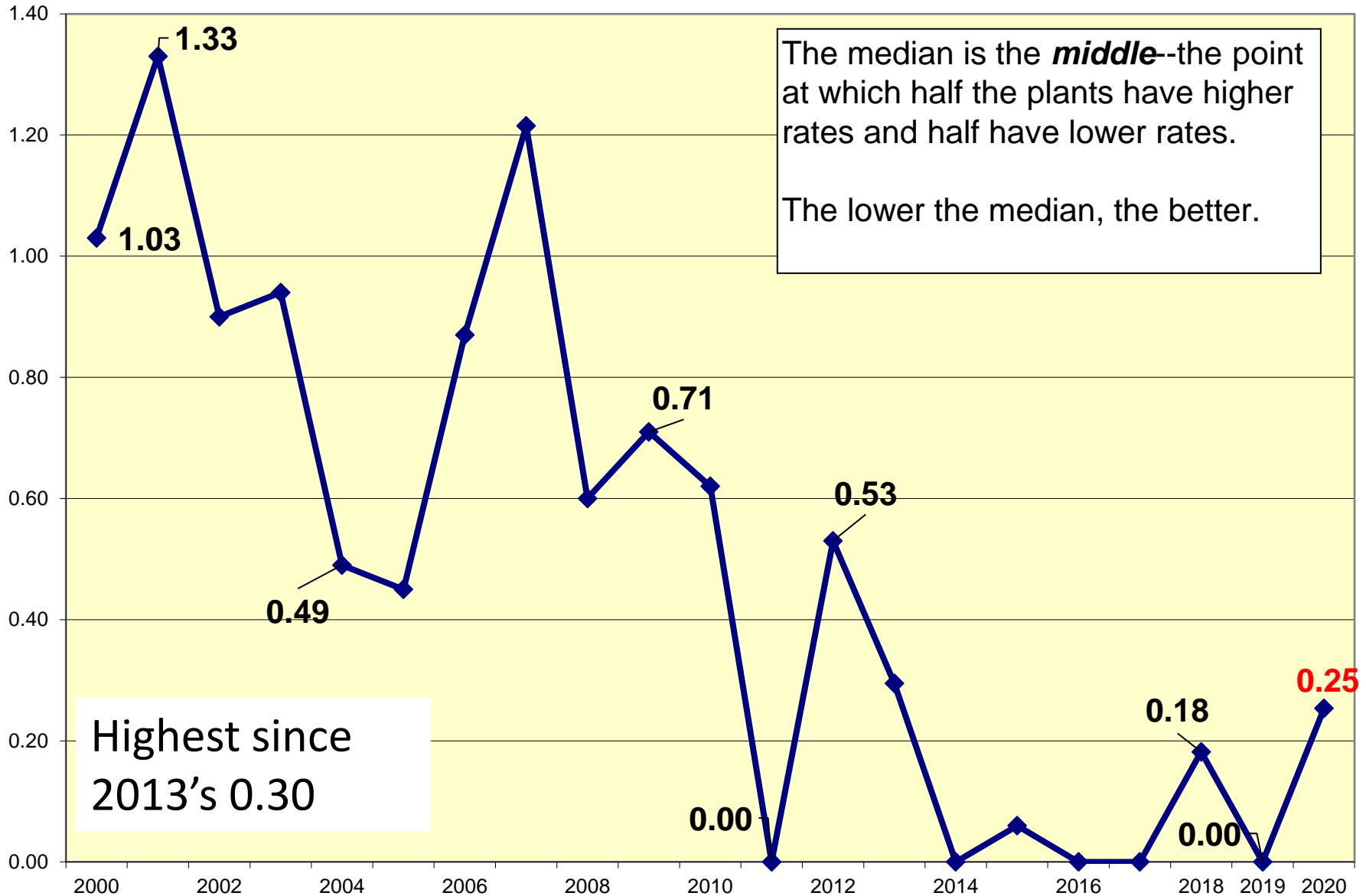
Trend in Weighted Averages 2021



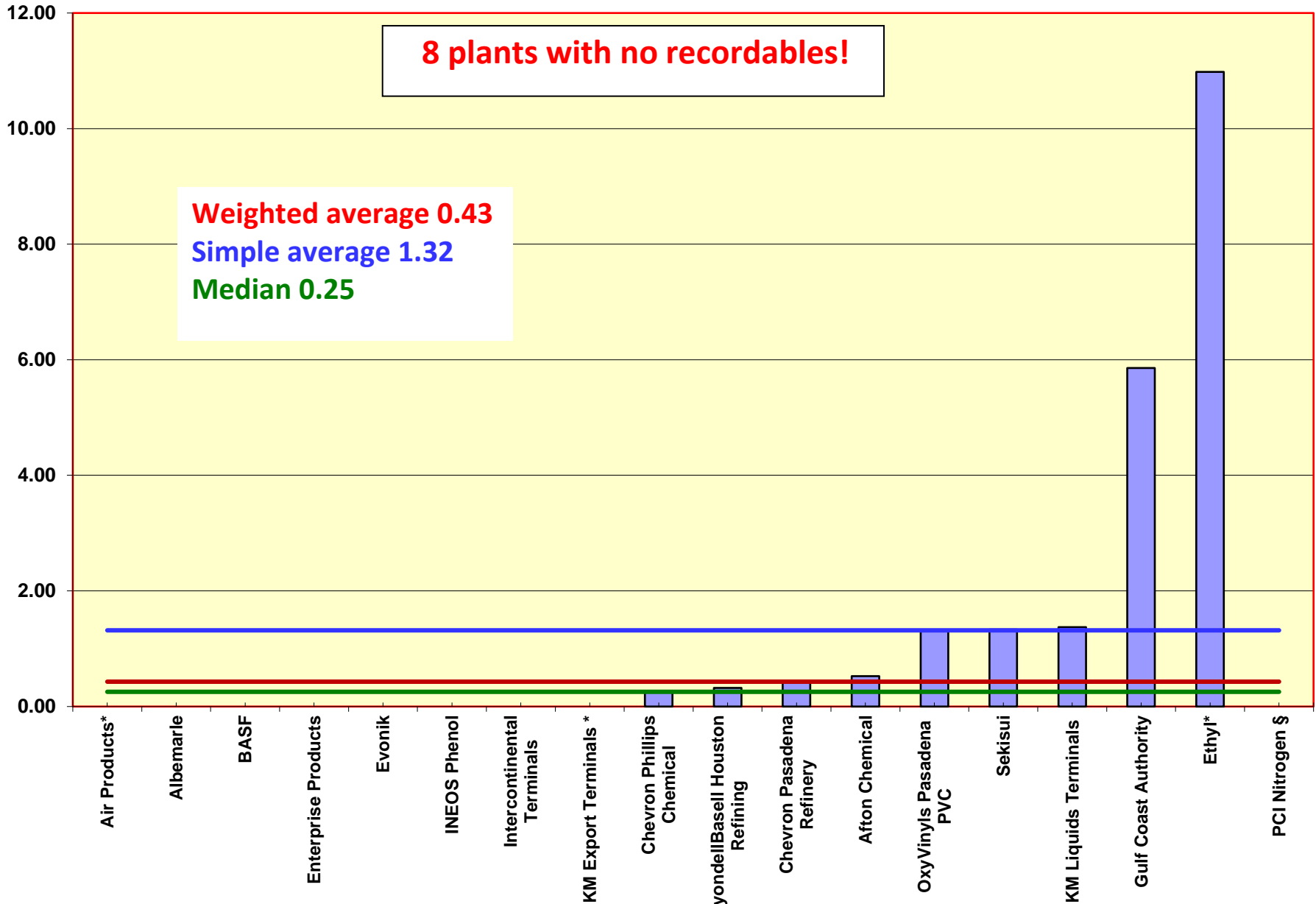
Trend in Simple Average 2021



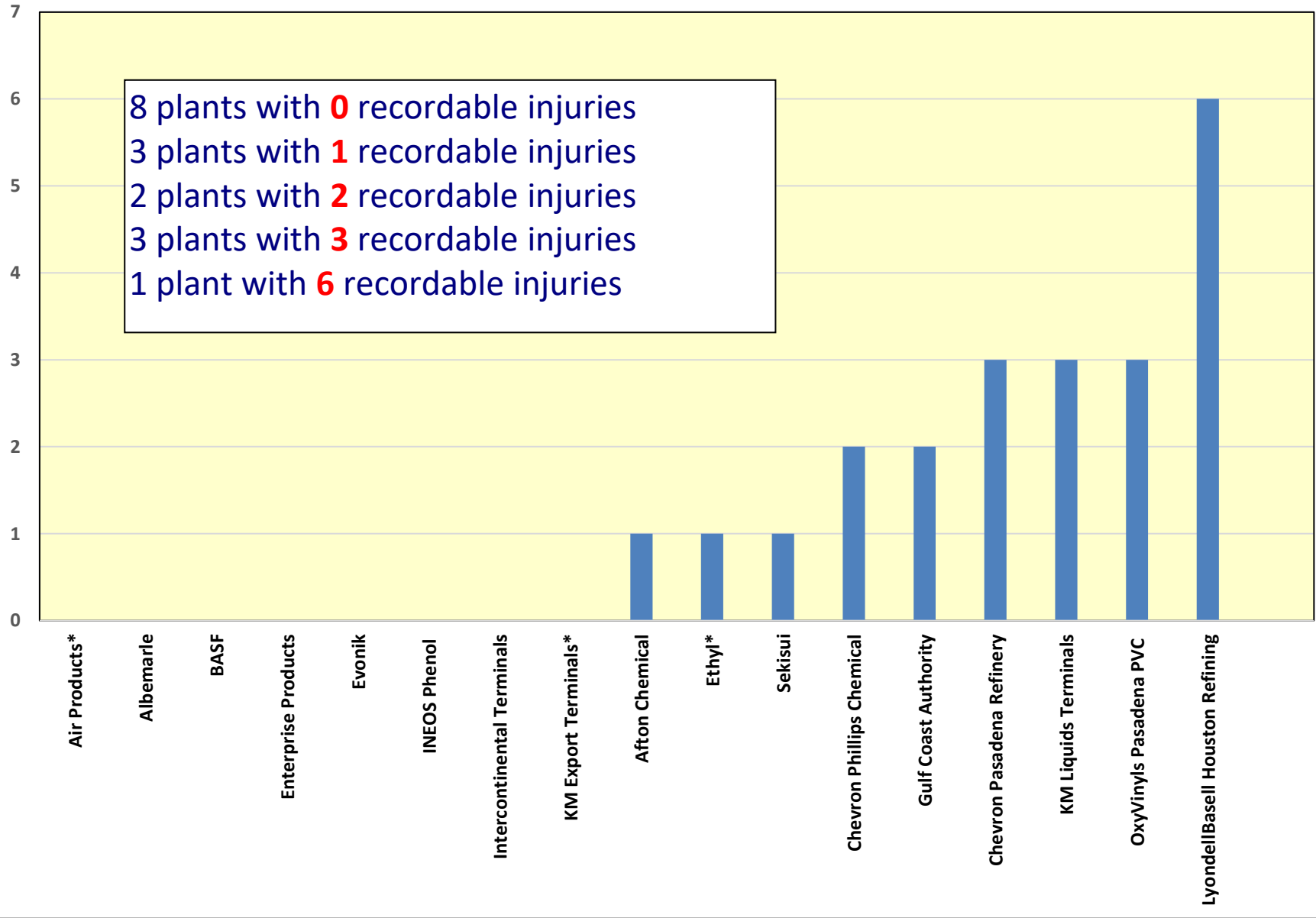
Trend in Median 2000-2021



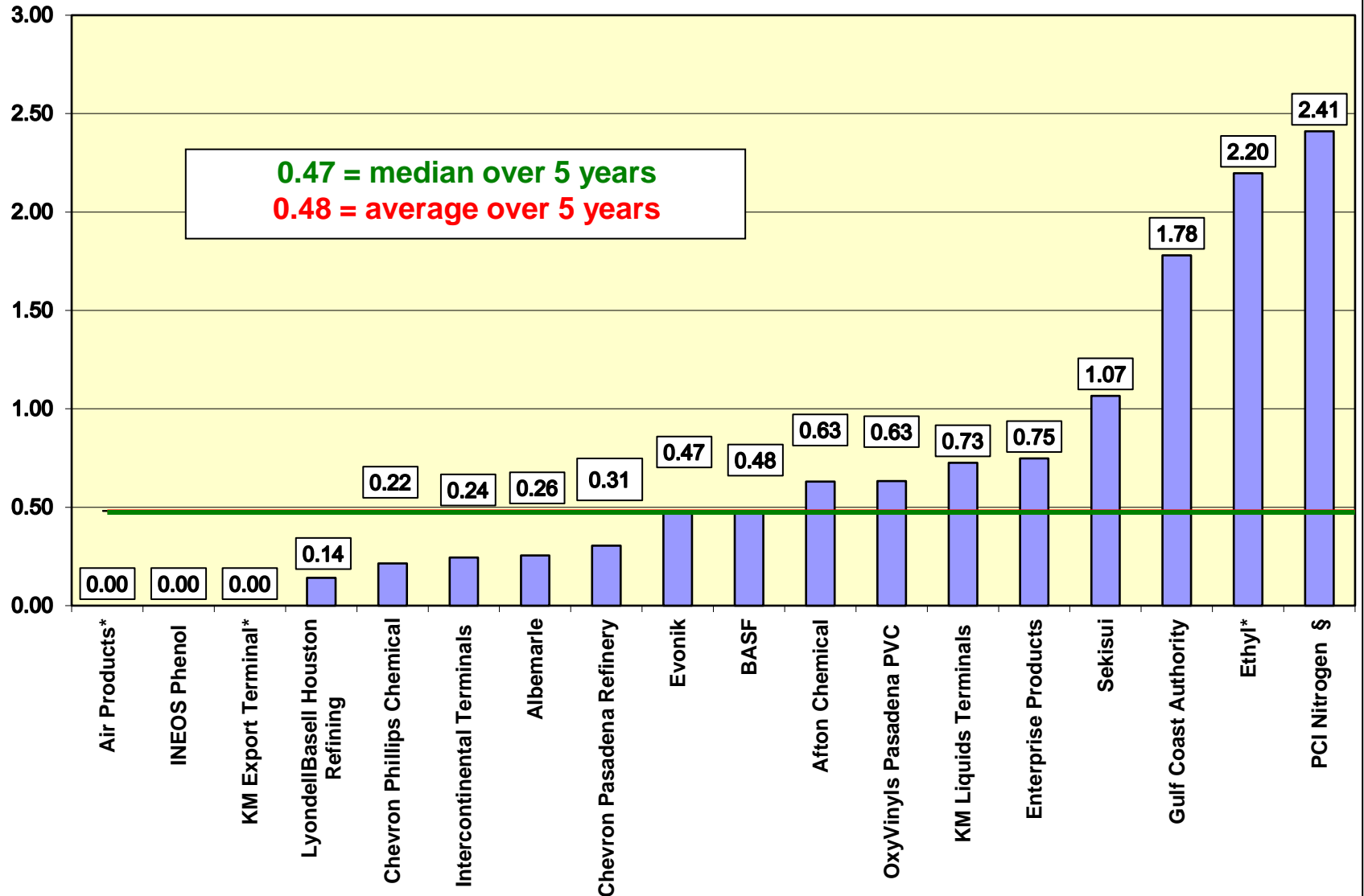
Plant Rankings 2021 Based on *Recordable Rates*



Plant Rankings by *Number* of Recordables- 2021



5-Year Plant Ranking by Average Recordable *Rates* 2017-2021 for plants in PCAC for 5 or more years



SEVERITY

fatalities, lost-time, restricted duty,
others

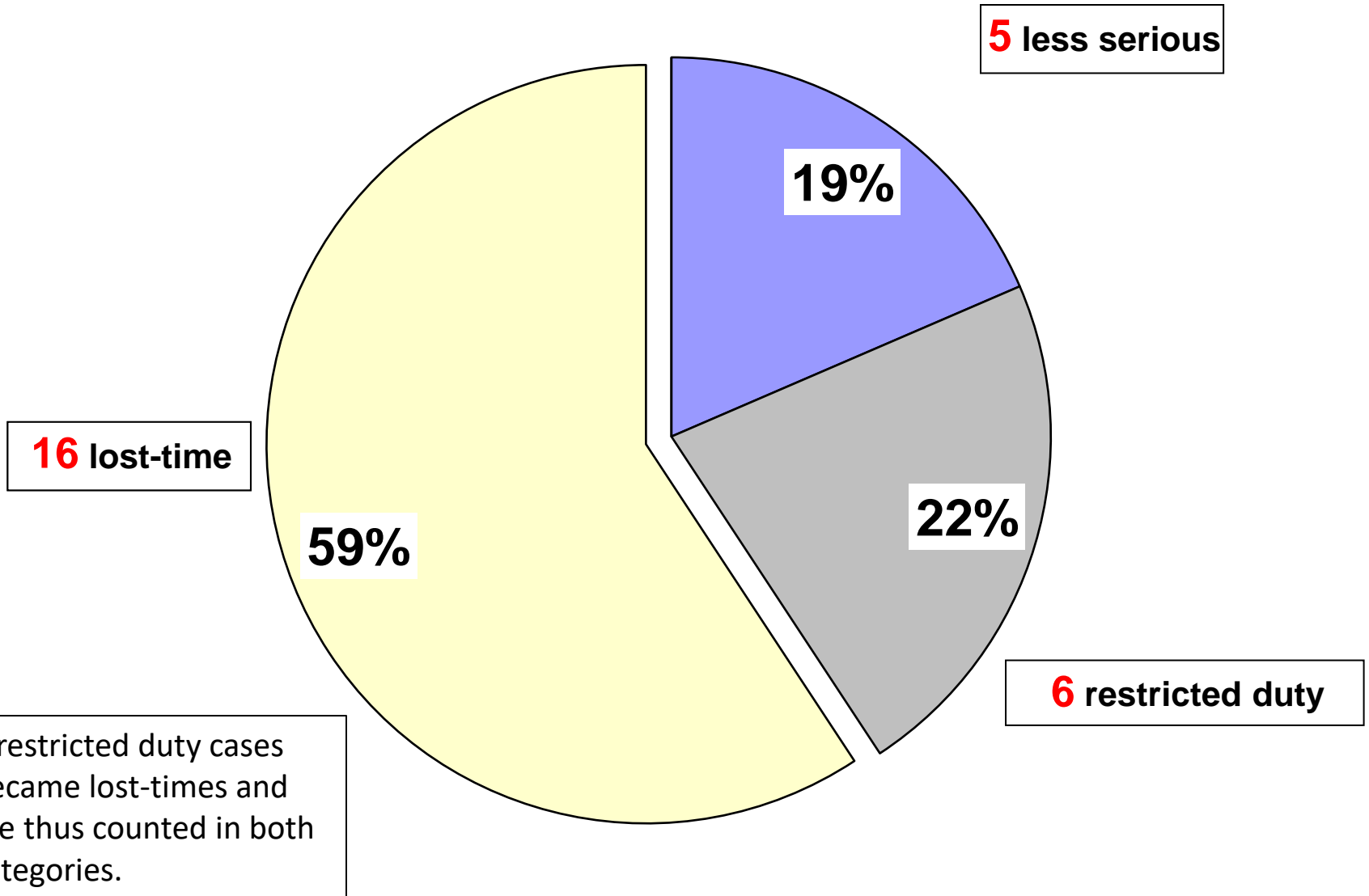
Severity varies

- ❑ **0 fatalities in PCAC plants in 2021** (1 in 2020)
- ❑ **Lost time** (unable to come to work)
 - ❖ Such as workplace exposure to COVID-19
- ❑ **Restricted duty** (at work but unable to do usual job)
 - ❖ Such as lacerations to hand
- ❑ **Others with doctor's intervention**

*1 fewer restricted duty cases than in 2020– 6 vs 7
10 more lost-time cases than in 2020– 16 vs 6*

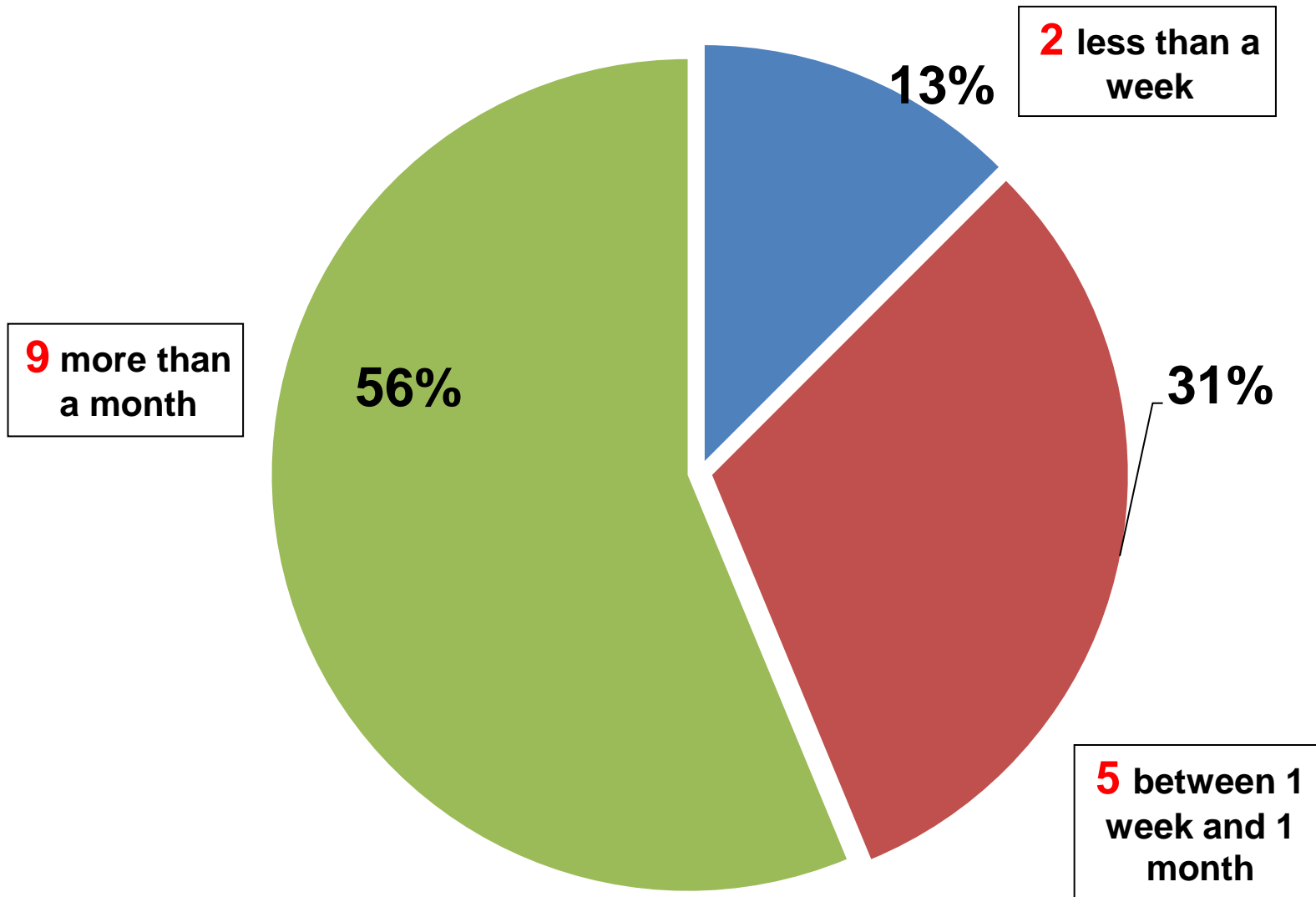
77% (17 of 22 total) were either lost time or restricted duty

Severity of Injury or Illness in 2021



Severity of the 16 Lost-Time Cases in 2021

based on number of days away from work



INJURY CAUSES AND TYPES

most common, causes, types,
chemical exposure

Most common recordables in 2021

Slips, Trips, Falls, or Walking into something resulted in:

- ❑ Ankle fracture
- ❑ Hand injury

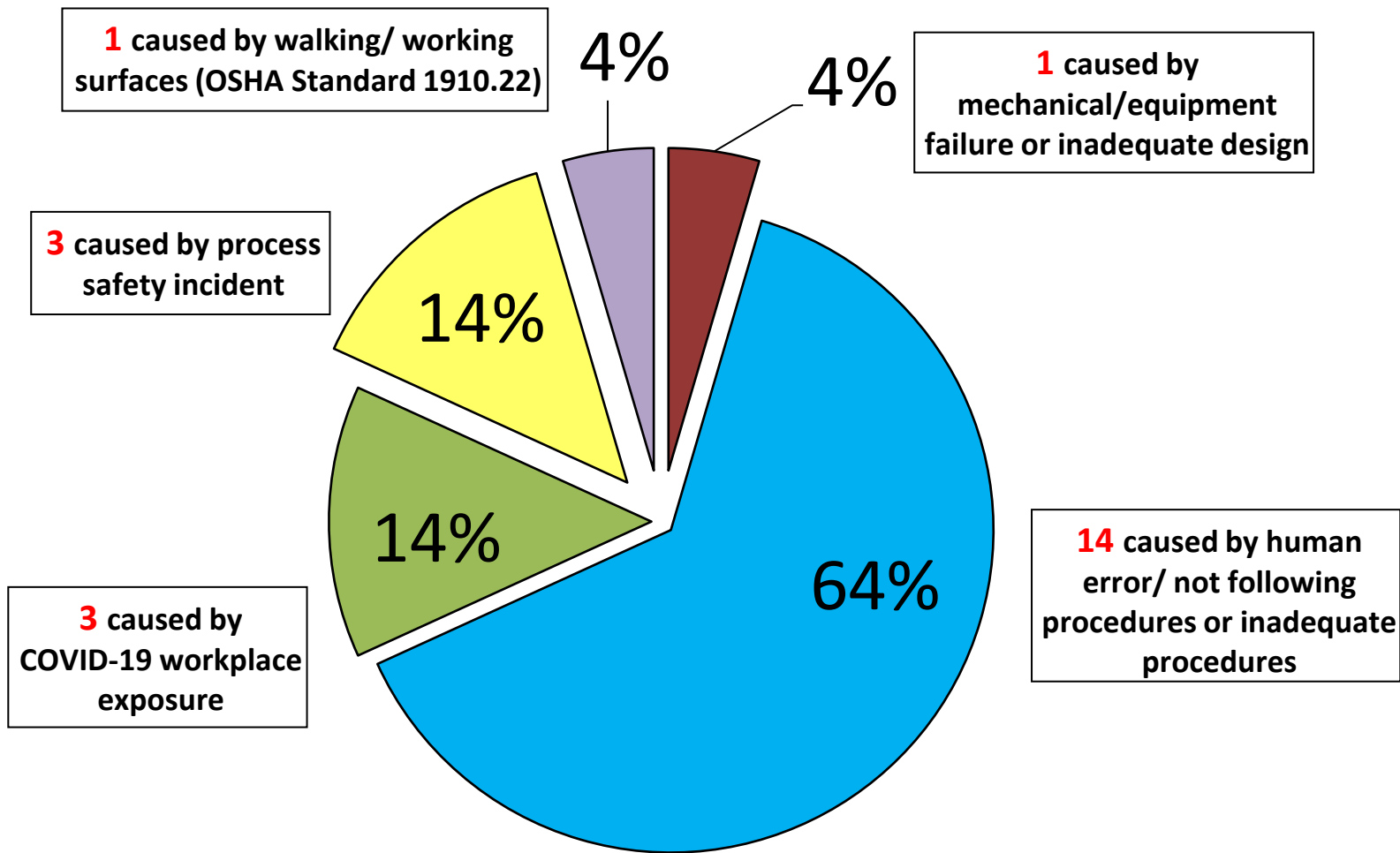
Machine crushing or entanglement or being pinched resulted in:

- ❑ Thumb fracture
- ❑ Hand Laceration

Overexertion, Musculoskeletal Strains, Dehydration, Heat Exhaustion resulted in:

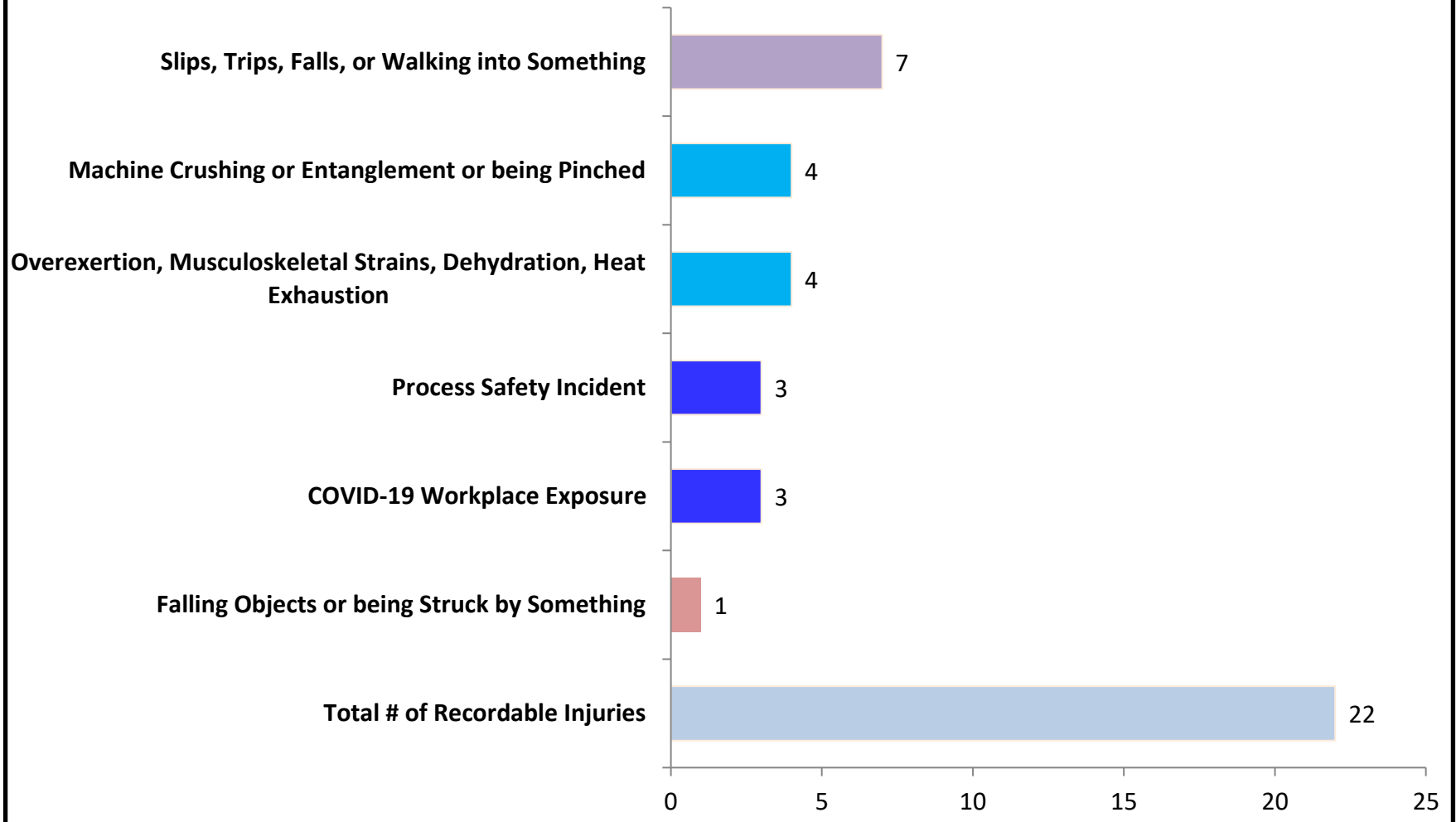
- ❑ Back tightness/strain
- ❑ Arm/shoulder injury while lifting objects

Cause of the 22 Recordable Injuries in 2021

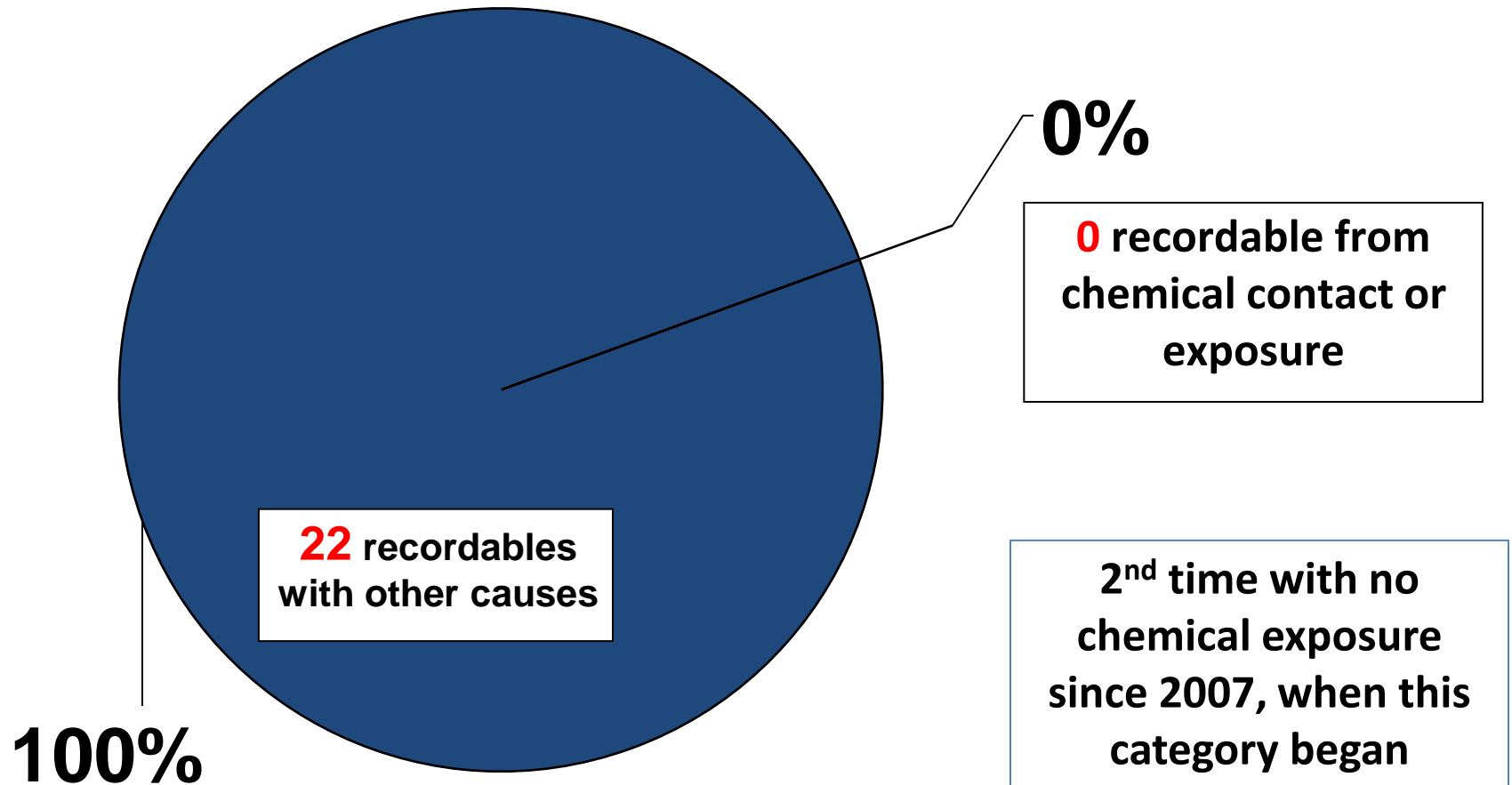


2021 Recordable Injuries in *PCAC* Plants

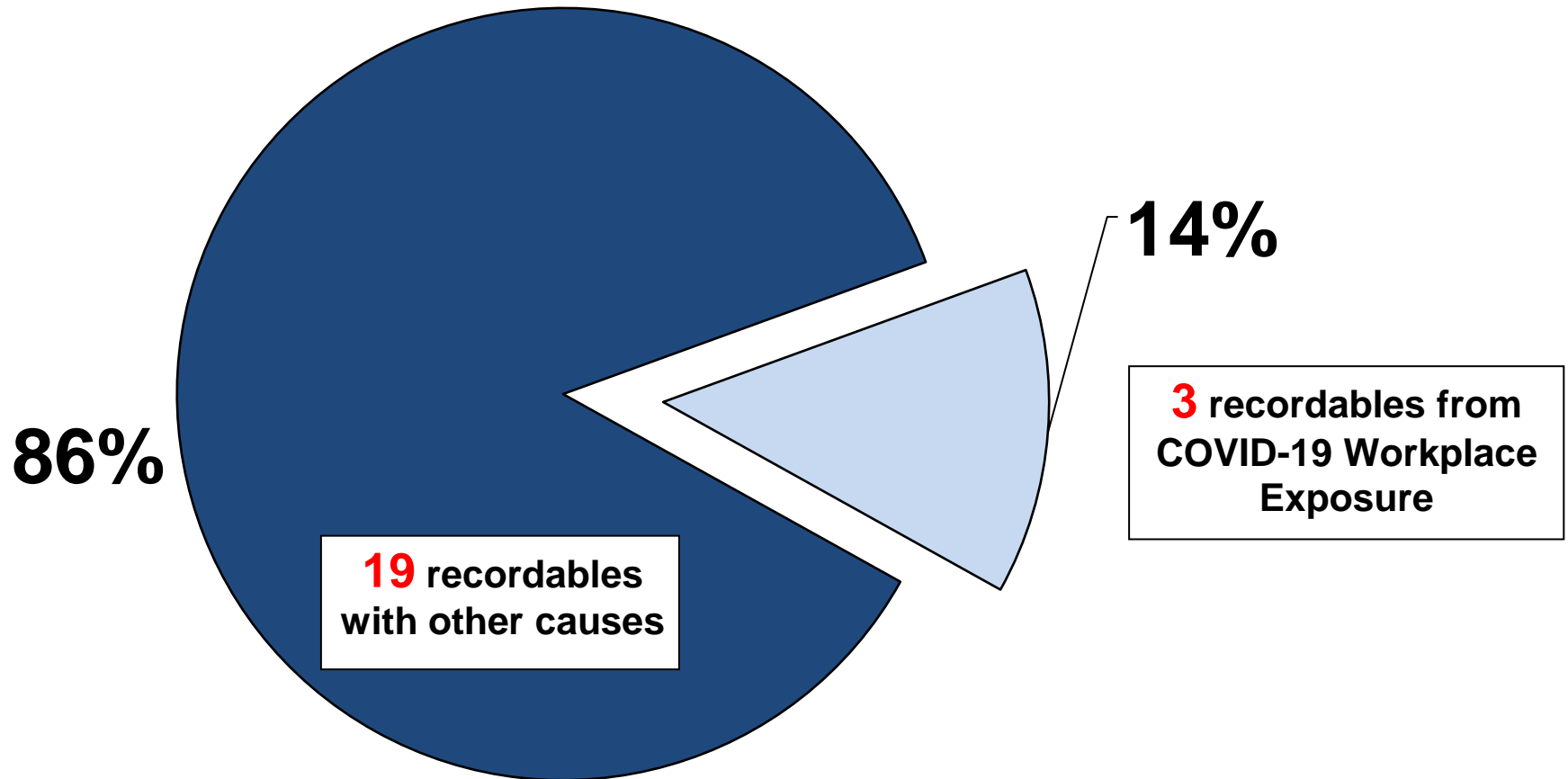
Resulted from



Recordables from Chemical Contact or Exposure in 2021



Recordables from COVID-19 Workplace Exposure in 2021



COVID-19 Workplace Exposure

Chevron Pasadena Refinery (1)

Ethyl (1)

Sekisui (1)

COMPARISONS

- ❖ employees versus contractors
- ❖ to similar manufacturing, chemical manufacturing, other kinds of workplace
- ❖ to other CACs
- ❖ participation in OSHA VPP

Employees -- 2021 -- Contractors

5.4 million work hours

8 of 17 plants with 0.00s

0.70 weighted avg.

0.48 median (middle)

10.98 highest rate (1 injury)

4.8 million work hours

12 of 14 plants with 0.00s*

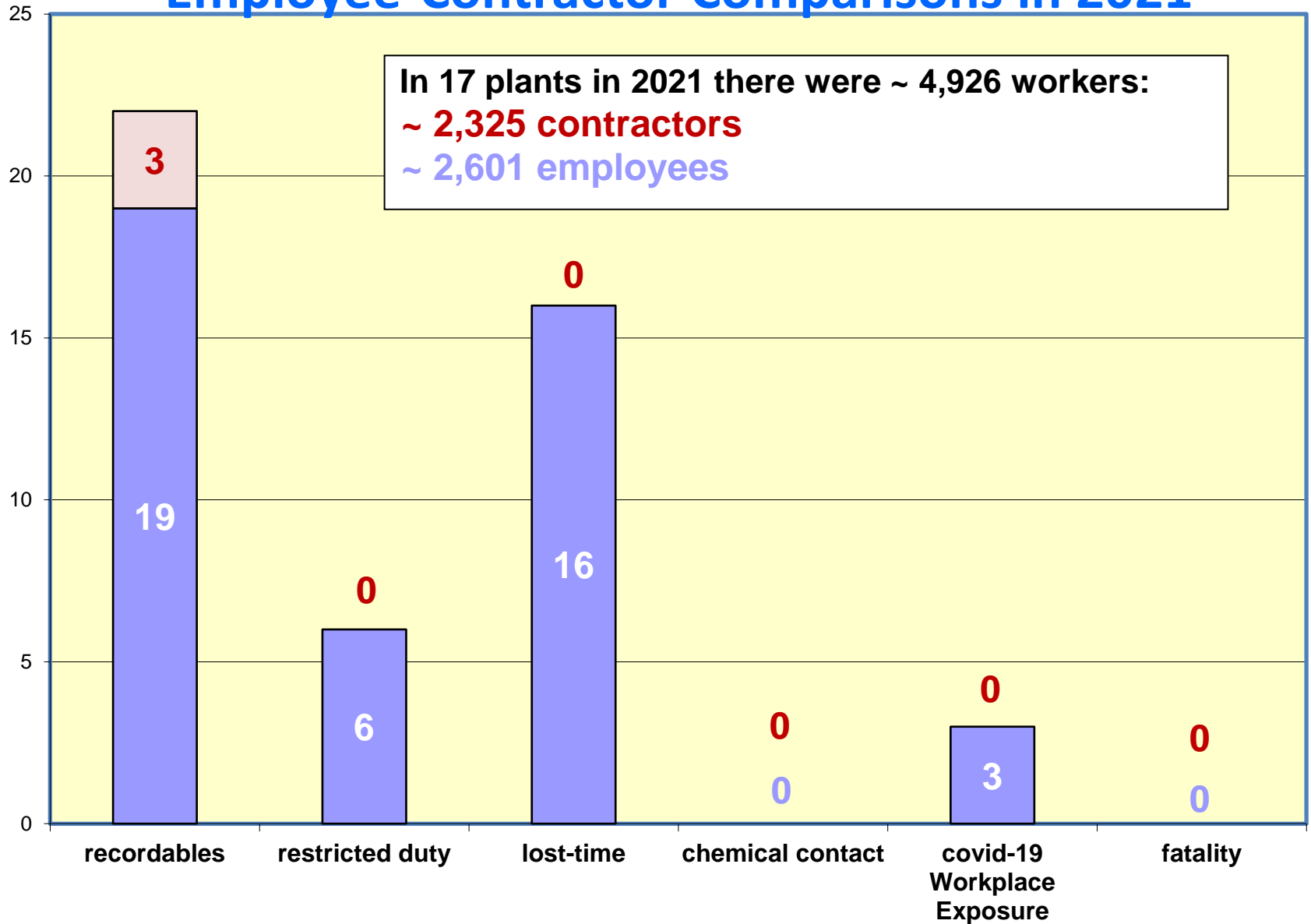
0.12 weighted avg.

0.00 median (middle)

21.42 highest rate (1 injury)

*Air Products, Ethyl, and KM Export Terminal did not report contractor hours

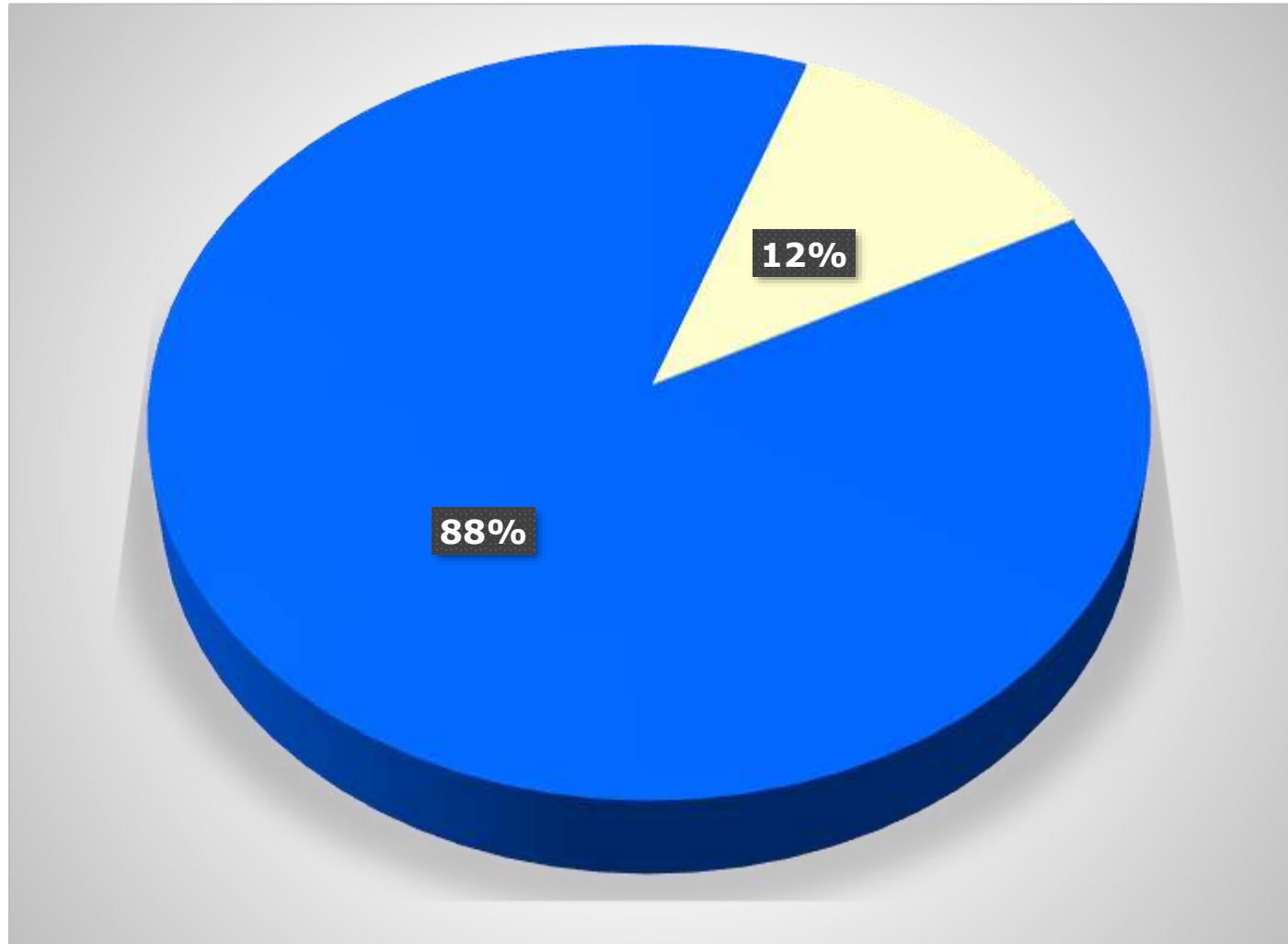
Employee-Contractor Comparisons in 2021



Some cases begin as restricted duty but become lost-time. Plants thus may show one injury in both categories.

National Industry Comparisons

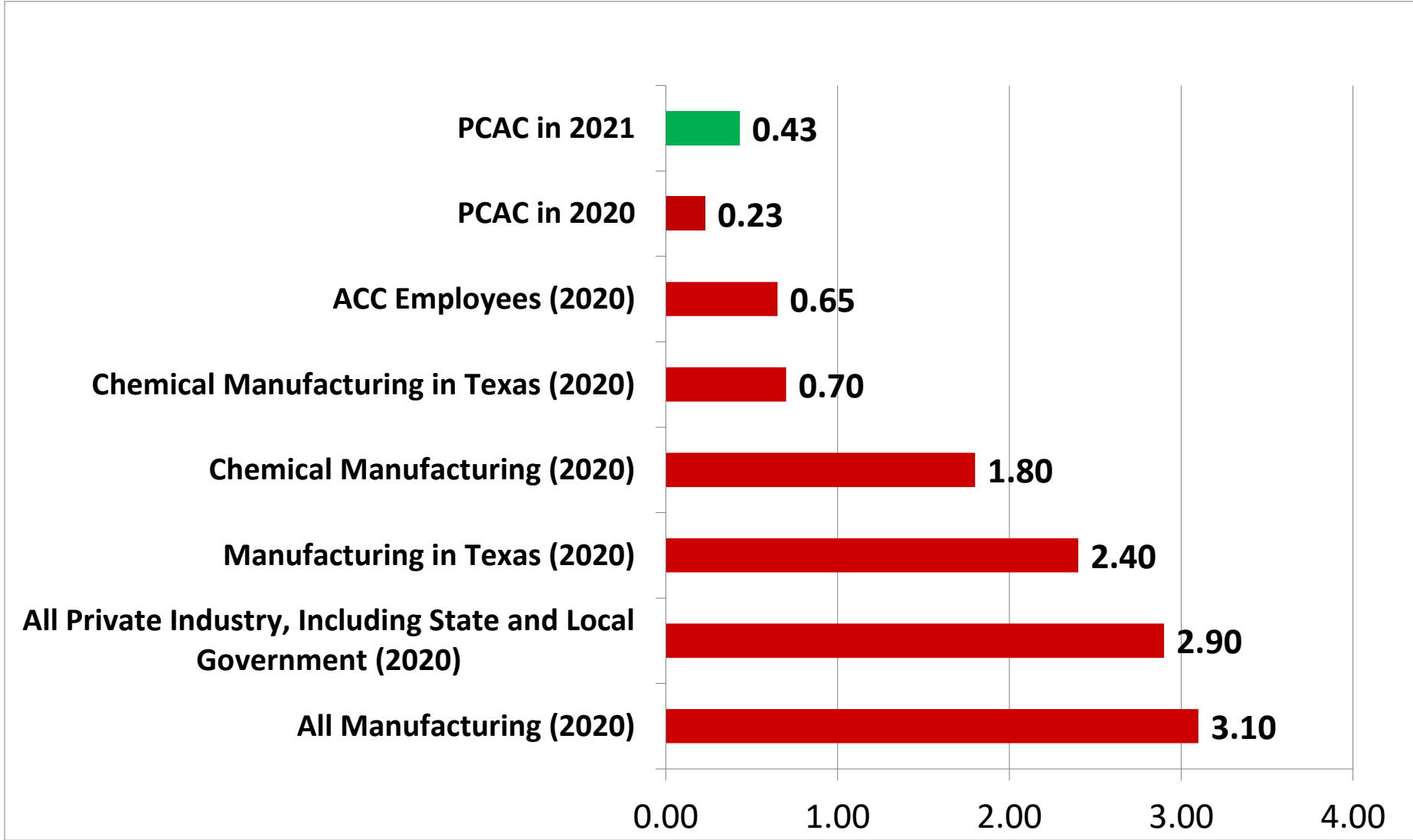
15 of 17
CAC Plants
(88%) had
recordable
rates
better
than
companies
nationwide
in their
NAICS
Code



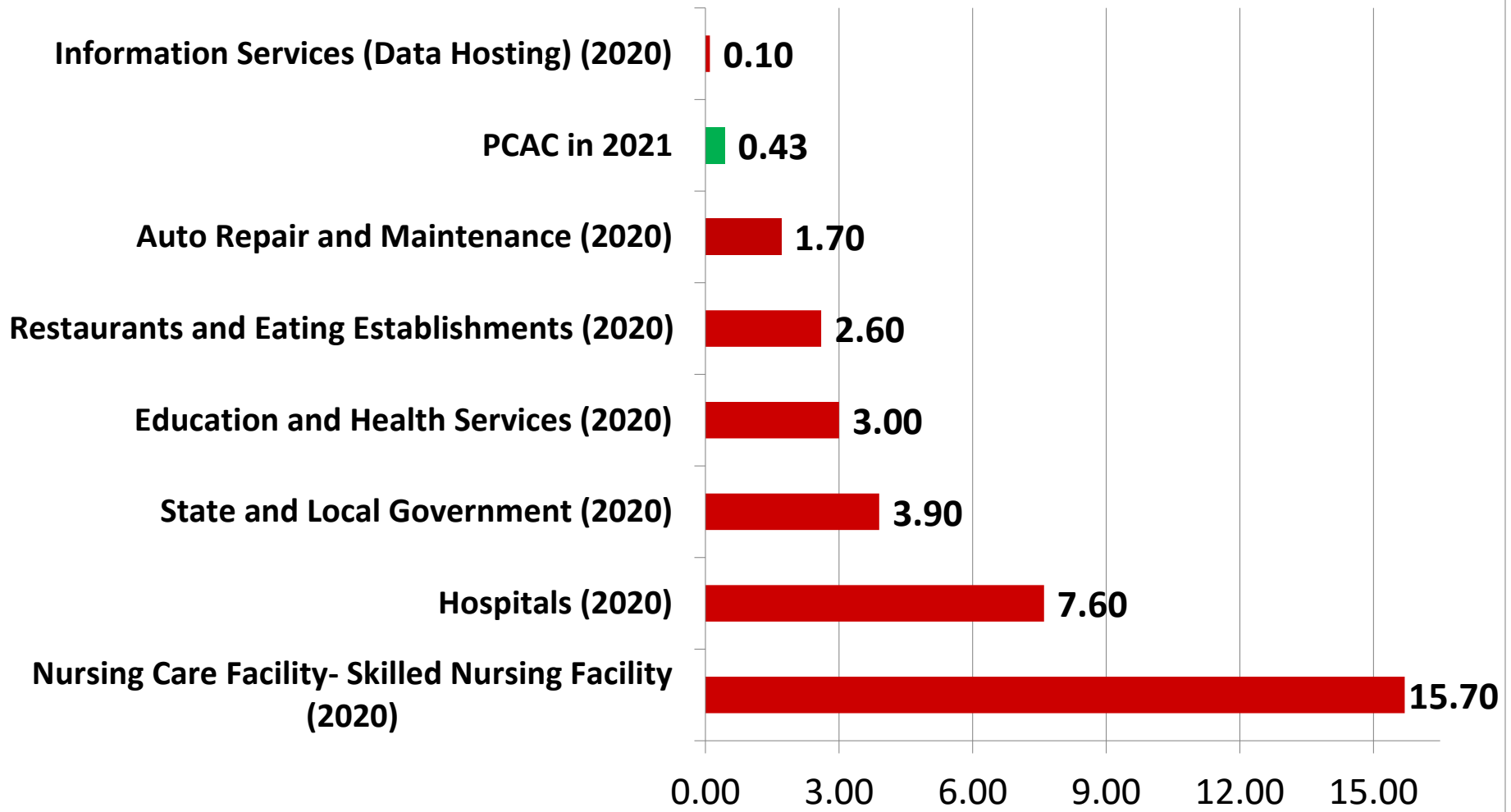
Comparing CAC Plants to Similar Kinds of Industry

2020 NATIONAL DATA	NAICS CODE	INDUSTRY GROUP	2021 Total Plant Recordable Rate	2020 NAICS group rate
Gulf Coast Authority	221320	Sewage Treatment Facilities	5.86	2.00
Chevron Pasadena Refinery	324110	Petroleum Refineries	0.45	0.50
LyondellBasell Houston Refining	324110	Petroleum Refineries	0.32	
INEOS Phenol	325110	Petrochemical Manufacturing	0.00	1.40
Air Products*	325120	Industrial Gas Manufacturing	0.00	1.40
Afton Chemical	325199	All Other Basic Organic Chemicals	0.52	2.10
Albemarle	325199	Industrial Organic Chemicals	0.00	
BASF	325199	All Other Basic Organic Chemical Manufacturing	0.00	
Ethyl*	325199	All Other Basic Organic Chemicals	10.98	
Evonik	325199	All Other Basic Organic Chemicals	0.00	
Chevron Phillips Chemical	325211	Plastics Material and Resin Manufacturing	0.25	1.40
OxyVinyls Pasadena PVC	325211	Plastics Material and Resin Manufacturing	1.30	
Sekisui	325211	Plastics Material and Resin Manufacturing	1.33	
PCI Nitrogen §	325312	Fertilizer Manufacturing	-----	1.90
Enterprise Products	424710	Petroleum Bulk and Terminals	0.00	1.90
Intercontinental Terminals	49319	Bulk Liquid Storage Facility	0.00	1.90
KM Export Terminal *	493190	Other Warehousing and Storage	0.00	
KM Liquids Terminal	493190	Other Warehousing and Storage	1.37	

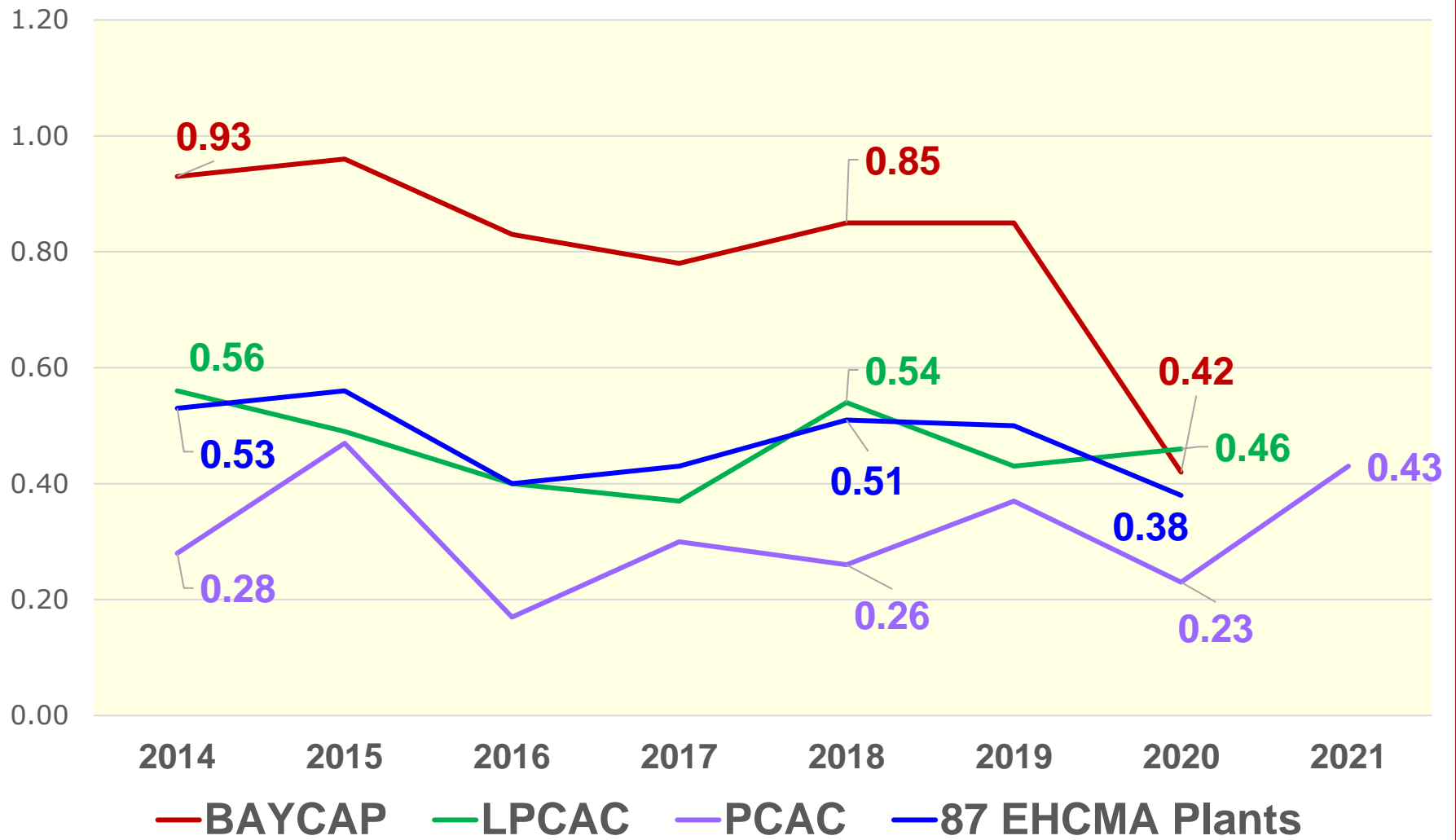
Comparisons on Weighted Recordable Rates



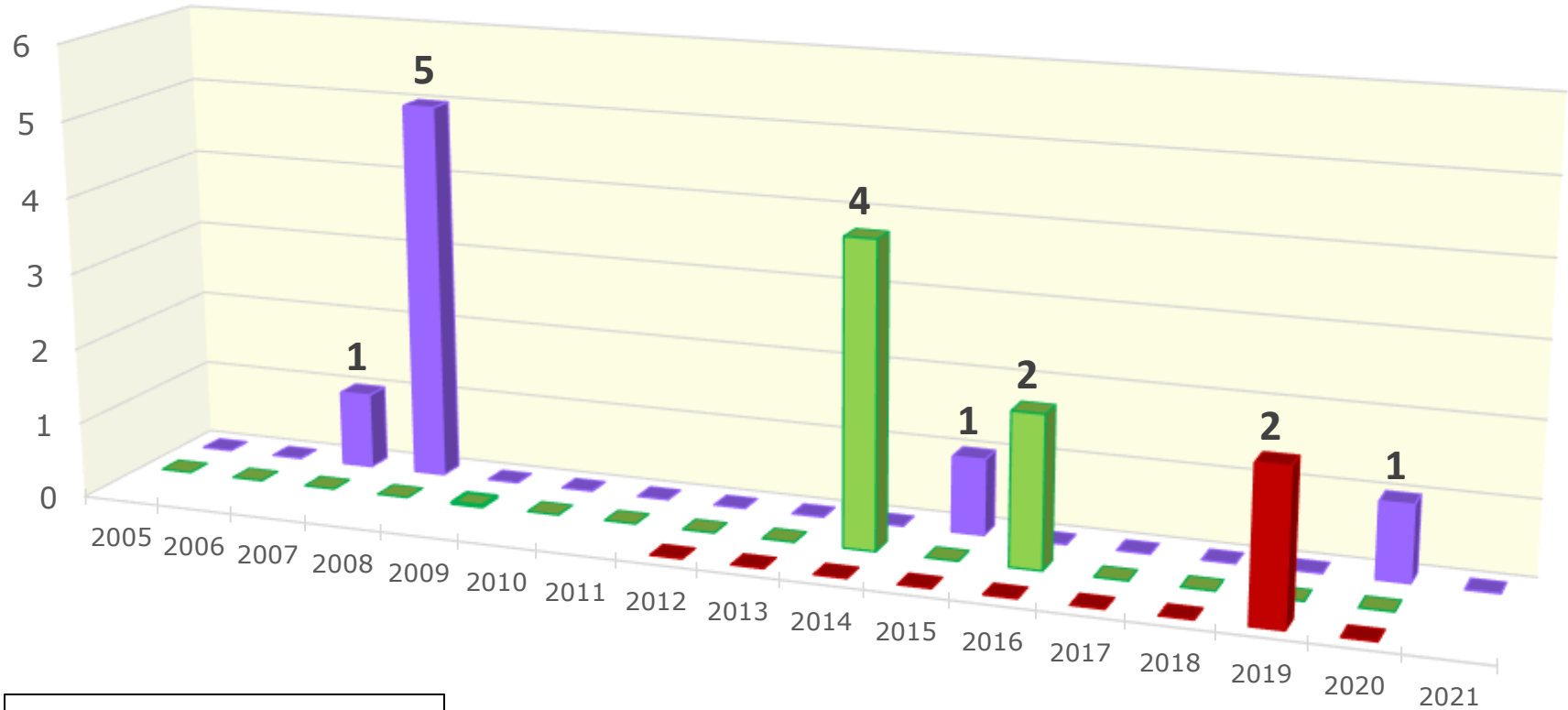
Comparisons on Weighted Recordable Rates



CAC Weighted Average Comparison 2014-2021



CAC Fatality Comparison 2005-2021



LPCAC and PCAC started asking for fatality data for 2005.

BAYCAP started its safety report in 2012

■ BAYCAP ■ LPCAC ■ PCAC

Comparisons of employees & contractors

ACC, BAYCAP, and LPCAC Data from 2020

PCAC Data from 2021

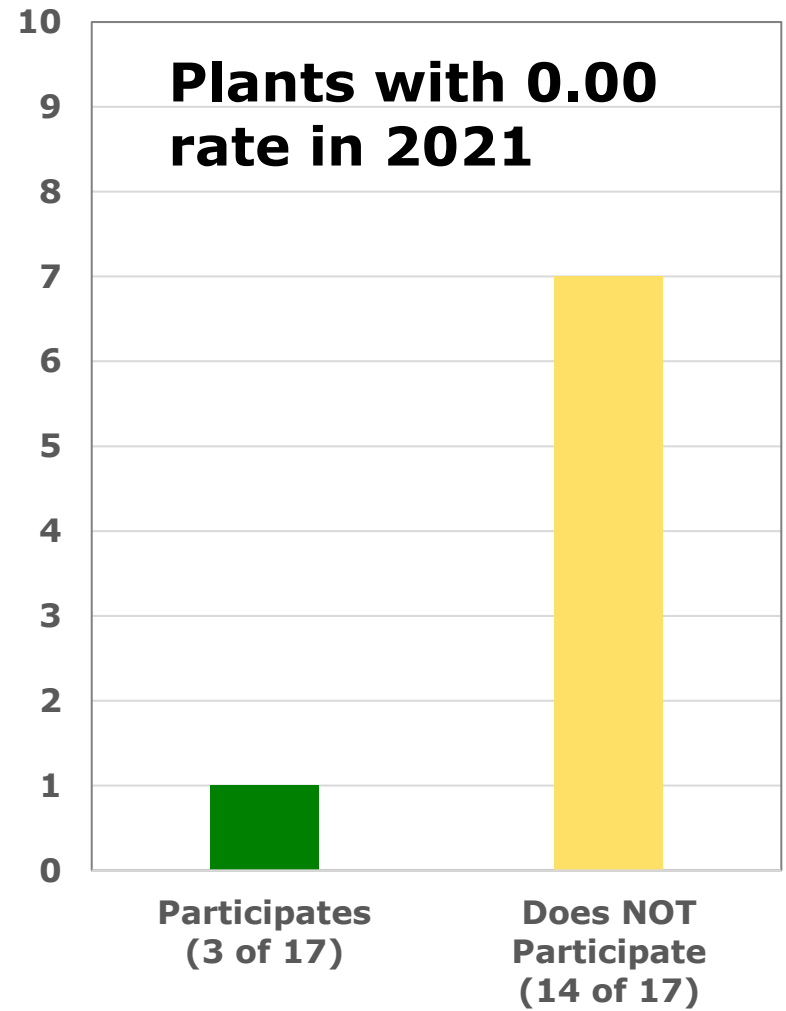
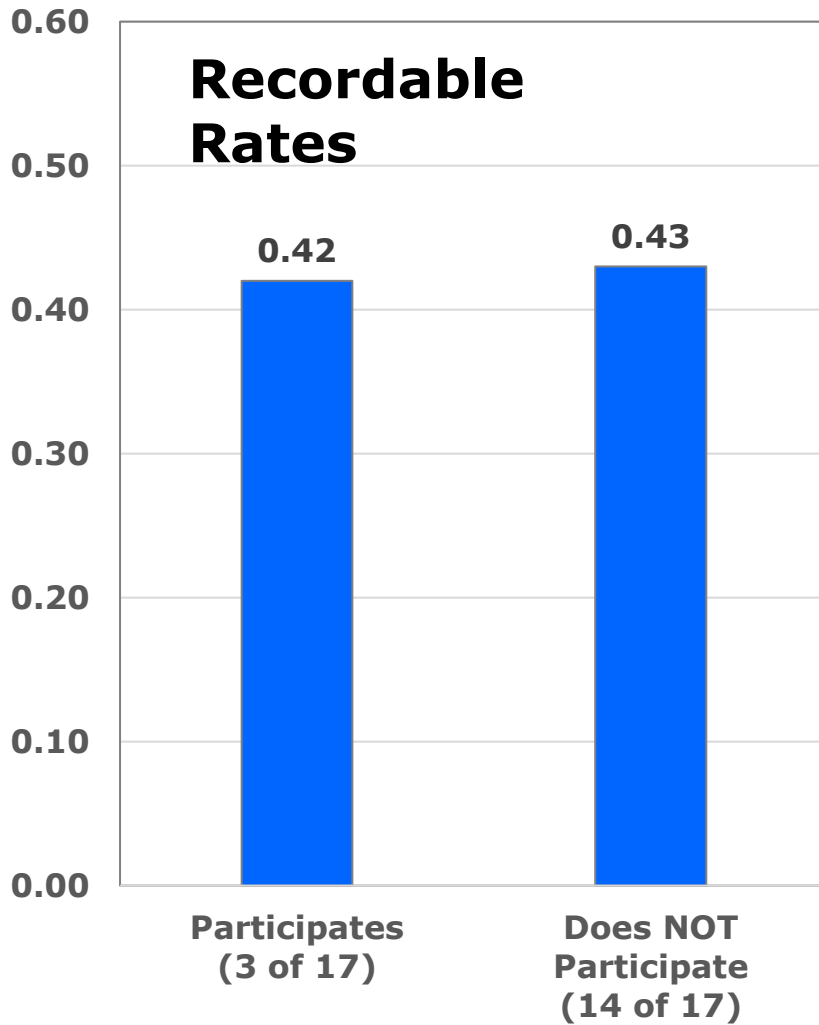
Employees

- 0.70 PCAC plant *employees*
- 0.65 American Chemistry Council (ACC) member-company *employees*
- 0.52 BAYCAP plant *employees*
- 0.51 LPCAC plant *employees*

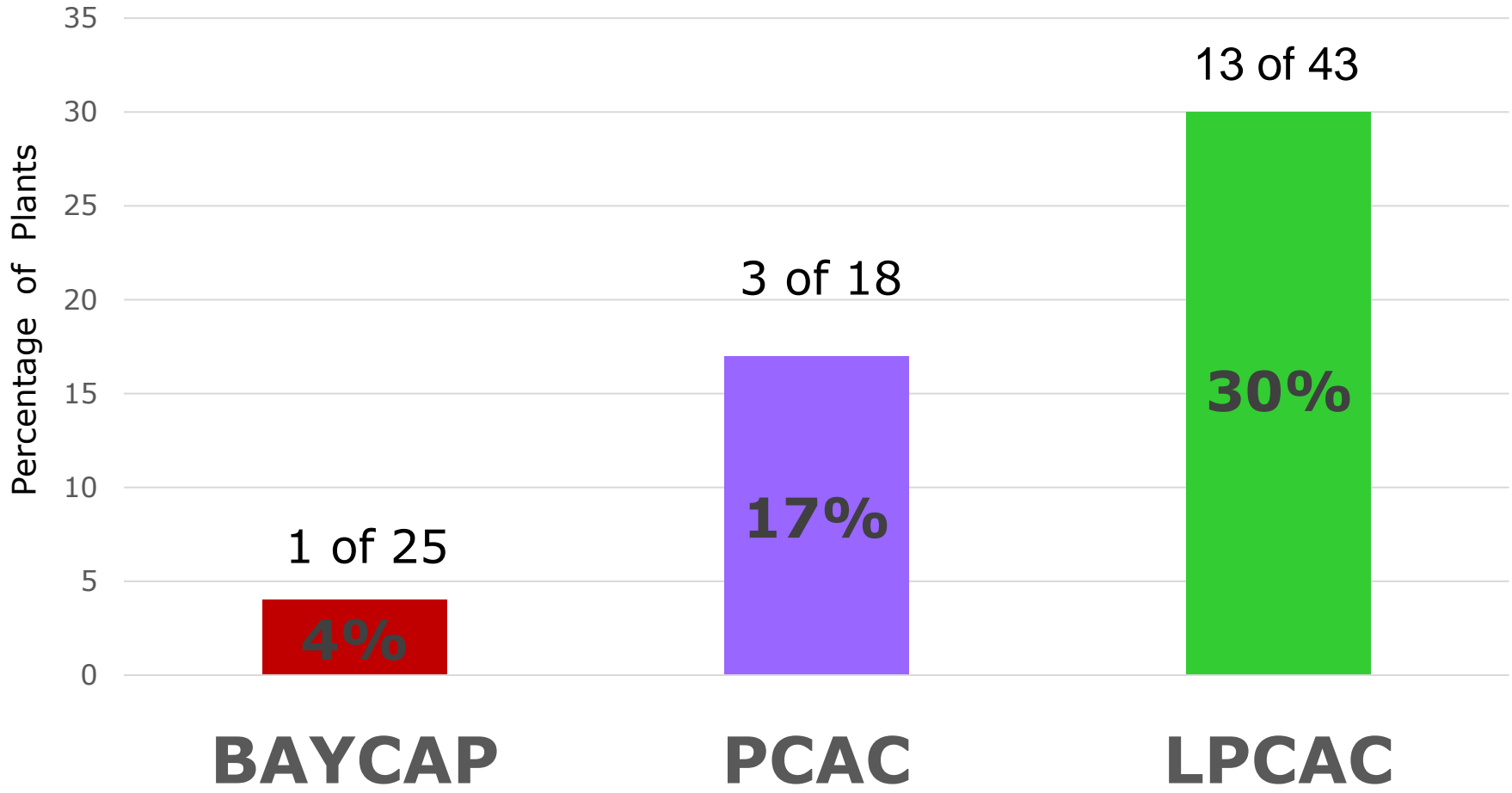
Contractors

- 0.37 LPCAC plant *contractors*
- 0.26 American Chemistry Council (ACC) member-company *contractors*
- 0.18 BAYCAP plant *contractors*
- 0.12 PCAC plant *contractors*

OSHA VPP

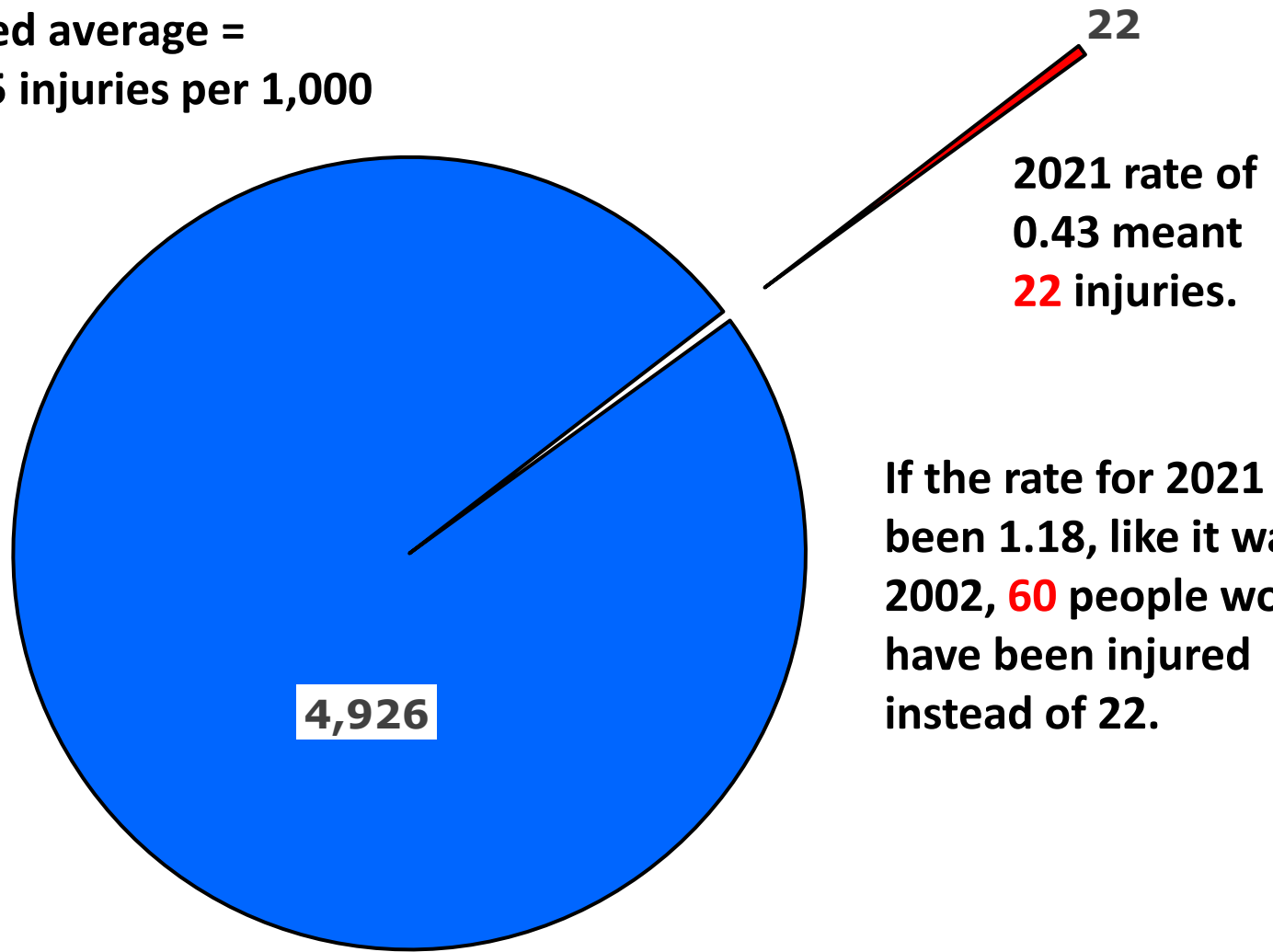


Comparisons of OSHA VPP Participation



Safety Report Is about **People**

0.43 weighted average =
fewer than 5 injuries per 1,000



2021 rate of
0.43 meant
22 injuries.

If the rate for 2021 had
been 1.18, like it was in
2002, **60** people would
have been injured
instead of 22.

■ All CAC Workers ■ Injured Workers

Questions?

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- dbsfacilitator@gmail.com