Total Facility Inspections Performed in Florida

Source: STCM, Feb 05

436,121 Total Inspections Performed
Petroleum Discharge Report Forms Received

32,769 Total Discharge Report Forms Received

Source: STCM, Feb 05
Post-1998 Petroleum Discharge Report Forms Received

Source: STCM, Feb 05

4992 Post-1998 Discharge Report Forms Received
Summary - Florida Cause of Leak Study
- Florida Contracted with County Inspectors to Review Release Sites and Document Information
- Completed Forms Sent to EPA for Data Entry & Analysis
- Various Quality Control Steps
- Current Status - EPA Report is ready for Peer Review
Invalid Files Include:

• Releasing from Bare Steel UST Systems
• Release From Non-Compliant Component
• Release of Old UST/AST Found at Closure
• Unknown Sources
Size of Study

- 2280 Release Files Reviewed
- 642 Valid Release Files
  - 512 UST Releases
  - 130 AST Releases
AST Results
Sources of Releases

Other Sources Include: Fuel Filters, Outlet Valve, and Human Spilling
Causes of Releases

- **Spill/Overfill**: 36%
- **Phys/Mech Damage**: 19%
- **Other**: 16%
- **Corrosion**: 9%
- **Loose Component**: 12%
- **Unknown**: 8%

Other Causes Include: Vandalism, Valve Failure, Contractor Accident, Other Human Error
Causes of Piping Release

- Corrosion: 26%
- Phys/Mech Damage: 29%
- Loose Component: 21%
- Other: 9%
- Unknown: 13%
- Puncture: 2%
Method of Detection

- Leak Detection: 22%
- Closure/Removal: 8%
- Other: 2%
- Visual/Olfactory: 68%
Success of Leak Detection

LD Detected 22%
LD Failed 8%
LD Unable, or Unknown 70%

LD Unable, or Unknown: Either the release came from a part of the system that a LD system was not designed to detect, or the inspector could not determine whether LD failed to detect.
Overfills and Piping
UST Results
Sources of Releases - USTs

- Turbine Pump: 10%
- Dispenser: 25%
- Piping: 23%
- Spill/Overfill in Fill Area: 19%
- Tank: 12%
- Other: 11%
- Tank Usage Versus Releases -

Clad Tanks Had Relatively Fewer Releases
Causes of Tank Releases:

- **Corrosion**: 16%
- **Puncture**: 27%
- **Unknown**: 14%
- **Other**: 13%
- **Phys/Mech Damage**: 22%
- **Loose Component**: 8%

Primary Cause of Steel Tank Release – Corrosion
Primary Cause of Fiberglass Tank Release - Puncture
Further Analysis Required to Determine Statistical Significance
- Causes of Piping Releases -

- Primary Cause of Steel Piping Release – Corrosion
- Primary Cause of Fiberglass Piping Release – Loose Component
- Primary Cause of Flexible Plastic Piping – Phys/Mech Damage
Summary of Causes - USTs

Other Releases Include: Delivery to Monitoring Well, Vehicle Accident, Improper Installation, Vandalism
LD Unable, or Unknown: Either the release came from a part of the system that a LD system was not designed to detect, or the inspector could not determine whether LD failed to detect.
Other Methods Include: Unscheduled TTT/LTT, Dispenser Upgrades, Maintenance Inspections, Water in Tank
Piping, Dispensers & Spill Buckets
Florida Leak Autopsy Study

- Field-verified, Quality assurance
- County Tanks Inspectors Complete Forms
- Continuation of Florida Cause of Leak Study
- Data compared to Forms submitted by tank owners
<table>
<thead>
<tr>
<th>Material</th>
<th>Other Attributes</th>
<th>Ancillary Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Galvanized Steel</td>
<td>Sacrificial Anodes</td>
<td>Spill Containment Bucket</td>
</tr>
<tr>
<td>Fiberglass</td>
<td>Impressed Current System</td>
<td>No Spill Containment</td>
</tr>
<tr>
<td>Composite</td>
<td>Internal Lining</td>
<td>Overfill Protection</td>
</tr>
<tr>
<td>Unprotected Steel</td>
<td>Single Wall</td>
<td>Ball Check Valve</td>
</tr>
<tr>
<td>Other Approved</td>
<td>Double Wall (same material)</td>
<td>Flow Shut-Off</td>
</tr>
<tr>
<td>Concrete</td>
<td>Double Wall (different material)</td>
<td>Tight Fill</td>
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<tr>
<td>Polyethylene</td>
<td>Secondary Containment with a liner</td>
<td>Alarm System</td>
</tr>
<tr>
<td>Unknown</td>
<td>Other Approved (Tank Bladders, etc.)</td>
<td>Remote Fill</td>
</tr>
<tr>
<td>Other (Specify)</td>
<td>Compartmented</td>
<td>No Overfill Protection</td>
</tr>
<tr>
<td></td>
<td>External Liner</td>
<td>Other (Specify)</td>
</tr>
</tbody>
</table>
Florida Leak Autopsy Forms 1 Jan 03 – 1 Mar 05

- **859 Forms**
  
  - **Valid AST Discharges**
    - 34%
  
  - **Invalid AST Forms**
    - 2%
  
  - **Forms under investigation**
    - 1%
  
  - **Invalid UST Forms**
    - 33%
UST Sources

- Spill Buckets: 31%
- Dispensers: 16%
- Piping: 18%
- Tanks: 10%
- Flex connectors & Swing joints: 4%
- Line Leak Detectors: 2%
- Overfills: 5%
- Submersible Turbine Pumps: 4%
- Fill Pipes: 3%
- Vehicles, Vapor recovery, vent lines, vandalism and shear valves: 6%
- Dispenser & Piping Sumps: 1%

305 Valid Forms
Piping – 18%
Double-wall piping – 9%

- Double-Wall Fiberglass Piping: 4
- Single-Wall Fiberglass Piping: 15
- Single-Wall Protected Steel Piping: 10
- Double-Wall Thermoplastic Flexible Piping: 24
- Other Single-Wall Pipe – (Copper): 3

Total Piping: 54
Sources - >2003

- Overfills/Spills/Spill Buckets: 39%
- Piping: 22%
- Dispensers: 18%
- Submersible Turbine Pumps: 4%
- Other: 13%
- Tanks: 10%

Sources - <2003

- Overfills/Spills/Spill Buckets: 19%
- Piping: 23%
- Dispensers: 25%
- Submersible Turbine Pumps: 10%
- Other: 11%
- Tanks: 12%
Combined Data

- Overfills/Spills/Spill Buckets: 26%
- Piping: 23%
- Submersible Turbine Pumps: 8%
- Dispensers: 21%
- Tanks: 11%
- Other: 10%

827 Valid UST Forms
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