UST/AST Inspection Findings

Presented by Brian Pottebaum
R&A Inspections

UST Compliance Inspections

✓ MO DNR/PSTIF Contract with R&A

✓ Inspections conducted on a 3 cycle
R&A Inspections

1. Sites selected for inspection and provided to R&A.
2. Inspection Data imported into R&A database
3. Notification letters sent out to owners/operators (within 60 days)
4. Inspector is dispatched and UST site is inspected
5. Inspector provides inspection data, photographs, and report to office staff
6. Inspection data and photographs are reviewed
7. Inspection report is processed and mailed to site owner inspection
8. Inspection report/photos/documents provided to MO DNR and PSTIF based on specific timing criteria.
R&A Inspections

UST Inspection Documentation

- Cover Page
- Inspection Report
- Response Form (if items to correct)
September 25, 2018

Re: [Redacted]

Dear Sir or Madam:

An inspection of your petroleum storage tank system at the above site was conducted on [Redacted]. Your inspection report is enclosed.

Your inspection report identifies issues that are considered serious and require immediate attention. Please address these issues, and then complete the enclosed Inspection Response Form to document your actions. You must return this form within 15 days of the date on this letter.

Your inspection report identifies other issues. You have 30 days to address these issues. When you have done so, please return the enclosed Inspection Response Form to document that all issues have been corrected.

Your inspection report identifies items intended to assist you in properly operating and maintaining your tank system. These items are listed as “Recommendations.”

Return your response form to:

Riadco & Associates
Attention: Missouri Inspection Program
2804 - 13th Street, PO Box 7628
Urbandale, IA 50323

A copy of the inspection report is being provided to the Petroleum Storage Tank Insurance Fund (PSTIF) and the Missouri Department of Natural Resources (MDNR). Failure to adequately respond may result in cancellation of your insurance coverage by the PSTIF and/or enforcement action by the MDNR.
# R&A Inspections

## UST – Inspection Report

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### Missouri UST Inspection Report

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<th>Facility Name</th>
<th>State Issued</th>
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<th>Tank Lock</th>
<th>Spill Equipment</th>
<th>Overfill Protection</th>
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<th>Delivery System</th>
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</tr>
<tr>
<td>1.2 Inspected</td>
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<td>No</td>
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<table>
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<tr>
<td>1.1 Inspected</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1.2 Inspected</td>
<td>No</td>
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</table>

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### Service Issues

- **Service Issues:**
  - [ ] 1.
  - [ ] 2.
  - [ ] 3.
  - [ ] 4.

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### Overfill Prevention

- **Overfill Prevention:**
  - [ ] 1.
  - [ ] 2.
  - [ ] 3.
  - [ ] 4.

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### Other Issues

- **Other Issues:**
  - [ ] 1.
  - [ ] 2.
  - [ ] 3.
  - [ ] 4.

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### Recommendations

- **Recommendations:**
  - [ ] 1.
  - [ ] 2.
  - [ ] 3.
  - [ ] 4.
R&A Inspections

UST – Response Form

- Due Date (Serious = 15 day/Other = 60 day)
  - Starts day report is finalized (printed)
- Owner/Operator MUST sign
- Provide documentation (if requested)

NOTE: After “Due Date” expires, responses tracked by DNR or PSTIF respectively.
R&A Inspections

UST – Response Form

- Documentation
  - Service Company Work Order
  - Service Company Invoice
  - Part Purchase Invoice
  - Other approved documentation

SERIOUS ISSUES NOTED - Complete by Due Date Indicated

Due Date: 10/10/2018
Corrected: [ ]
Owner/Operator: [ ]
By: [ ]
Service Co.: [ ]
(Print Company): [ ]

10/10/2018
Overfill Prevention, Disabled/Damaged/Removal: [ ]
Please PROVIDE DOCUMENTATION that overfill prevention in specified tank(s) is operating in accordance with 10 CSR 29-3.030 - No overfill prevention present on Diesel tank.

Owner/Operator Signature: __________________________ Date: __________________________
R&A Inspections

UST – Response Form

• Return Documentation
  • USPS
  • Fax
  • Email

TO: Rounds & Associates
2894 - 106th Street, PO Box 7628
Urbandale, IA 50323
Phone: (515) 334-3010
Toll-Free: (855) 808-8686
Fax: (515) 334-3013
E-mail: moinspections@roundsassociates.com
R&A Inspections

AST Compliance Inspections

✓ MO Weights & Measures/PSTIF contract

✓ Inspections conducted on a 3 cycle
November 8, 2018

Dear Sir or Madam:

An inspection of your petroleum storage tank system at the above site was conducted on November 8, 2018. Your inspection report is enclosed.

Your inspection report identifies issues that are considered serious and require immediate attention. Please address these issues and then complete the enclosed Inspection Response Form to document your actions. You must return this form within 15 days of the date on this letter to avoid the risk of cancellation of your insurance coverage. Please mail it to:

Rounds & Associates
Attention: Missouri Inspection Program
2894 - 106th Street, PO Box 7628
Urbandale, IA 50323

Your inspection report also identifies other issues. You have 60 days to address these issues. If you have any questions about the inspection or the information on the inspection report, please contact us at (515) 334-3610 or toll-free at (855) 888-8886. Thank you for your cooperation.

Sincerely,

Brian Wagger
Vice President, Inspection Services
Rounds & Associates
R&A Inspection Findings

Progress on current inspection contract:

**USTs**
- 385 inspections completed as of 11/26/18
- 892 total 2018-2019 inspections

**ASTs**
- 192 inspections completed as of 11/26/18
- 539 total 2018-2019 inspections

NOTE: Just over 40% complete.
2017 R&A Inspection Findings

Previous Contract:

**USTs**
- 1422 inspections completed in 2017-2018

**ASTs**
- 341 inspections completed in 2017-2018

NOTE: Used this set of complete data for “Top Ten” Lists
2017 UST “Top Ten” Issues

1. Spill Containment Insufficient
2. Piping Sump Contains Liquid/Debris
3. Dispenser Sump Contains Liquid/Debris
4. Secondary Containment, Inadequate (Dispenser)
5. Dispenser Filters
6. ATG in Alarm
7. (2-way tie)
   - Secondary Containment, Unable to Confirm Status (Piping Sump)
   - Spill Containment, Damaged or Missing
8. Secondary Containment, Inadequate (Piping Sump)
9. Metal in Contact with Soil/Liquid (at tank top/transition area)
10. Leak in Fuel System at Dispenser (no containment)
UST

1. Spill Containment Insufficient

- Approximately 19% of issues cited
- “Other” issue (60 Day)

10 CSR 26-2.030

- PURPOSE: *This rule is designed to prevent releases during routine filling of the underground storage tank with product.*
- Sumps (containments) must be maintained and kept free of debris, liquid and ice at all times.
- Regulated substances spilled into any spill catchment basin, turbine sump, transition/intermediate sump or under-dispenser containment shall be immediately removed.
Spill Containment Insufficient
Approximately 10% of issues cited

“Recommendation” issue (No Due Date)

- The owner installed secondary containment to prevent releases from impacting the environment. We advise them when the containment is impacted by liquid/debris as the containment are not designed for long term exposure to liquids/fuels. Liquid/Fuel can cause corrosion issues or affect components adversely if not removed in a timely manner.

- In addition if liquid can get into the containments more than likely fuel can get out.
Piping Sump Contains Liquid/Debris
Approximately 7% of issues cited

“Recommendation” issue (No Due Date)

- The owner installed secondary containment to prevent releases from impacting the environment. We advise them when the containment is impacted by liquid/debris as the containment are not designed for long term exposure to liquids/fuels. Liquid/Fuel can cause corrosion issues or affect components adversely if not removed in a timely manner.
- In addition if liquid can get into the containments more than likely fuel can get out.
Dispenser Sump Contains Liquid/Debris
UST
4. Secondary Containment Inadequate (Dispenser)

➤ Damaged or Compromised
➤ Approximately 5% of issues cited
➤ “Recommendation” issue (No Due Date)

10 CSR 26-2.020(1)(E)
• Prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances.
• Not sealed tight, allowing liquid in/out of containment.
  – Product/conduit entry boots damaged
  – Clamps missing/loose
  – Cracks in containment housing
Secondary Containment Inadequate (Dispenser)
Secondary Containment Inadequate (Dispenser)
5. Dispenser Filter (Maintenance)

- Approximately 4% of issues cited
- In service 2+ years
- Damaged / Rusted
- Incorrect application
- Incorrect disposal
- “Recommendation” issue (No Due Date)

- Prevent filter failure or related dispensing issues.
- Industry advises annual filter changes, or less on high volume.
- Installed per manufacturer; NEVER with pipe wrench
- Gasoline/Ethanol = 10 micron; Diesel/Bio Blends = 30 micron
Dispenser Filter Issues
Approximately 3.9% of issues cited

“Other” issue (60 Day)

10 CSR 26-2.043(1)(E)

- **PURPOSE**: This rule contains the requirements that specific underground storage tank leak detection methods must meet.
- ATG displaying alarm. Recommend contact service company to correct issue and verify system is operating according to manufacturing specifications. Also, the situation must be further investigated to ensure a petroleum release has not occurred.
ATG in Alarm
ATG in Alarm

OCT 20, 2013  2:25 PM

SYSTEM STATUS REPORT
T 1: PERIODIC TEST FAIL
T 2: PERIODIC TEST FAIL
L 2: FUEL ALARM
Approximately 3.5% of issues cited

“Recommendation” issue (No Due Date)

- Unable to gain access to or inspect the specified sub/piping sump.
- Recommend address the specified issue(s) (e.g. liquid removal, access sump lid) and confirm the containment and it’s components are installed and operating according to manufacturer’s specifications.
- Document that items are corrected, i.e. Photograph or assessment
Secondary Containment, Unable to Confirm Status (Piping Sump)
Secondary Containment, Unable to Confirm Status (Piping Sump)
Approximately 3.5% of issues cited
“Serious” issue (15 Day)
Documentation Required

10 CSR 26-2.030

- **PURPOSE**: This rule is designed to prevent releases during routine filling of the underground storage tank with product.
  - Punctures
  - Cracks/Splits
  - Separations
  - Corrosion
Spill Containment, Damaged or Missing

- Punctures
Spill Containment, Damaged or Missing

- Cracks/Splits
Spill Containment, Damaged or Missing

- Cracks/Splits
Spill Containment, Damaged or Missing

- Separation
Spill Containment, Damaged or Missing

- Corrosion
UST
8. Secondary Containment, Inadequate (Piping Sump)

- Damaged or Compromised.
- Approximately 3.4% of issues cited
- “Recommendation” issue (No Due Date)

10 CSR 26-2.020(1)(E)

- Prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances.
- Not sealed tight, allowing liquid in/out of containment.
  - Product/conduit entry boots damaged
  - Clamps missing/loose
  - Cracks in containment housing
Secondary Containment, Inadequate (Piping Sump)
Secondary Containment, Inadequate (Piping Sump)
UST
9. Metal in Contact with Soil/Liquid (at tank top/transition area)

- Approximately 3.4% of issues cited
- “Other” issue (60 Day)
- Documentation Required

10 CSR 26-2.031(1)(A)

- Submersible pumps (with metal pipe connections or components) above tanks in direct contact with soil/liquid must be isolated or cathodically protected.
  - Isolation boots/sleeves
  - Sacrificial Anode bags/spikes (magnesium/zinc)
  - Impressed
Metal in Contact with Soil/Liquid (at tank top/transition area)
Metal in Contact with Soil/Liquid (at tank top/transition area)
Metal in Contact with Soil/Liquid (at tank top/transition area)
Metal in Contact with Soil/Liquid (at tank top/transition area)
UST
10. Leak in Fuel System at Dispenser (no containment)

- Approximately 3.2% of issues cited
- “Serious” issue (15 Day)
- Documentation Required

10 CSR 26-2.030
- Extensions will never be granted
- Contained leak is a “Other” issue (60 Day)
- Advise follow up check by owner after repair
Dispenser Without Containment
Leak in Fuel System at Dispenser

<table>
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<th>Size/Frequency of Leak</th>
<th>Gallons per...</th>
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<tr>
<td></td>
<td>Day</td>
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<tr>
<td>One Drop Per Second</td>
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<tr>
<td>Two Drops Per Second</td>
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Leak in Fuel System at Dispenser
Leak in Fuel System at Dispenser
UST Inspection Findings Summary

• Liquid/Debris –
  – Spill Containment Insufficient – 19%
  – Piping Sump Contains Liquid/Debris – 10%
  – Dispenser Sump Contains Liquid/Debris – 7.4%
  – Secondary Containment, Unable to Confirm Status (piping) – 3.5%
  – Metal in Contact with Soil/Liquid (tank top/transition) – 3.4%

• Compromised Containment –
  – Secondary Containment Inadequate (dispenser) – 5%
  – Spill Containment, Damaged or Missing – 3.5%
  – Secondary Containment, Inadequate (piping) – 3.4%

• Leak in Fuel System at Dispenser (no containment) – 3.2%
• ATG Alarm – 3.9%
2017 AST “Top Ten” Deficiencies

1. Metal in Contact with Soil/Backfill
2. Leak in Fuel System at Dispenser (no containment)
3. Tank Overfill Prevention
4. Spill Containment Insufficient
5. AST Containment, Open Drain Valve
6. Dispenser Sump Contains Liquid/Debris
7. Secondary Containment, Inadequate (Dispenser)
8. Leak in Fuel System at Tank (with containment)
9. Dispenser Hoses Deteriorating
10. Leak in Fuel System at Dispenser (with containment)
1. Metal in Contact with Soil/Backfill

- Approximately 22% of issues cited
- “Recommendation” issue (No Due Date)

NFPA 30 (1996) 2-4.3 and
NFPA 30A (1996) 2-4.8

- Metal fuel piping or fittings is in direct contact with soil. Recommend isolating metal piping from soil or cathodically protecting (anode).
Metal in Contact with Soil/Backfill
Metal in Contact with Soil/Backfill
Approximately 12% of issues cited
“Serious” issue (15 days)
Documentation required

2 CSR 90-30.050(7)
- Leak/weep not occurring inside or over containment
- Provide documentation of repair to the leaking fuel system at the specified piping area or dispensing unit to document compliance.
Leak in Fuel System at Dispenser (no containment)
Leak in Fuel System at Dispenser (no containment)
Leak in Fuel System at Dispenser (no containment)
Leak in Fuel System at Dispenser (no containment)
Approximately 11% of issues cited

“Other” issue (60 days)

2 CSR 90-30.050(27) and
NFPA 30A (1996) 2-4.6.1

- Overfill device did not appear to meet requirements. Provide
documentation that tank overfill prevention device is installed/adjusted to
meet guidelines.
Tank Overfill Prevention
Tank Overfill Prevention
Tank Overfill Prevention
Tank Overfill Prevention
Tank Overfill Prevention
Approximately 7% of issues cited
“Recommendation” issue (No Due Date)

2 CSR 90-30.050(6)
• Remove and properly dispose of any liquid and debris in the delivery spill containment.
Spill Containment Insufficient
Spill Containment Insufficient
Approximately 6% of issues cited
“Serious” issue (15 Day)
Documentation required

2 CSR 90-30.050(30)
• The dike drain valve must be closed at all times to prevent product and contaminated liquid from escaping containment in the event of a spill or leak.
AST Containment, Open Dike Drain Valve
AST Containment, Open Dike Drain Valve
6. Dispenser Sump Contains Liquid/Debris

- Approximately 5.5% of issues cited
- “Recommendation” issue (No Due Date)

- Prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances.
- Inspection/Corrosion.
- Recommend remove and properly dispose of liquid and debris in dispenser sump.
Dispenser Sump Contains Liquid/Debris
Dispenser Sump Contains Liquid/Debris
Approximately 5% of issues cited

“Recommendation” issue (No Due Date)

- Containment not sealed tight allowing liquid in/out of containment system.
- Recommend addressing the specified issue so that the secondary containment is tight and operating according to manufactures specifications.
Secondary Containment Inadequate (Dispenser)
Secondary Containment Inadequate (Dispenser)
Approximately 4.1% of issues cited

“Other” issue (60 Day)

Documentation required

2 CSR 90-30.050(7)

- Provide documentation of repair to the leaking fuel system at the specified piping area or dispensing unit to document compliance.
- Considered “contained” if inside proper secondary containment, i.e. Dike.
- The dike drain valve must be closed at all times to prevent product and contaminated liquid from escaping containment in the event of a spill or leak.
Leak in Fuel System at Tank
Leak in Fuel System at Tank
Leak in Fuel System at Tank
Approximately 3.9% of issues cited

“Recommendation” issue (No Due Date)

Dispenser maintenance including hoses is important:
  - Prevent releases
  - Customer safety and satisfaction
Dispenser Hoses Deteriorating
Approximately 3.8% of issues cited

“Other” issue (30 Day)

Documentation required

- Leak/weep occurring inside or over containment
- Provide documentation of repair to the leaking fuel system at the specified piping area or dispensing unit to document compliance.
Leak in Fuel System at Dispenser
Leak in Fuel System at Dispenser

Under Dispenser Containment
AST Inspection Findings Summary

- Liquid/Debris –
  - Spill Containment Insufficient – 7%
  - Dispenser Sump Contains Liquid/Debris – 5.5%

- Leak in Fuel System -
  - Leak in Fuel System at Dispenser (no containment) – 12%
  - Leak in Fuel System at Tank (with containment) – 4.1%
  - Leak in Fuel System at Dispenser (no containment) – 3.8%

- Metal in Contact with Soil/Backfill – 22%
- Tank Overfill Prevention – 11%
- AST Containment, Open Drain Valve – 6%
- Secondary Containment, Inadequate (Dispenser) – 5%
- Dispenser Hoses Deteriorated – 3.9%
Questions?