

Air Force Institute for Operational Health

Integrity - Service - Excellence

Hexavalent Chromium within the U.S. Air Force



Major Michael Moran

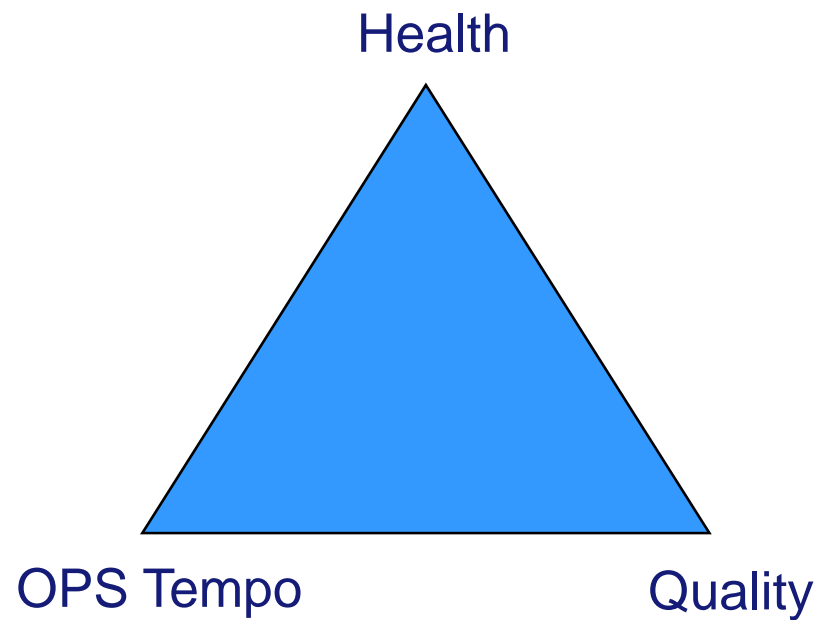
June 07

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Impact of New Standard



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Impact of New Standard



- **High Impact**
 - Exposure determination
 - Methods of compliance
 - Engineering controls and work practices
 - Communications
- **Moderate Impact**
 - Medical Surveillance
 - Physical exam of skin & resp tract, admin requirements
 - Housekeeping
 - Promptly cleaning spills, label waste



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Exposure Determination



- **Scheduled Monitoring**
 - Labor intensive
 - Frequency based on results

- **Performance Based**
 - Need sufficient data to accurately characterize exposures
 - Administrative burden
 - Data must be representative of current operations
 - Similar work practices, materials, environmental conditions, engineering controls

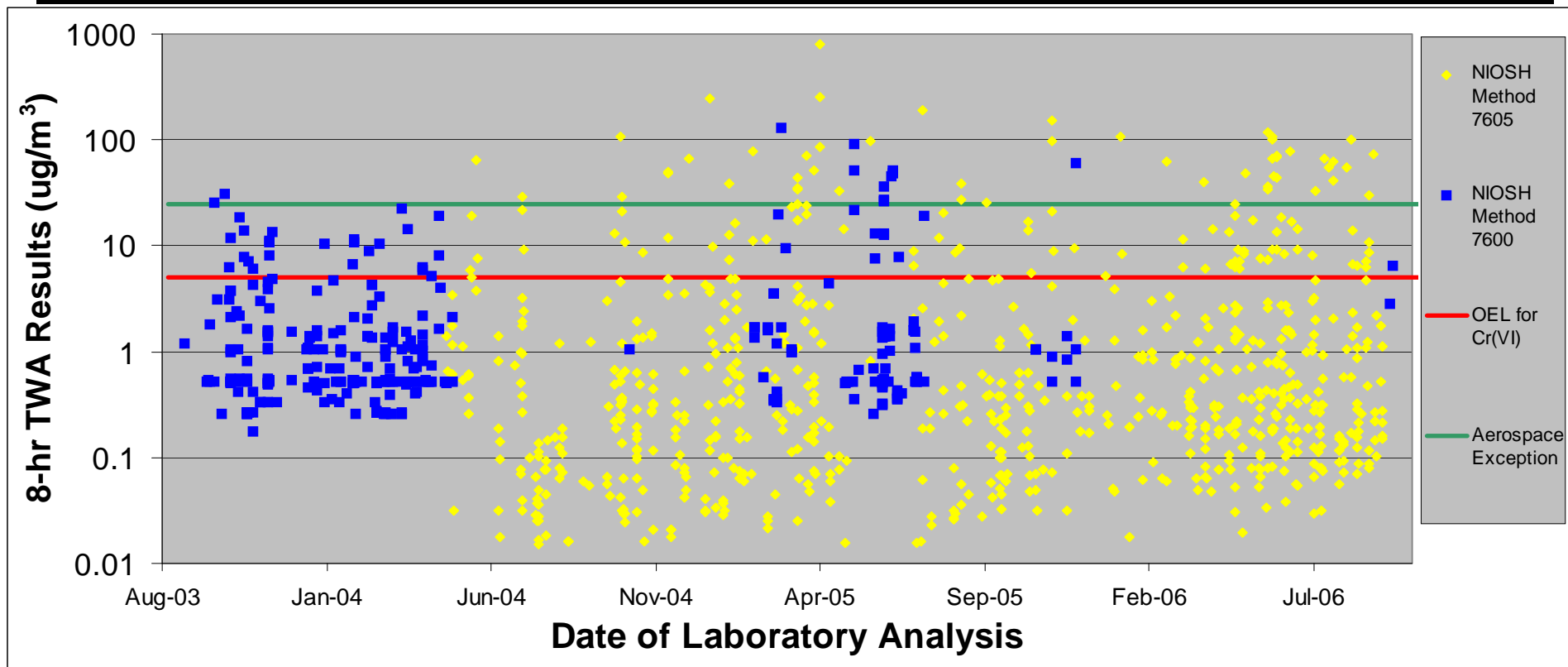


Exposure Results



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NIOSH Method	# of Filters Analyzed	# of TWAs	Sample Collection Date Range	Samples Percent Censored	# of Bases	Laboratory Reporting Limit	TWA Arithmetic Mean	TWA Median	TWA Maximum Value
7605	1946	727	May 04 - Sep 06	7.2%	81	0.03 µg	7.67 µg/m ³	0.33 µg/m ³	813 µg/m ³
7600	836	354	Sep 03 - Sep 06	73.1%	51	0.5 µg	3.72 µg/m ³	0.70 µg/m ³	130 µg/m ³
7605 & 7600	2782	1081	Sep 03 - Sep 06	29.1%	90		6.38 µg/m ³	0.52 µg/m ³	813 µg/m ³

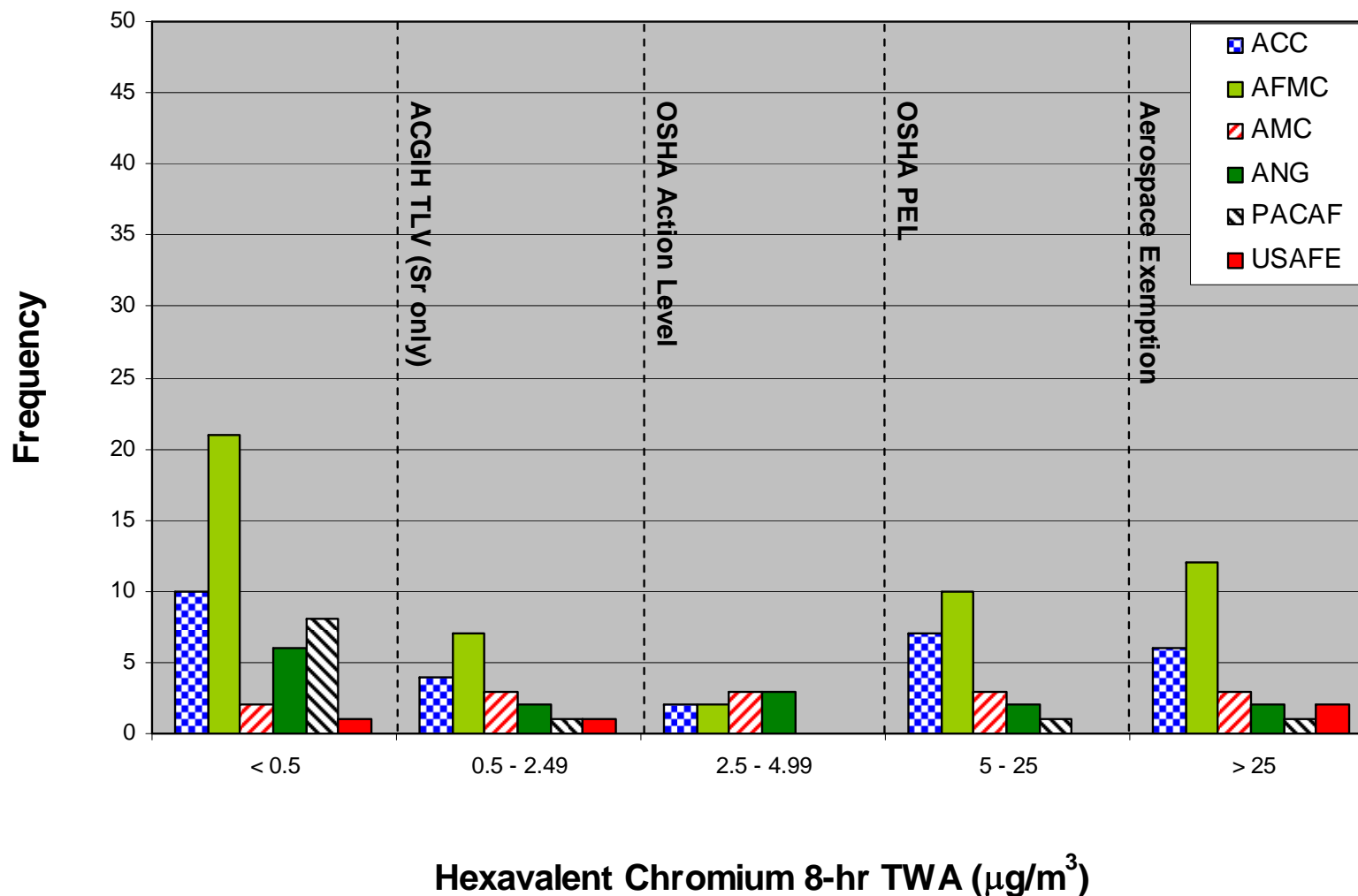


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Painting Operations

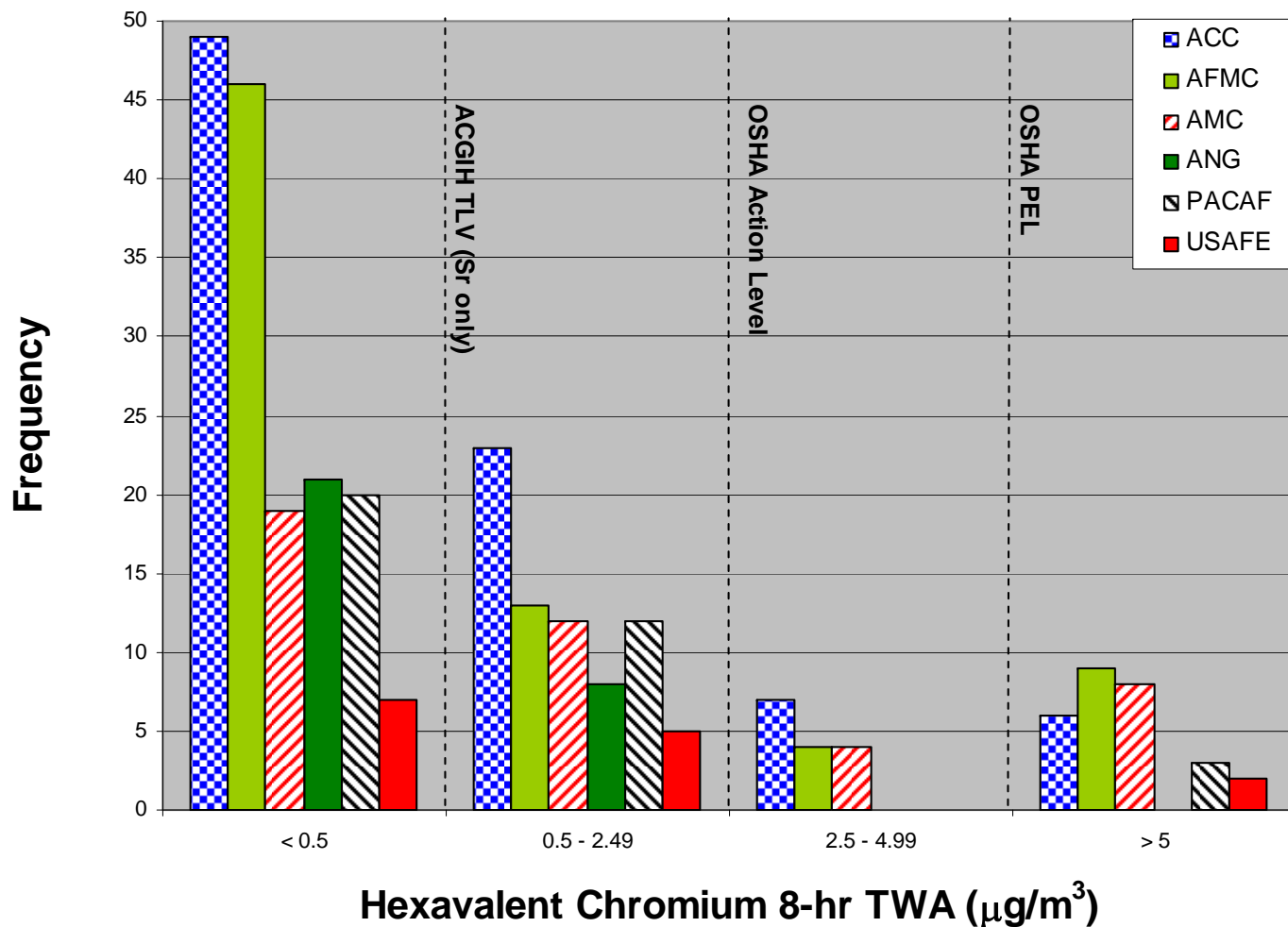


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Sanding Operations

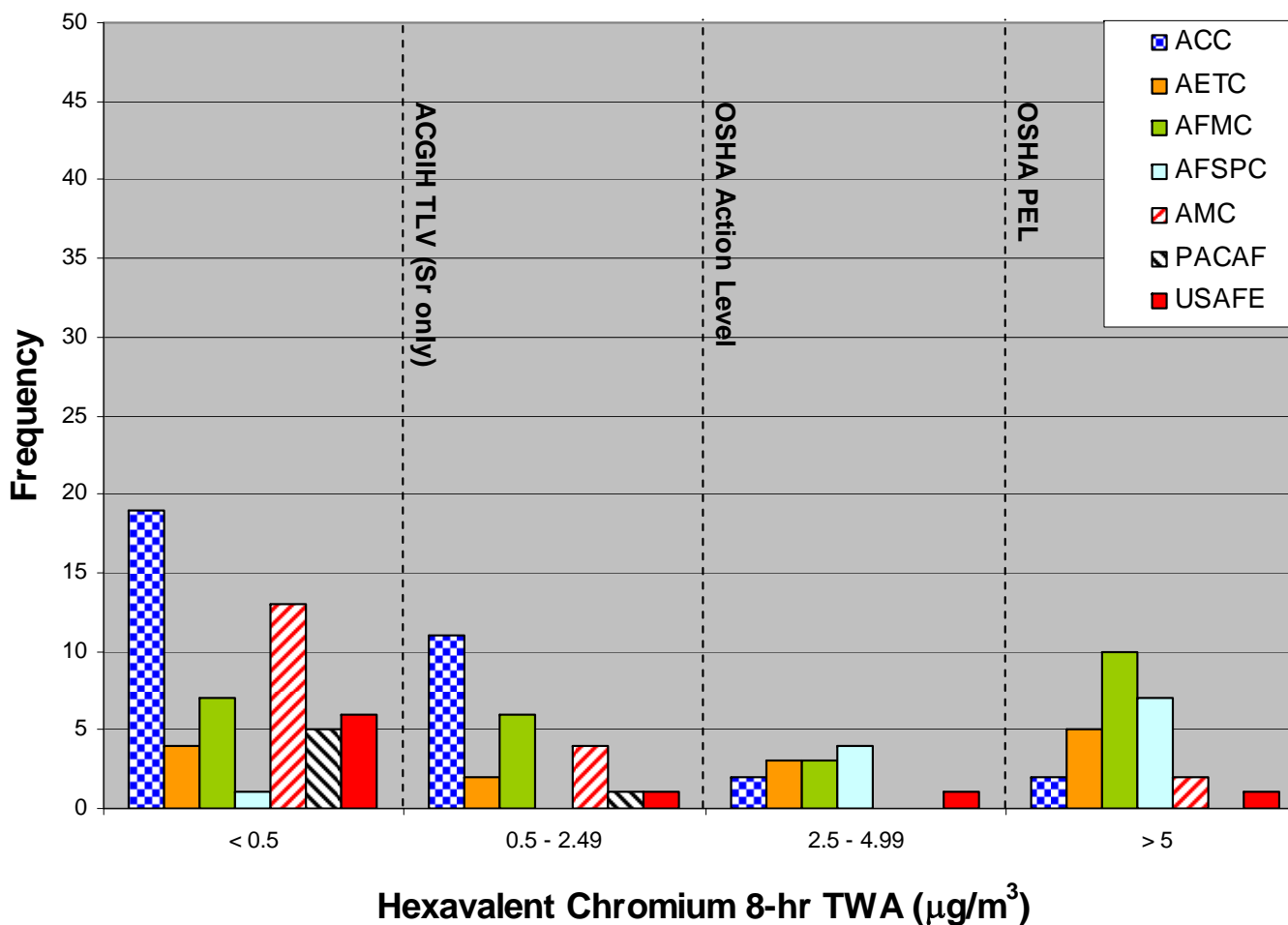


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Abrasive Blasting



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Compliance



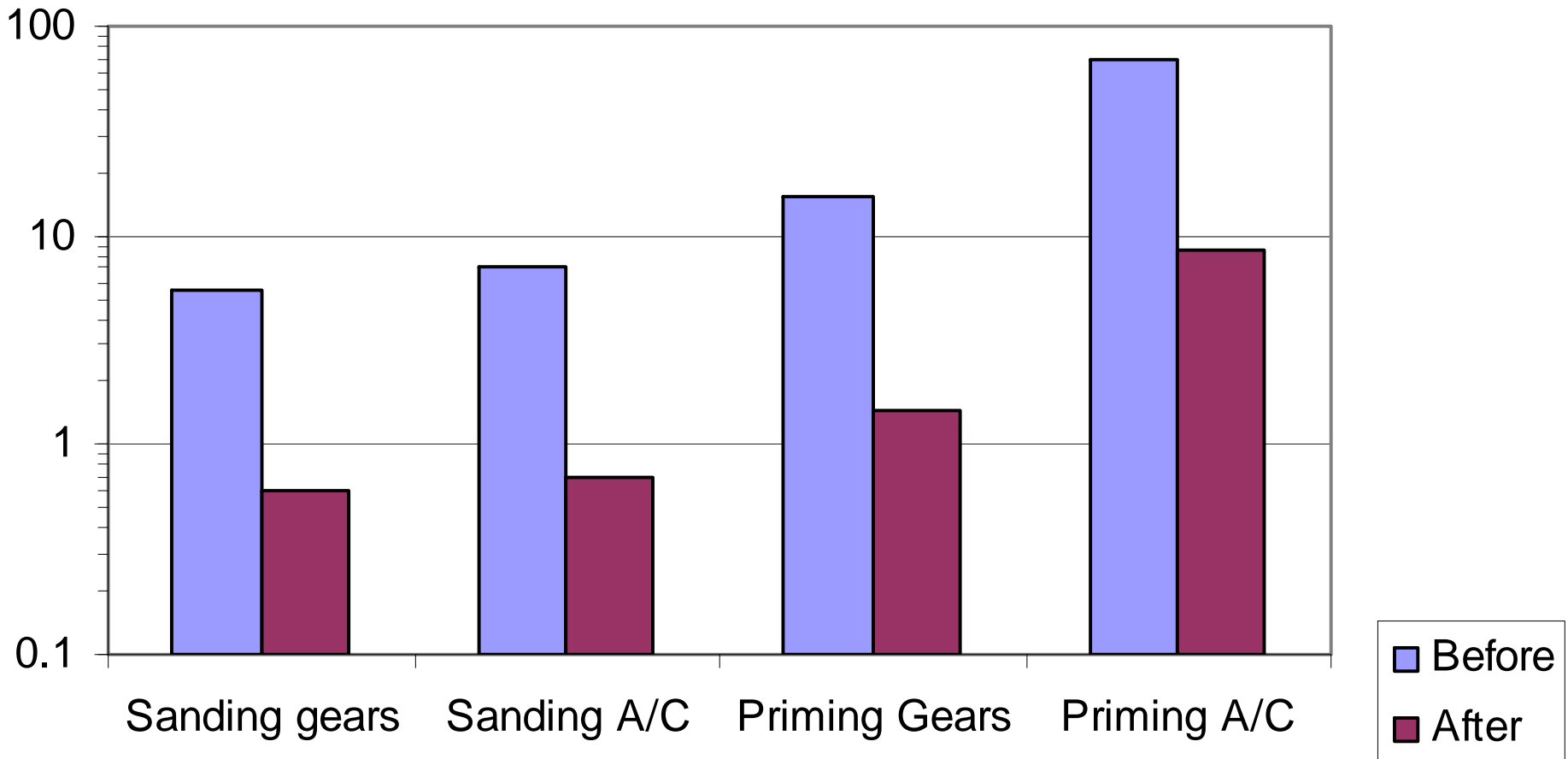
- **Engineering Controls and Work Practices**
 - Reduce exposures below PEL
 - Eliminate need for RP

- **AF Issues**
 - Large paint booth ventilation systems
 - Designed to control LEL
 - Reliance on PPE
 - Worker complacency



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Maximum Cr(VI) Exposures Before & After Modified Procedures (Cannon AFB)





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Work Practices



■ Priming

■ Proper body position

- Keep side or back to the direction of airflow
- Start priming from the end of the aircraft nearest the exhaust

■ Minimize # of painters (Ideally 1 person)

- Avoid mirror painting

■ Ensure air pressures meet manufacturer's recommendations

- Wall, pressure pot and gun air cap



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Work Practices



■ Sanding

- Use ventilated sander w/ HEPA vacuum
- Keep surface of sander as flat as possible
- Reduce the depth of sanding
- Avoid proximity of co-workers



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Communication



- Increased training requirements
 - Knowledgeable about standard
 - Purpose and description of medical surveillance