



STORMWATER POLLUTION PREVENTION & SPILL RESPONSE TRAINING

City of Phoenix Aviation Department

► August 2017

- This training is being photographed. If you do not wish to be photographed, please let the instructor know and move to the back of the room.

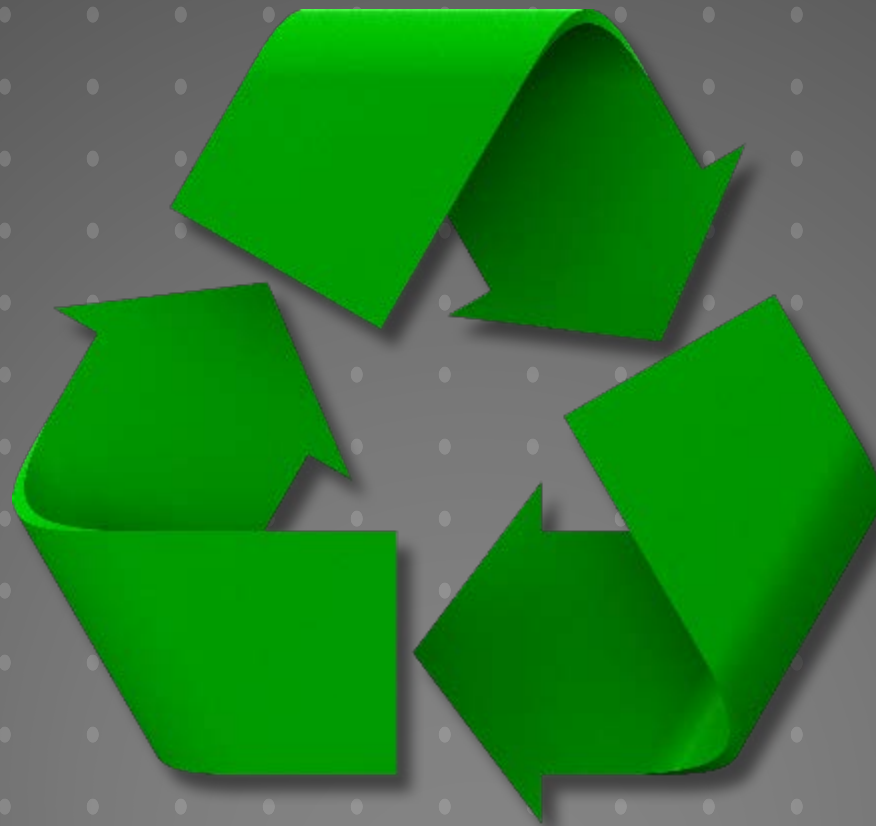




TRAINING OBJECTIVES

- ▶ SPECIAL GUESTS
 - ▶ Jerry Haws – Recycling
 - ▶ Captain Ken Balmes – Spill Response Training
 - ▶ Robert Stewart, Chris Henninger – myADEQ
- ▶ Importance of Preventing Stormwater Pollution
- ▶ Aviation Department's Stormwater Program
- ▶ Responsibilities of the Aviation Department
- ▶ Pollution Prevention Team Responsibilities
- ▶ Outfall Visual Monitoring
- ▶ Stormwater Pollution Prevention Plan (SWPPP)
- ▶ Control Measures (CMs)
- ▶ Stormwater Inspections

SPECIAL GUEST:
JERRY HAWS - RECYCLING



Fuel Spills at Sky Harbor, Deer Valley, and Goodyear Airports.

Storm Water Prevention, 2017

Captain Ken Balmes

Station 19

Foam 3

Things You May Not Know?

- How much Jet A fuel flows through Sky Harbor in one Day?
1,200,000 Gallons
- Wing vent spills account for 95% of all fuel spills at PHX Sky Harbor



Jet A Properties

- Colorless to straw colored in appearance
- Similar to Diesel or Kerosene
- Largest Hazardous Material at all major airports
- Floats on Water
- Flash point of 100-140 Degrees F
- Eye and Skin Irritant
- More flammable when atomized
- Slippery

Avgas Properties

- Similar to Gasoline
- Highly Flammable
- 100LL Octane
- Flash point at -43 Degrees F
- Blue Tint Additive
- Fixed Based Operators (FBOs)

Fuel Spill Prevention

- Equipment is in acceptable operating condition
- Fueling operations are performed in accordance with regulations and standards
- Know where extinguishers, fire prevention systems, and SPILL KITS are located
- Fire extinguisher training

Minor Spill Control and Clean Up

- Stop the fuel safely
- Use a metal container and not plastic (Static electricity)
- Use Personal Protective Equipment (PPE)
 - ✓Gloves
 - ✓Eyewear
 - ✓Footwear
 - ✓Safety Goggles
- Dispose of all rags, absorbent, etc. in a fire proof/oily can
- Follow Company Safety Protocol
- Notify your Supervisor



One Gallon of Water



20 Gallons of Water



Moderate to Major Fuel Spills

- Stop the spill when safe to do so by properly qualified and equipped personnel
- Call the Communications Center at (602) 273-3311 or 911 and relay the following:
 - a) Location of the spill
 - b) Material spilled
 - c) Whether the release has been contained
 - d) Approximate size of the spill
 - e) Aircraft and/or equipment involved
 - f) Whether employees are capable of clean up
- Evacuate passengers if spill is located under/near aircraft
- If it is safe to do so and you have the proper training, equipment, and material, you may start clean up or begin containment of the spill prior to Fire Department and Oscar 30's arrival
- Use spill kits and prevent any spills from reaching storm drains or soil

Moderate to Major Fuel Spills, Continued

- Use absorbent (kitty litter) to cover the spill
- Do not move any equipment, fuel trucks, GPU's, Lavatory trucks, etc.
- Do not start or turn off any equipment, if an engine is running, keep it running
- Notify your supervisor and have him/her respond immediately to the site
- Stand by with fire extinguishers in an upwind position
- Direct traffic away and keep nonessential personnel at a safe distance
- If you are a supervisor, remain on the scene with Unified Command, i.e. Fire Dept. and/or Oscar 30

What Happens After You Call at Sky Harbor?

Initial Responders at Sky Harbor:

- Foam 3 (Crash/Foam truck)
- Battalion 19
- Closest responder Airside Operator (Oscar unit)
- Oscar 30 (Airside Operator Supervisor)
- Unified Command is established



Aviation Operators

Airside Operator (AO)



Oscar 30 (Supervisor)



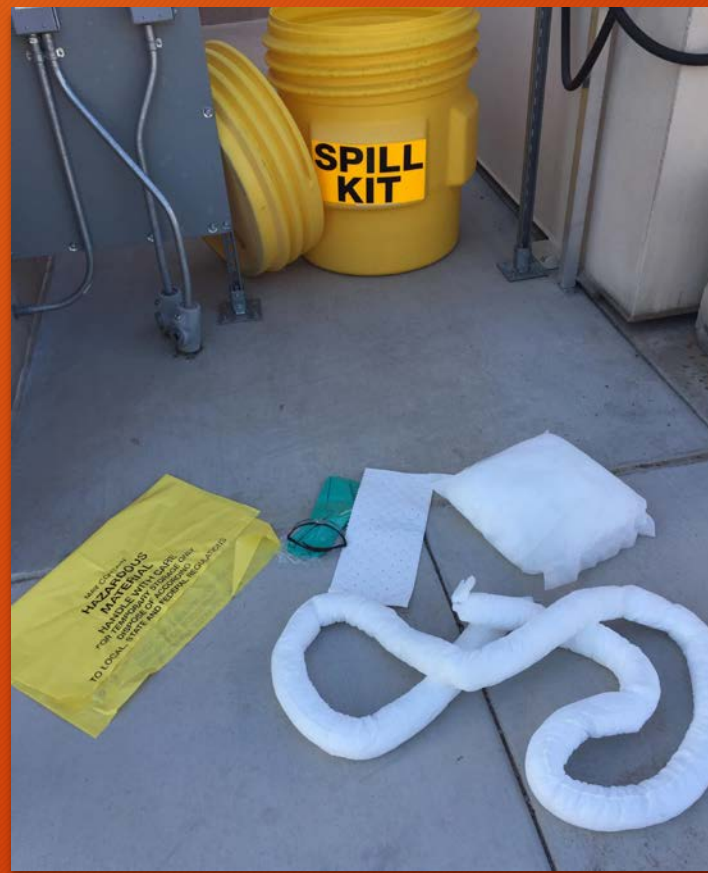
Primary Responsibilities Of Command

- Remove endangered occupants and treat the injured
- Stabilize the incident and provide for life safety
- Conserve property
- Provide for the safety, accountability, and welfare of all personnel throughout the entire incident

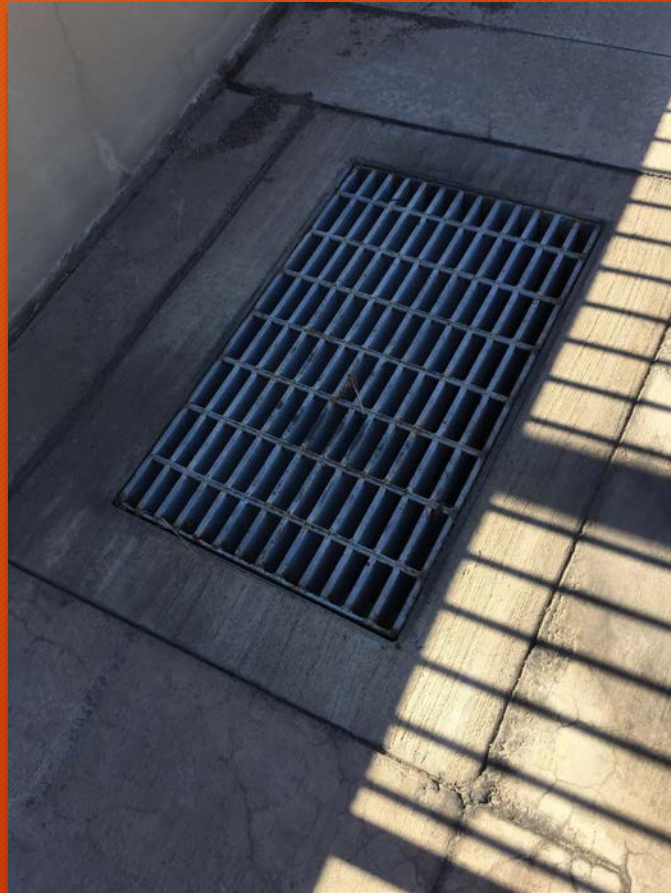
Resources Available

- Spill kits are paramount for initial spill
- Absorbent which can be quickly dispatched to the scene. Early notification is the key
- Shovels for absorbent and possibly sand/dirt
- Brooms
- Sweepers
- Haz Mat containment bin/space at Sky Harbor Facilities
- Additional personnel

Spill Kits



Where Don't We Want Fuel To Go?



Thank You

Captain Ken Balmes

ken.m.balmes@phoenix.gov

Sky Harbor Fire District

Station 19

602-262-6319

TRIVIA QUESTION NO. 1



Stormwater Pollutants can include:

Sediment

Trash

Chemicals

All of the Above

TRIVIA QUESTION NO. 1



Stormwater Pollutants can include:

Sediment

Trash

Chemicals

All of the Above

WHAT IS STORMWATER?

- ▶ Surface runoff from rain or snow melt that enters streams and rivers via storm drains or open drainage ways **WITHOUT** treatment



WHY IS STORMWATER QUALITY IMPORTANT?



► Resource



► Fish and Wildlife



► Recreation

COMMON AIRPORT POLLUTION SOURCES

- ▶ AVE Maintenance, Cleaning, and Storage
- ▶ Material Storage Areas
- ▶ Airport Fuel Systems and Fueling Areas
- ▶ Building and Grounds Maintenance
- ▶ Waste Handling and Disposal
- ▶ OWS, Lavatory, & Potable Water Service
- ▶ Facility Structural Improvements
- ▶ Aircraft Deicing



AVIATION DEPARTMENT RESPONSIBILITIES

- ▶ Administer the Stormwater Pollution Prevention Plan (SWPPP)
- ▶ Develop and Implement Control Measures (CMs)
- ▶ Develop and Present Semi-Annual Training
- ▶ Perform Quarterly Inspections
- ▶ Conduct Visual Outfall Monitoring Quarterly
- ▶ Evaluate Non-stormwater Discharges
- ▶ Track Spills
- ▶ Track Amount of Deicing Chemicals used
- ▶ Prepare Annual Report
- ▶ **Aviation will no longer be paying annual fees.**



PPT MEMBERS RESPONSIBILITIES

- ▶ Assign a local PPT member
- ▶ Submit NOI or NEC
- ▶ Implement SWPPP and CMs
- ▶ Document compliance with regular site inspections
- ▶ Attend semi-annual training
- ▶ Document employee training
- ▶ Facilitate site inspections
- ▶ Be ready for ADEQ inspections and notify Aviation if contacted by ADEQ
- ▶ Retain a copy of the SWPPP
- ▶ Submit a Notice of Termination (NOT) when operations no longer conducted at airport



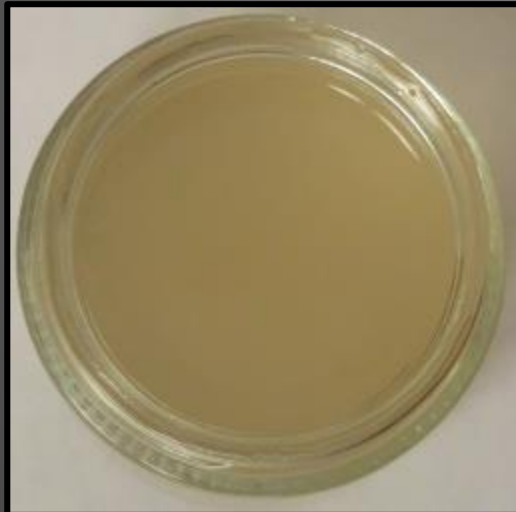
VISUAL ASSESSMENT/MONITORING

- ▶ 4 Monitoring Events Required per Year
 - ▶ 2 During Winter Wet Season
 - ▶ 2 During Summer Wet Season
- ▶ Samples collected within 30 min of beginning of runoff
- ▶ If contaminant is detected, Inspector must try to determine the source of the pollutant



VISUAL ASSESSMENT/SAMPLING

SAMPLE 1



SAMPLE 2



SAMPLE 3

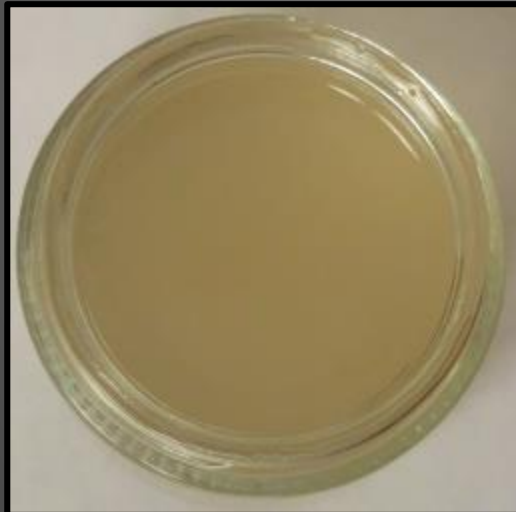


VISUAL ASSESSMENT/SAMPLING

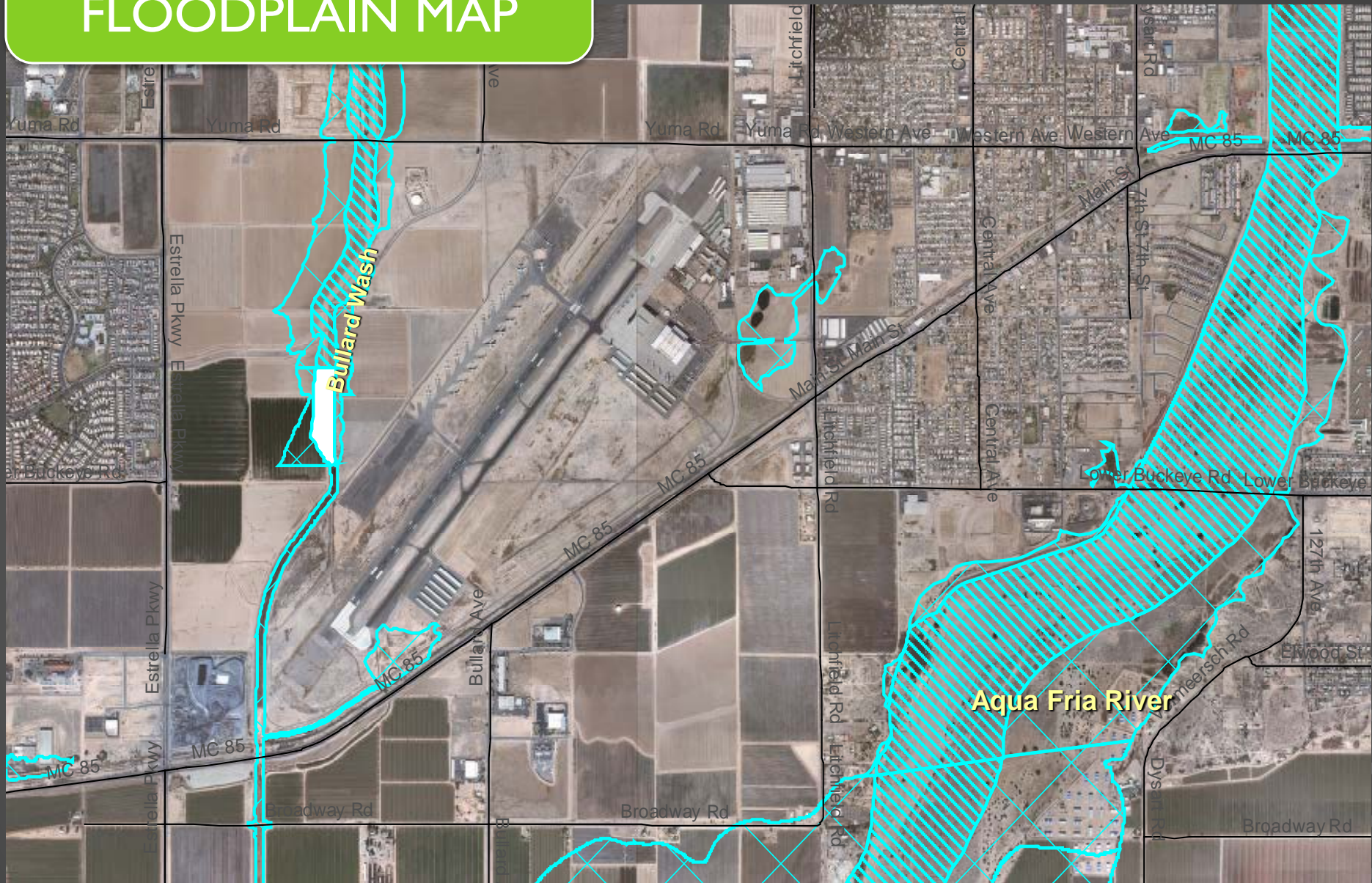
TYPICAL

FOAM

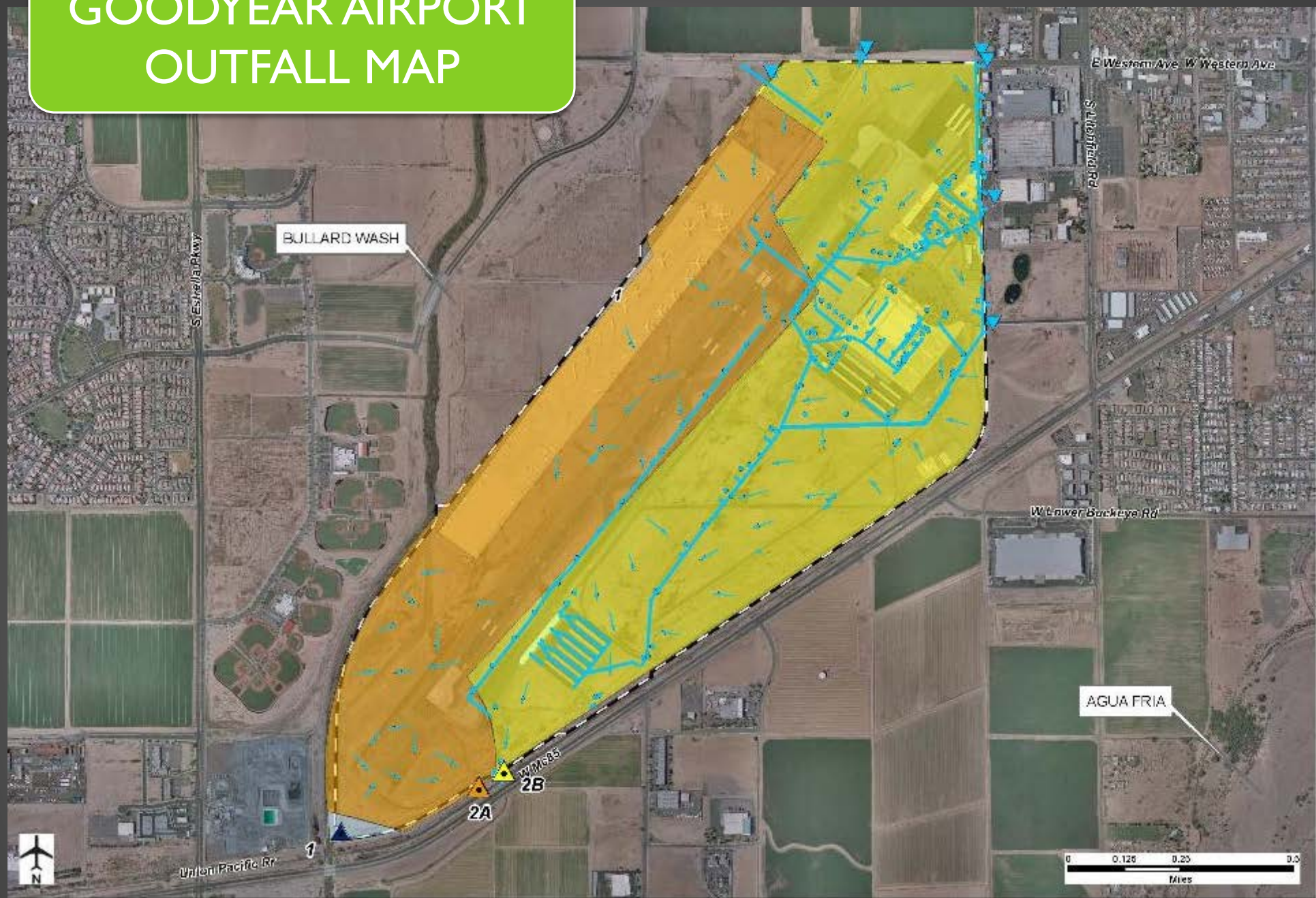
SEDIMENT/DEBRIS



GOODYEAR AIRPORT FLOODPLAIN MAP



GOODYEAR AIRPORT OUTFALL MAP



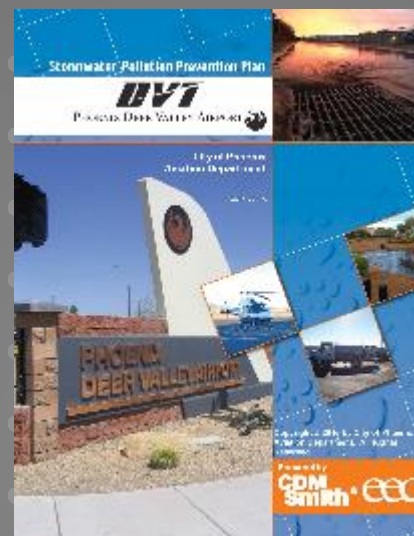
STORMWATER POLLUTION PREVENTION PLAN

- ▶ Identifies potential sources of pollution
- ▶ Prescribes measures to control those sources
- ▶ Current SWPPPs are available online:

<https://www.skyharbor.com/Business/RulesAndRegulations/StormWater>

<https://deervalleyairport.com/DoingBusiness/AirportRulesRegulations>

<https://goodyearairport.com/DoingBusiness/RulesAndRegulations>



CONTROL MEASURES

Techniques, processes, activities, or structures used to reduce the amount of pollutants released into the stormwater system.



Categories of Control Measures

- ▶ Structural
- ▶ Non-structural

CONTROL MEASURES

- ▶ **STRUCTURAL** - Physical device designed and constructed to delay, capture, store, filter, or treat stormwater runoff either at the point of generation or at the point of discharge.



- ▶ **NON-STRUCTURAL** - Dependent upon behaviors and are typically intended to reduce rather than eliminate stormwater pollution sources.



TRIVIA QUESTION NO. 2



True or False

This training and the online SWPPP training meet requirements for SPCC, Waste Management and Fuel Handling training.

TRIVIA QUESTION NO. 2



True or **False**

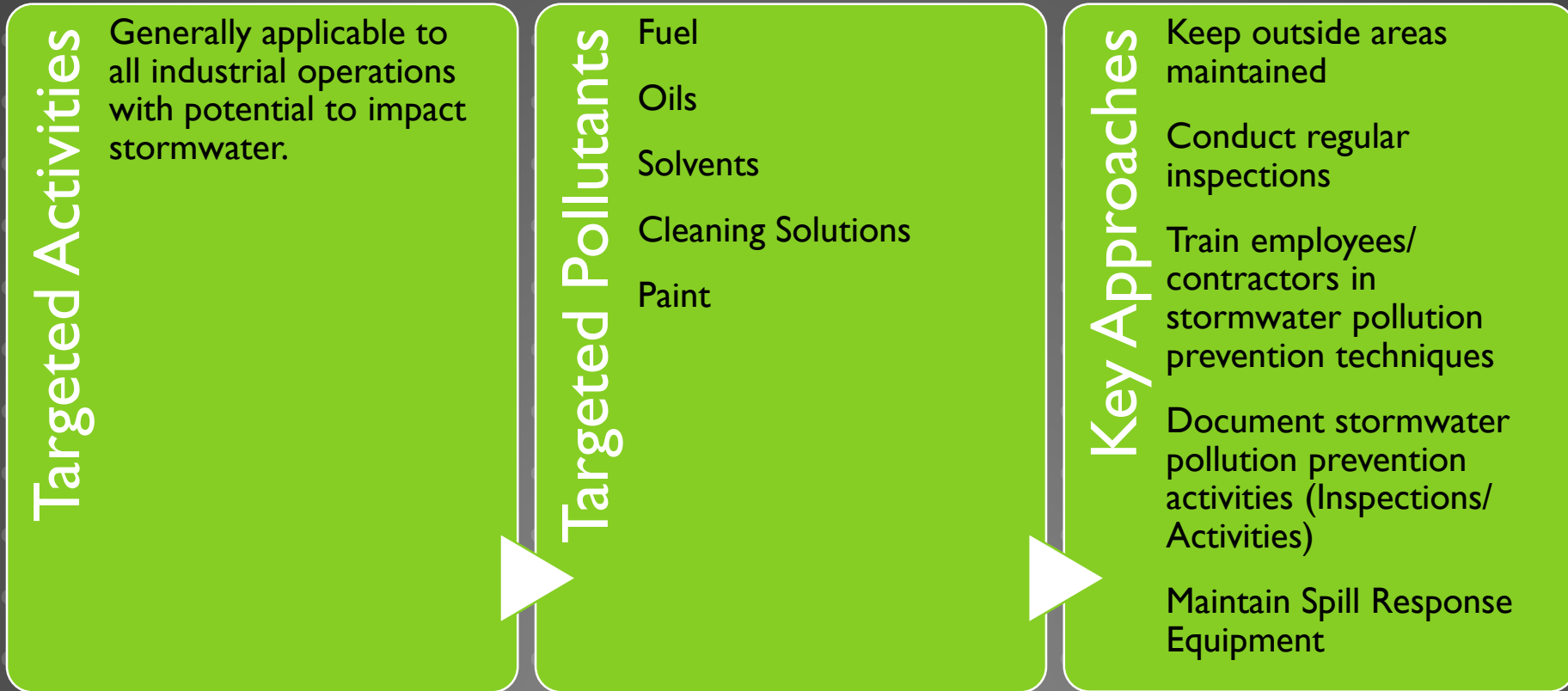
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CONTROL MEASURES

- ▶ 1. Facility Wide
- ▶ 2. AVE Maintenance
- ▶ 3. AVE Cleaning
- ▶ 4. AVE Storage
- ▶ 5. Material Storage
- ▶ 6. Fueling
- ▶ 7. Building and Grounds Maintenance
- ▶ 8. Recycling, Waste Handling & Storage
- ▶ 9. OWS, Lavatory and Potable Water Service
- ▶ 10. Facility Structural Improvements
- ▶ 11. Deicing

CM 1.0 FACILITY-WIDE CMS



CM 1.0 FACILITY-WIDE CMS GOOD AND BAD EXAMPLES



CM 1.0 FACILITY-WIDE CMS

GOOD AND BAD EXAMPLES



CM 2.0 AIRCRAFT, VEHICLE, AND EQUIPMENT MAINTENANCE



CM 2.0 AVE MAINTENANCE CMS GOOD AND BAD EXAMPLES



CM 2.0 AVE MAINTENANCE CMS GOOD AND BAD EXAMPLES



TRIVIA QUESTION NO. 3



True or False

It is OK to wait until the end of your shift before you clean up a spill?

TRIVIA QUESTION NO. 3



True or **False**

It is OK to wait until the end of your shift before you clean up a spill?

CM 3.0 AIRCRAFT, VEHICLE, AND EQUIPMENT CLEANING



CM 3.0 AVE CLEANING CMS GOOD AND BAD EXAMPLES

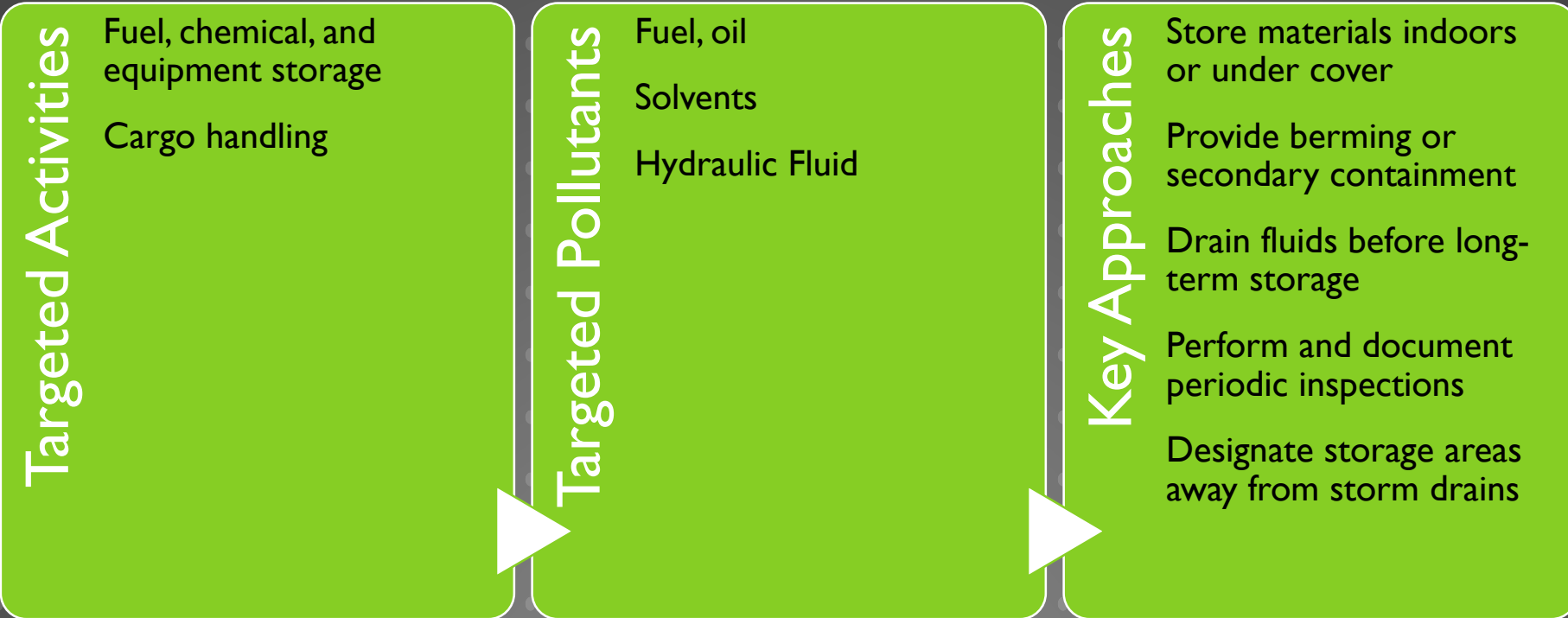


CM 3.0 AVE CLEANING CMS

GOOD AND BAD EXAMPLES



CM 4.0 AIRCRAFT, VEHICLE, AND EQUIPMENT STORAGE



CM 4.0 AVE STORAGE CMS GOOD AND BAD EXAMPLES

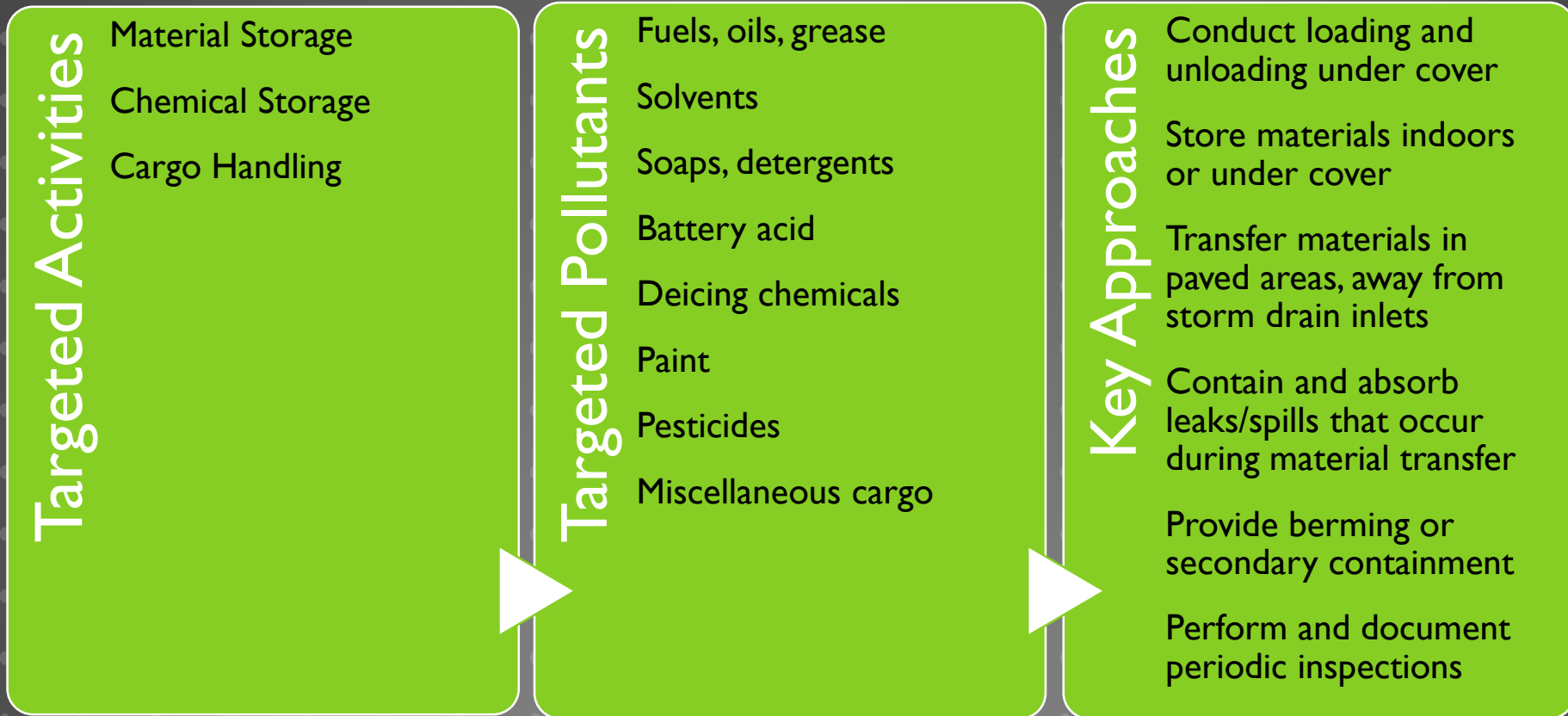


CM 4.0 AVE STORAGE CMS

GOOD AND BAD EXAMPLES



CM 5.0 MATERIAL STORAGE AREAS



CM 5.0 MATERIAL STORAGE AREAS GOOD AND BAD EXAMPLES



CM 5.0 MATERIAL STORAGE AREAS

GOOD AND BAD EXAMPLES



TRIVIA QUESTION NO. 4



What is the most common finding during the 2017 CFIs?

No record of site inspections

Chemicals were not stored on adequate containment

Leaks, spills and staining observed

Waste collection area not properly maintained

TRIVIA QUESTION NO. 4



What is the most common finding during the 2017 CFIs?

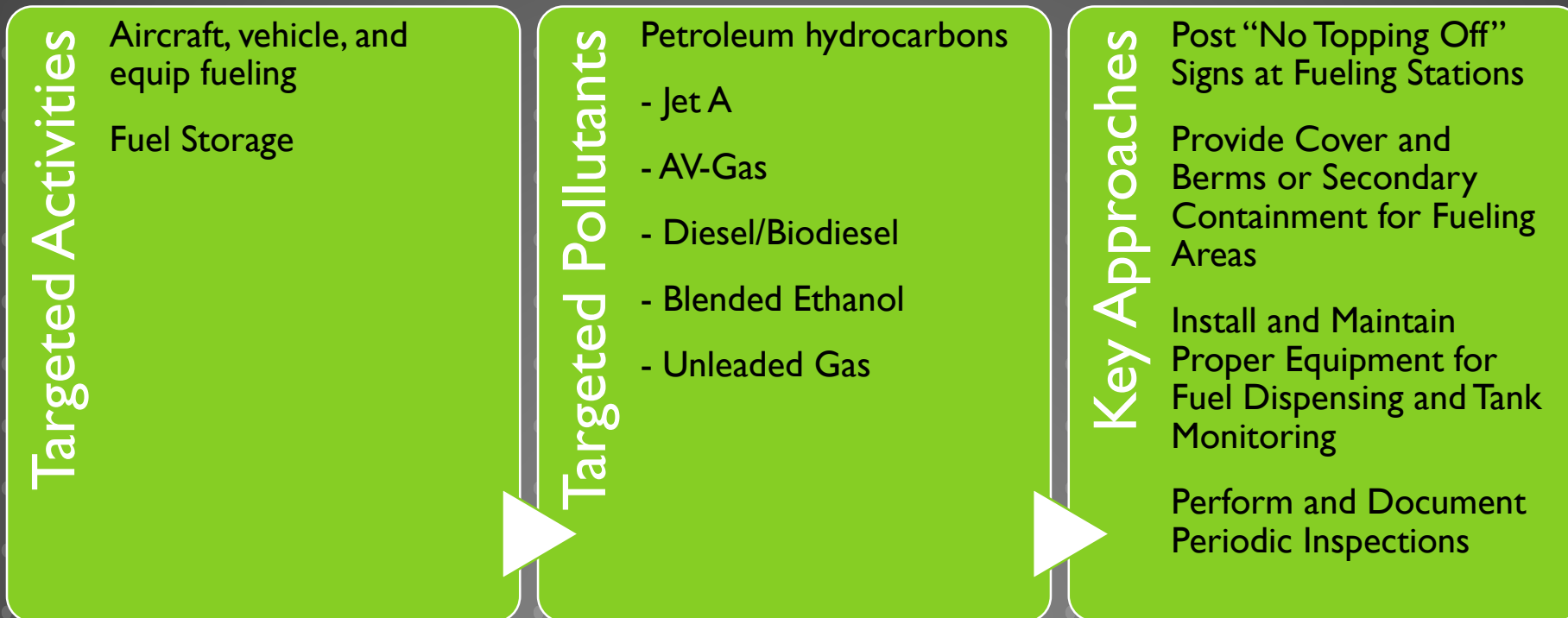
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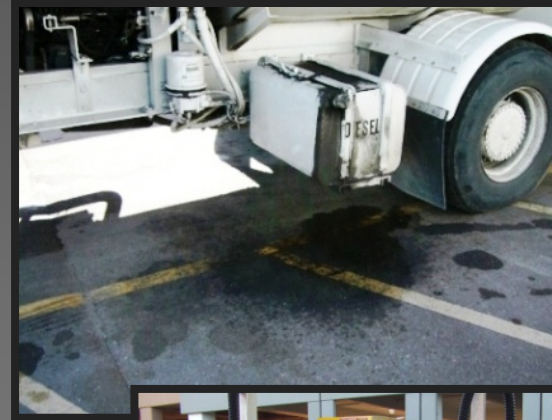
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CM 6.0 AIRPORT FUELING SYSTEMS AND FUEL AREAS

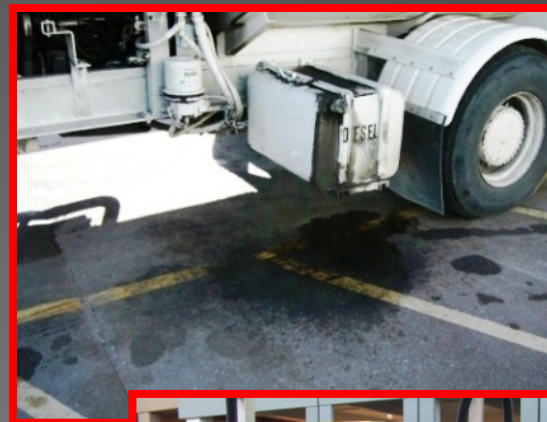


CM 6.0 FUELING SYSTEMS AND FUEL AREAS GOOD AND BAD EXAMPLES

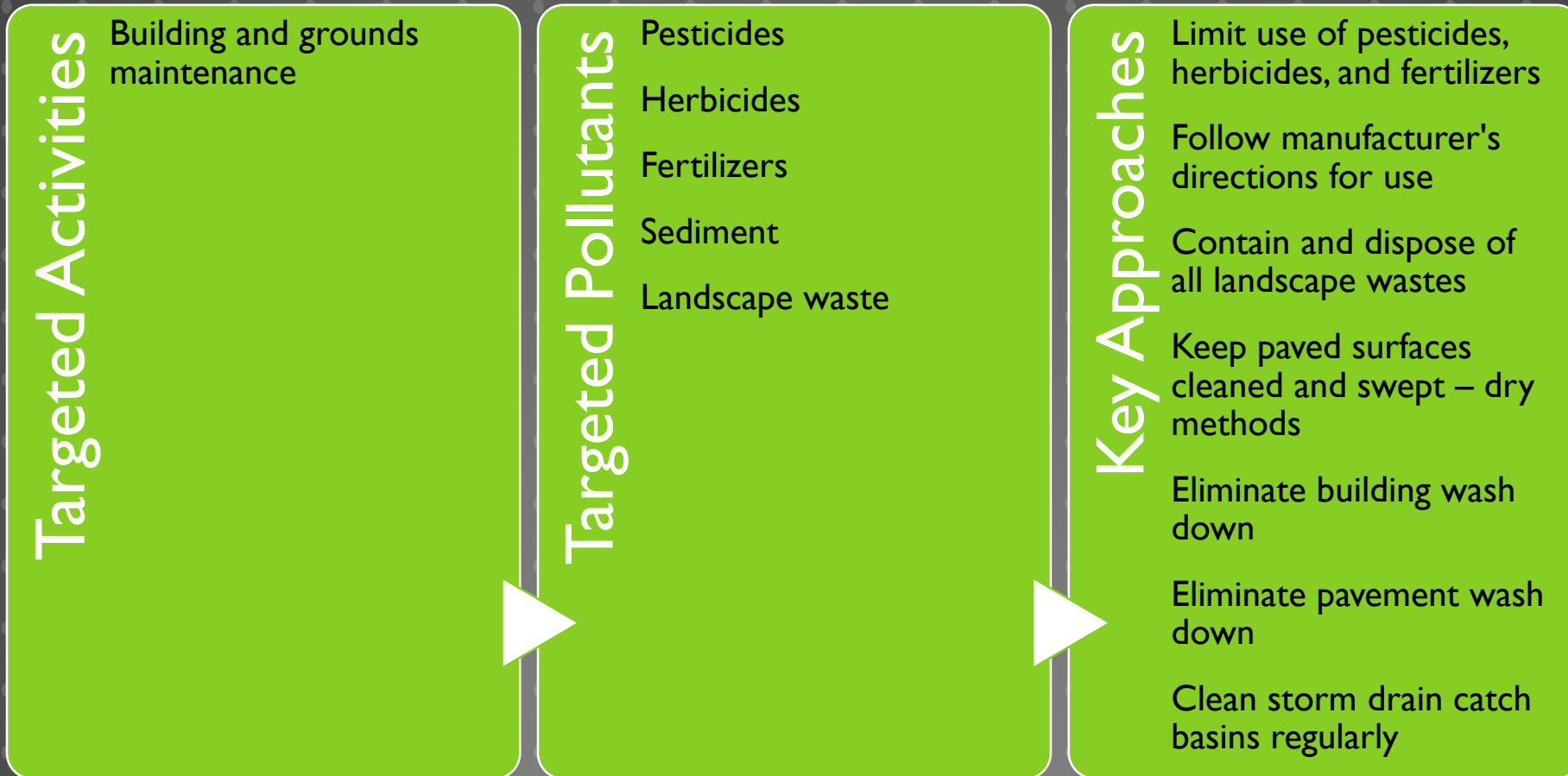


CM 6.0 FUELING SYSTEMS AND FUEL AREAS

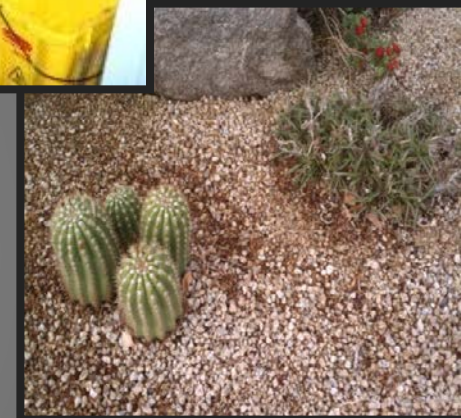
GOOD AND BAD EXAMPLES



CM 7.0 BUILDING AND GROUNDS MAINTENANCE



CM 7.0 BUILDING AND GROUND MAINTENANCE GOOD AND BAD EXAMPLES

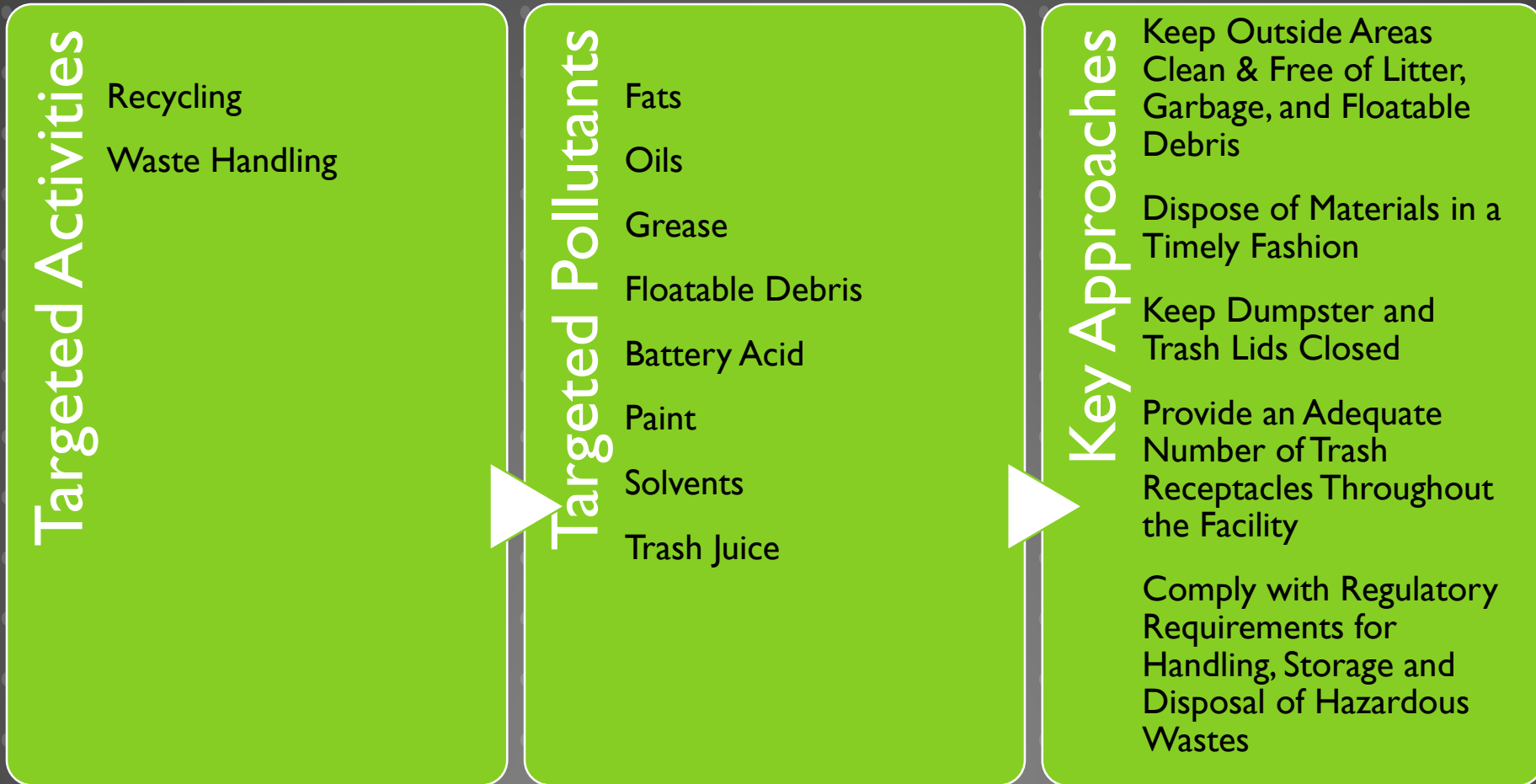


CM 7.0 BUILDING AND GROUND MAINTENANCE

GOOD AND BAD EXAMPLES



CM 8.0 RECYCLING, WASTE HANDLING AND DISPOSAL



CM 8.0 RECYCLING, WASTE HANDLING AND DISPOSAL GOOD AND BAD EXAMPLES

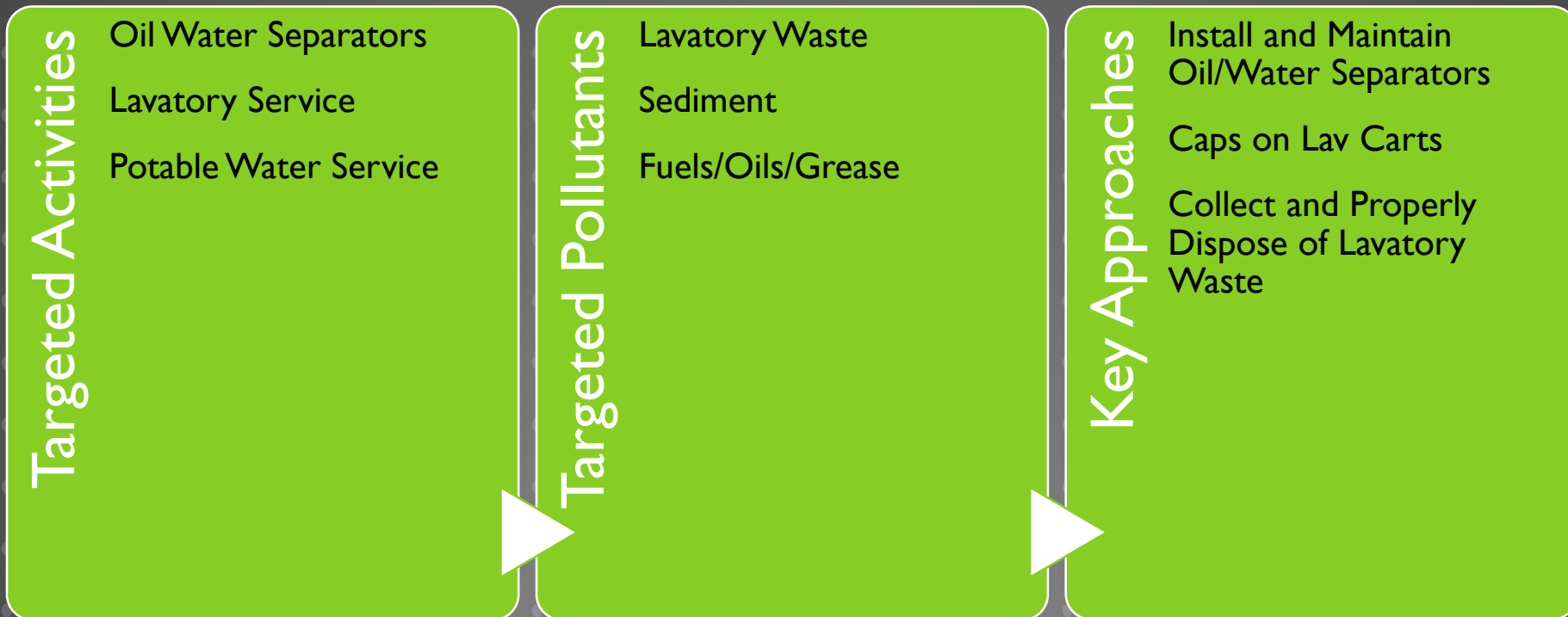


CM 8.0 RECYCLING, WASTE HANDLING AND DISPOSAL

GOOD AND BAD EXAMPLES



CM 9.0 OIL WATER SEPARATORS, LAVATORY AND POTABLE WATER SERVICE



CM 9.0 OWS, LAVATORY AND POTABLE WATER SERVICE GOOD AND BAD EXAMPLES



CM 9.0 OWS, LAVATORY AND POTABLE WATER SERVICE

GOOD AND BAD EXAMPLES



CM 10.0 FACILITY STRUCTURAL IMPROVEMENTS



CM 10.0 FACILITY STRUCTURAL IMPROVEMENTS

GOOD AND BAD EXAMPLES



CM 10.0 FACILITY STRUCTURAL IMPROVEMENTS

GOOD AND BAD EXAMPLES



TRIVIA QUESTION NO. 5



Who is responsible for supplying spill response material?

Aviation

Pollution Prevention Team

Employees

ADEQ/EPA

TRIVIA QUESTION NO. 5



Who is responsible for supplying spill response material?

Aviation

Pollution Prevention Team

Employees

ADEQ/EPA

STORMWATER INSPECTIONS

- ▶ Inspections
 - ▶ Quarterly inspections of each facility
 - ▶ Comprehensive inspection in February
 - ▶ One “wet” inspection per year –
Inspected within 24 hours of rain event
- ▶ Quarterly Inspections
 - ▶ June – August
 - ▶ September – November
 - ▶ December – February
 - ▶ March – May



STORMWATER INSPECTIONS

- ▶ Quarterly Inspections
 - ▶ Inspectors provide advance notice of one week
 - ▶ Minimal notice of “wet” inspection
 - ▶ Observing structural CMs on outside of facility
 - ▶ PPT member initials inspection form
 - ▶ Email sent within 2-3 days of compliance issues observed during inspection (if any)



STORMWATER INSPECTIONS

- ▶ Inspection Responses
 - ▶ 14 days from Inspection Date or
 - ▶ Next rain event
 - ▶ 90 Days for minor documentation items
 - ▶ Describe how issues were resolved (with pictures)
 - ▶ If takes longer, provide schedule for compliance



STORMWATER INSPECTIONS


RESOLVE ITEMS ON-SITE

- ▶ If you can fix the item during the inspection, please do
 - ▶ Fix non-compliances and send photos to the inspector before you receive summary email
 - ▶ If fixed, items will not be included in summary email
- ▶ Inspectors carry:
 - ▶ Spill Response Plan Stickers
 - ▶ PPT Specific Spill Response Plans
 - ▶ Markers for Labeling
- ▶ Do not wait until inspection to address items.



STORMWATER INSPECTIONS REQUIRED DOCUMENTATION

- ▶ Facility Inspection Checklists
 - ▶ Fueling area & storage tanks
 - ▶ OWS/sumps
 - ▶ Wash areas
 - ▶ Material/waste transfer/
storage areas
- ▶ Facility, Vehicle, and Equipment Maintenance Records
 - ▶ Waste generation/disposal documentation
 - ▶ OWS/sump maintenance records
 - ▶ Spill Response Plan
 - ▶ Hard copies of SDSs



CITY OF PHOENIX AVIATION DEPARTMENT – STORMWATER POLLUTION PREVENTION
MONTHLY INSPECTION CHECKLIST

FACILITY INFORMATION

Facility Name: _____
Address: _____

DATE/TIME	January	February	March	April
The last rain event occurred within:	+1 Day 1-3 Days 3-7 Days	+1 Day 1-3 Days 3-7 Days	+1 Day 1-3 Days 3-7 Days	+1 Day 1-3 Days 3-7 Days
Current Weather - Clear, Cloudy, or Raining?				
ODS/MSL MEASUREMENTS:	Y/N	Y/N	Y/N	Y/N
Wash Area & Underflow?	Y/N	Y/N	Y/N	Y/N
Area Free of Spills and/or Staining?	Y/N	Y/N	Y/N	Y/N
Leak Assessment - Spilled in?	Y/N	Y/N	Y/N	Y/N
Spill Kit - Inspections - Used & Clean?	Y/N	Y/N	Y/N	Y/N
Chemicals - Properly Labeled?	Y/N	Y/N	Y/N	Y/N
Chemicals - Stored on Secondary Containment?	Y/N	Y/N	Y/N	Y/N
Secondary Containment - Good Seal Joint?	Y/N	Y/N	Y/N	Y/N
Secondary Containment - Clean, Empty & Dry?	Y/N	Y/N	Y/N	Y/N
Tool Chests - Containers - Closed & Labeled/Checkered?	Y/N	Y/N	Y/N	Y/N
Fluid/Leak - Checked Up?	Y/N	Y/N	Y/N	Y/N
WVE - Not Leaking?	Y/N	Y/N	Y/N	Y/N
WVE - Properly Sealed from Rain?	Y/N	Y/N	Y/N	Y/N
Leakage - Depressure Discharge Connections?	Y/N	Y/N	Y/N	Y/N
Washing - Uncontaminated Area Labeled?	Y/N	Y/N	Y/N	Y/N
Washing - Keep Water Disposed or Properly Contained?	Y/N	Y/N	Y/N	Y/N
Comments:	If "No" responses to any items, describe:			

Signature _____ Date and Time _____

Signature _____ Date and Time _____

Signature _____ Date and Time _____

Signature _____ Date and Time _____

Inspected By/Inspector _____

STORMWATER INSPECTIONS REQUIRED DOCUMENTATION

- ▶ Training Documentation (sign-in sheets, presentation materials, handouts, etc.)
 - ▶ General Employee Training
 - ▶ SWPPP Training
 - ▶ Contractor SWPPP Training
 - ▶ SPCC Training & Review Sheet
 - ▶ Waste Management Training
 - ▶ Fuel Spill Response Training
- ▶ Recycling Information (manifests, bills of lading, etc.)
 - ▶ Tires, Antifreeze, Batteries, Oil, Oil Filters, Lamps, Ballasts
 - ▶ Hazardous Wastes (waste solvents & broken lamps)



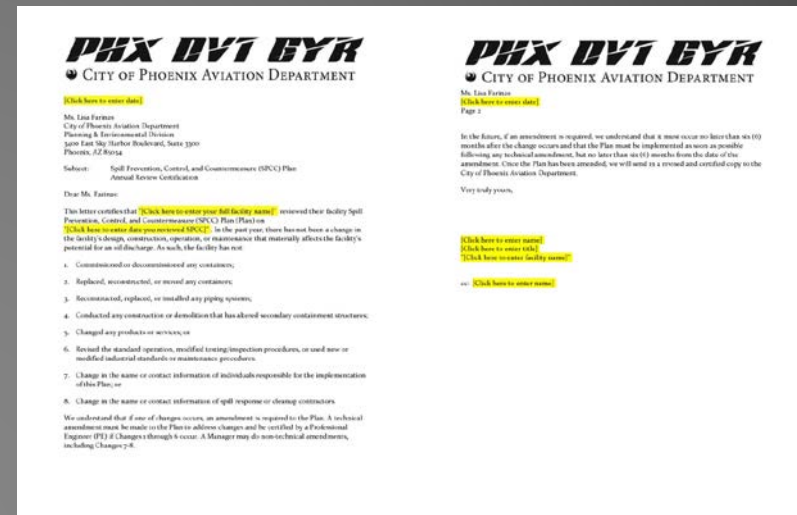
STORMWATER INSPECTIONS REQUIRED DOCUMENTATION - SPCC

- ▶ SPCC – Spill Prevention, Control and Countermeasure
- ▶ Required for Facilities with Cumulative:
 - ▶ 1,320 gallons Above Ground Storage, or
 - ▶ 42,000 gallons Underground Storage
- ▶ SPCC Plans are to be submitted to Aviation
- ▶ EPA has templates for SPCC plan preparation
- ▶ EPA allows certain facilities to self certify the SPCC plan



STORMWATER INSPECTIONS REQUIRED DOCUMENTATION - SPCC

- ▶ Review Plan Annually and Fill Out Review Certification Letter
- ▶ SPCC Training
 - ▶ Perform Annually
 - ▶ Aviation Department SWPPP Training is not adequate!
 - ▶ Check your SPCC Plan for requirements and resources
 - ▶ Cover at a minimum
 - ▶ Facility SPCC Plan
 - ▶ Known discharges or failures
 - ▶ Malfunctioning components
 - ▶ Precautionary measures



KUDOS

- ▶ Airport Employees and Pollution Prevention Team Members Eligible
- ▶ Exceptional Stormwater Compliance
- ▶ \$5 Gift Cards or airport goodies
- ▶ Winners in Stormwater Newsletter
- ▶ Examples:
 - ▶ Training Participation
 - ▶ Documentation in Order during CFIs
 - ▶ Developing Permanent Solutions
 - ▶ Knowledgeable Staff on SWPPP CMs

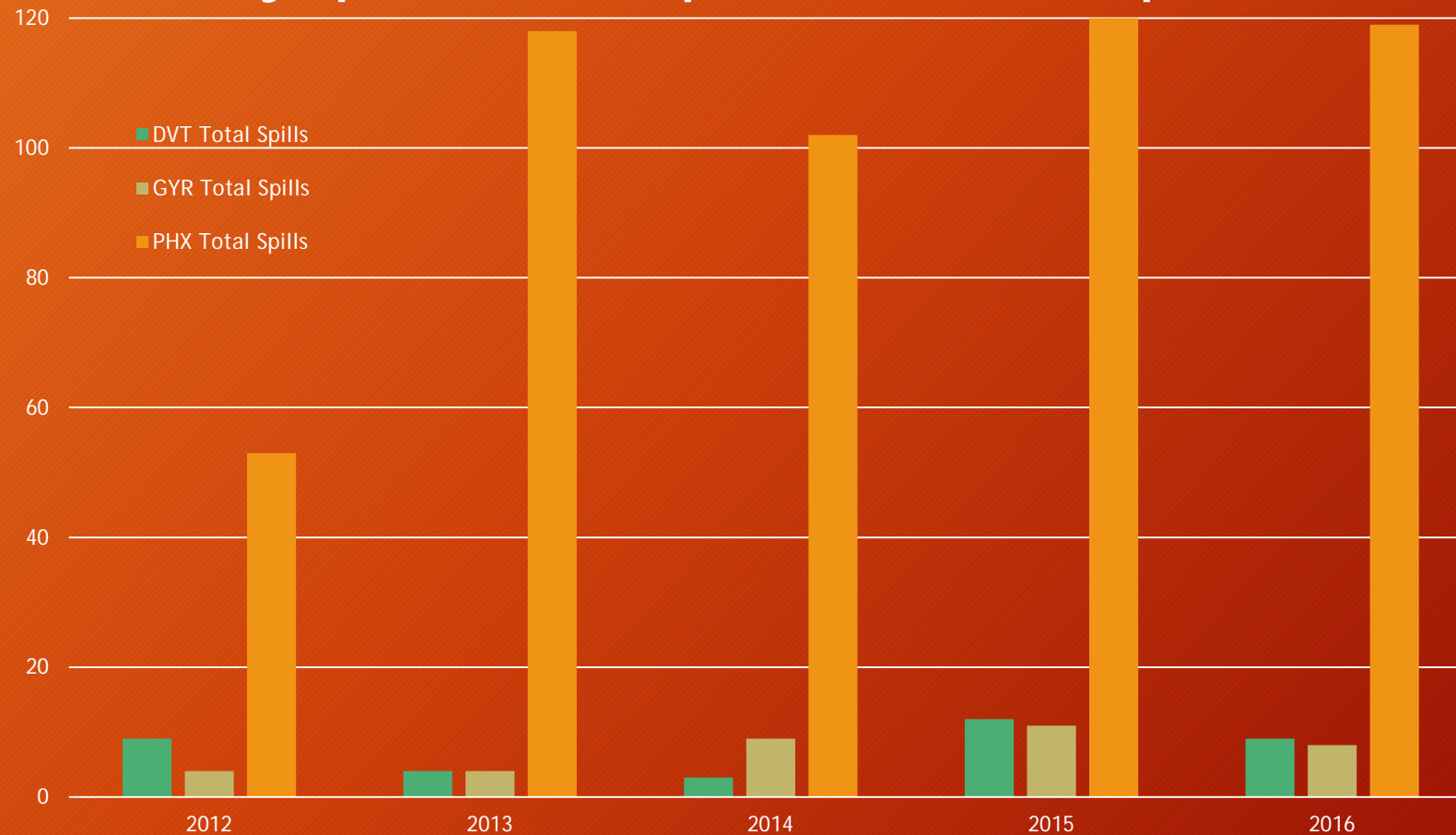




Trivia Question No. 6



How many spills were reported at the airport in 2016?





**CONTACT INFORMATION:
LISA FARIÑAS
ENVIRONMENTAL QUALITY SPECIALIST
CITY OF PHOENIX AVIATION DEPARTMENT
PLANNING & ENVIRONMENTAL DIVISION
CELL: 602-722-6173**