Summary: Analysis on LEL Events

Risk Category

All

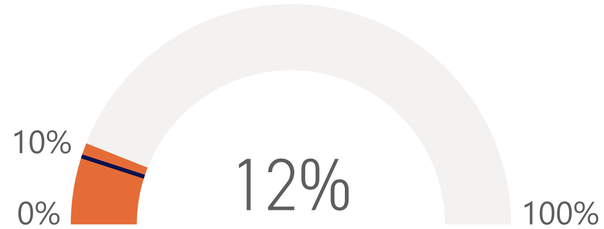
Total Events Observed

Feb 2024 to Sep 2024

218

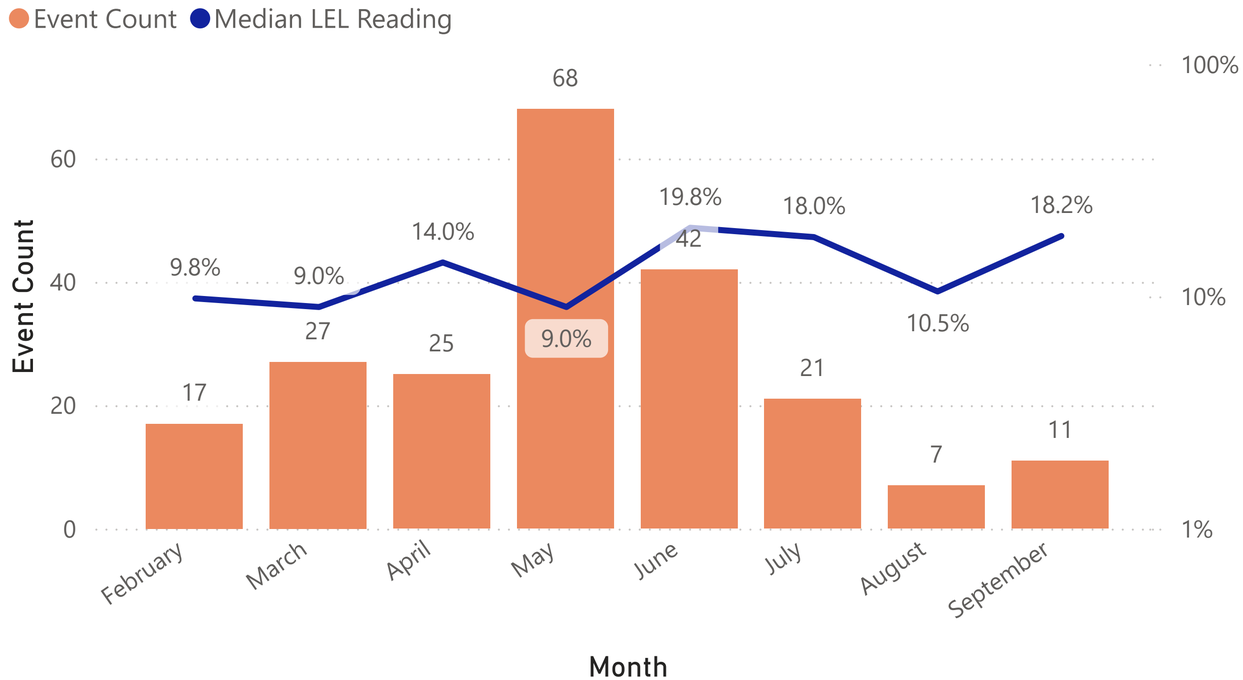
Median LEL Reading

≤ 10% is the required LEL in confined spaces.



Monthly Events and Typical LEL Exposure Levels (%)

May had the highest event count, but June had the highest observed median LEL, showing elevated risk.



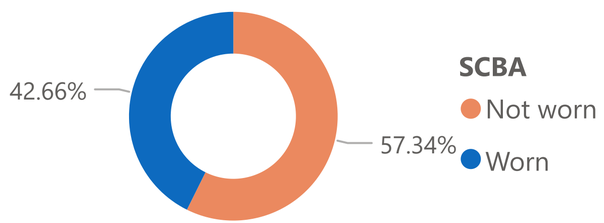
% of Events Marked as "High" or "Extreme" Risk

1 in 2 Events Are High or Extreme Risk

49.1 %

SCBA Usage

SCBA was not worn in over half of events.



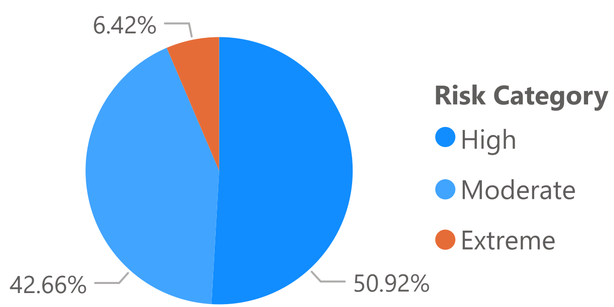
Risk Cluster Profiling & Analysis

Risk Category: All

Task: All

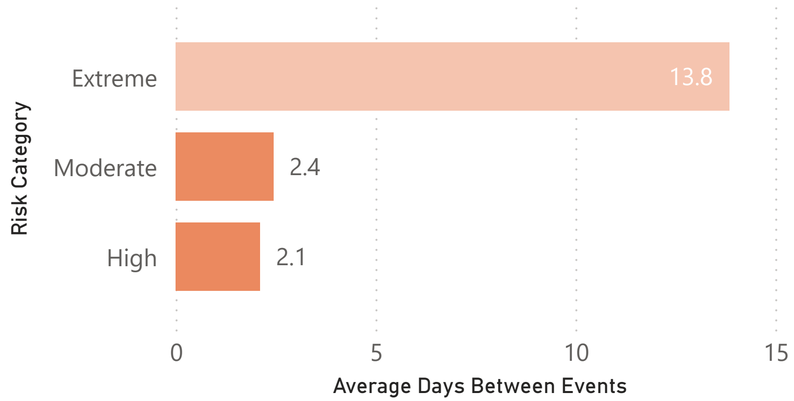
Breakdown by Risk Category

Events marked as "High" risk accounted for over 50%.



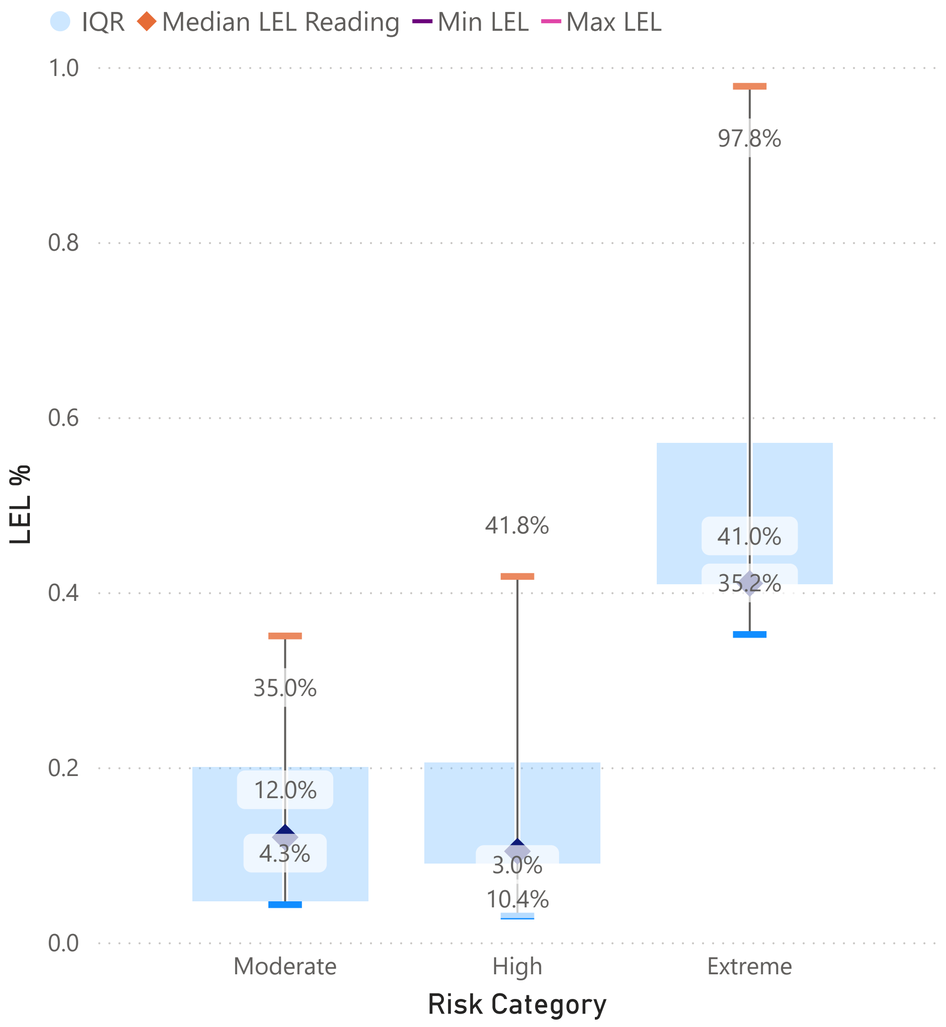
Event Frequency by Risk Category

High-risk events are frequent, not isolated.



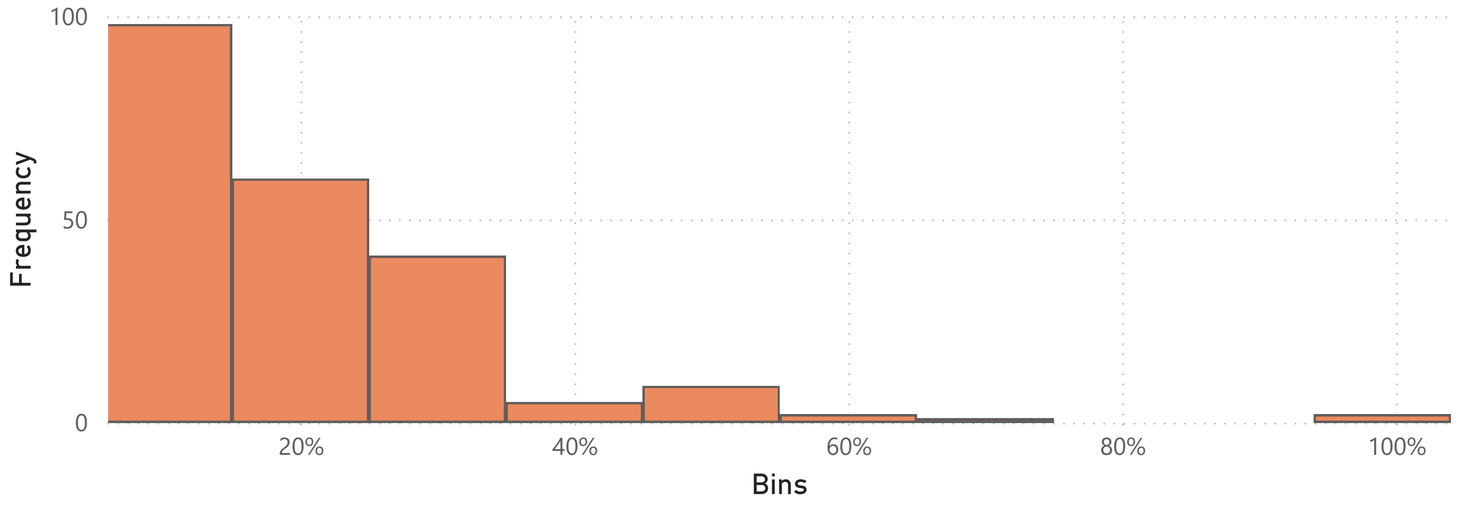
Box Plot: Risk Category

Events labeled as "Extreme" had the highest min, max, and median.



Distribution of LEL Readings

Right-skewed: Only a few events are marked as outliers and categorized as "Extreme" risk.

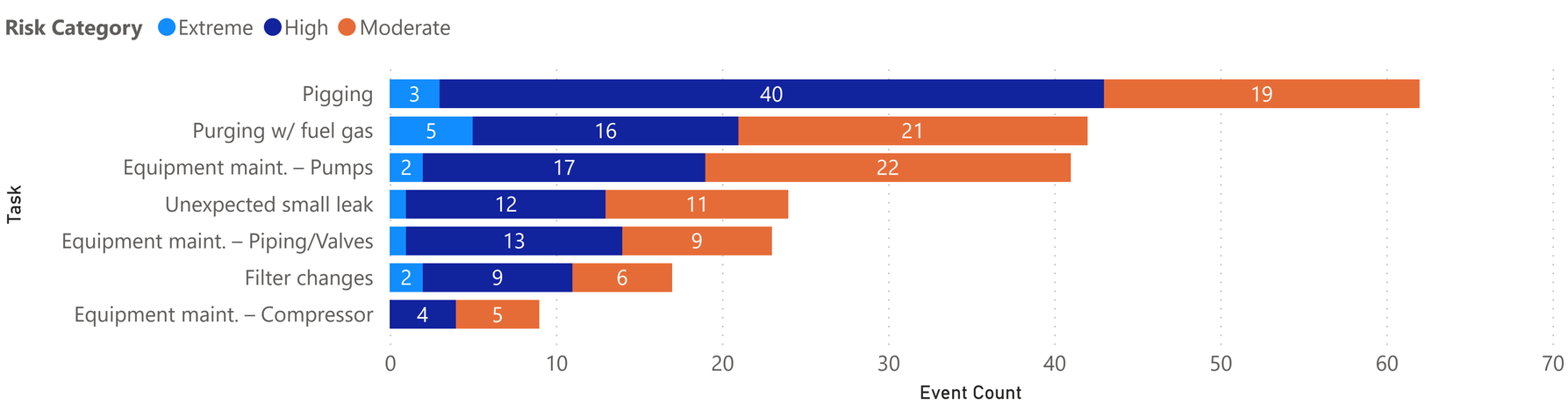


Risk Categorization for Operation Activities

Risk Category
All

Event Count by Task w/ Risk Breakdown

Pigging recorded the most events, but Purging had the most events marked as "Extreme".



Risk Score by Task

Pigging is the riskiest.

Task	Risk Score (1-5)
Purging w/ fuel gas	5.00
Pigging	4.00
Unexpected small leak	4.00
Equipment maint. – Pumps	3.00
Equipment maint. – Piping/Valves	2.00
Filter changes	2.00
Equipment maint. – Compressor	1.00
Overall	**4.00**

Risk Score = Impact x Likelihood

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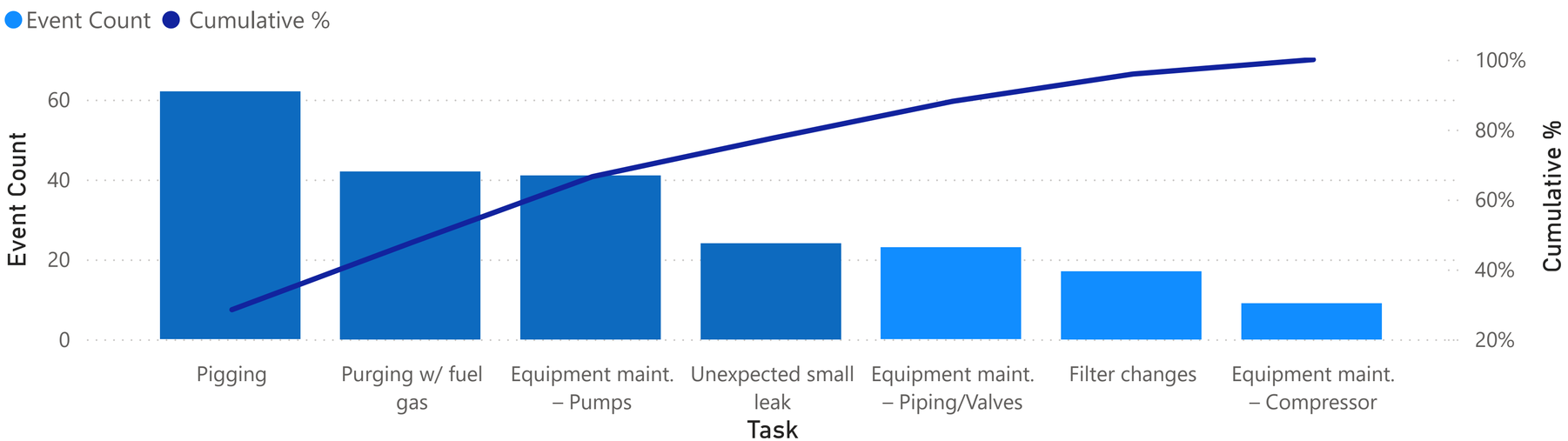
Pareto Analysis for Incidents by Task



Patero Parameter

Pareto Threshold

0.80

Pigging, **purging with fuel gas**, **equipment maintenance (pumps)**, and **small leak** are the primary drivers.

By focusing mitigation efforts on the top four tasks identified, operations could reduce LEL-triggered events by up to ~80%, lowering incident response costs, downtime, and worker exposure risk.