FINAL

PERFLUORINATED COMPOUNDS PRELIMINARY ASSESSMENT
SITE VISIT REPORT

WISCONSIN AIR NATIONAL GUARD
TRUAX FIELD
DANE COUNTY REGIONAL AIRPORT
MADISON, WISCONSIN

Prepared For:

Headquarters Air National Guard
Joint Base Andrews, Maryland

December 2015
FINAL

PERFLUORINATED COMPOUNDS PRELIMINARY ASSESSMENT
SITE VISIT REPORT

WISCONSIN AIR NATIONAL GUARD
TRUAX FIELD
DAVE COUNTY REGIONAL AIRPORT
MADISON, WISCONSIN

Prepared For:

Headquarters Air National Guard
Joint Base Andrews, Maryland

Prepared By:

BB&E, Inc.
December 2015
## TABLE OF CONTENTS

1.0 INTRODUCTION .................................................................................................................. 5

1.1 Hydrogeologic Setting ........................................................................................................ 6

2.0 FIRE TRAINING AREAS ................................................................................................. 7

3.0 NON-FIRE TRAINING AREAS ....................................................................................... 9

3.1 AOC Description, Operational History, and Waste Characteristics ................................. 9

3.1.1 Building 430 (Current Fire Station) ................................................................. 9

3.1.2 Building 403 Nozzle Test Area 1 ........................................................................ 10

3.1.3 Building 403 Nozzle Test Area 2 ........................................................................ 10

3.1.4 Former Building 403 (Former Fire Station) .................................................. 10

3.1.5 Hangar 400 ........................................................................................................ 10

3.1.6 Hangar 406 ........................................................................................................ 11

3.1.7 Hangar 414 ........................................................................................................ 11

3.1.8 Fuel Spill Ditch ................................................................................................. 12

3.1.9 Building 503 Parking Lot ................................................................................ 12

3.1.10 Building 510 (Supply) ................................................................................... 13

3.2 Pathway and Environmental Hazard Assessment ......................................................... 13

3.2.1 Groundwater ...................................................................................................... 13

3.2.1.1 Water Wells ............................................................................................... 14

3.2.2 Soil ...................................................................................................................... 14

3.2.3 Sediment ........................................................................................................... 15

3.2.4 Surface Water ................................................................................................. 15

4.0 FINDINGS AND CONCLUSIONS ................................................................................. 17

5.0 REFERENCES .................................................................................................................. 21
TABLE OF CONTENTS (CONTINUED)

LIST OF TABLES

Table 1 Preliminary Assessment Report Summary and Recommendations

LIST OF FIGURES

Figure 1 Site Location Map
Figure 2 Site Features and Potential AOCs

LIST OF APPENDICES

Appendix A Photo Documentation
Appendix B Records of Communication
Appendix C Supporting Documentation

C-1 Groundwater Contour Maps
C-2 Base Property Boundaries
C-3 Fire Department Vehicle and AFFF Inventory
C-4 Base Sanitary Sewer System Map
C-5 Fire Department Vehicle AFFF Nozzle Testing Procedures
C-6 AFFF Fire Suppression System Testing and Maintenance Logs – Hangars 400 and 414
C-7 1981 Fuel Spill Incident Report and Location Map
C-8 EDR One-Mile Radius Water Wells Map
C-9 Base Storm Sewer System Map
C-10 EDR Potential Environmentally Sensitive Areas Map
# LIST OF ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFFF</td>
<td>Aqueous Film Forming Foam</td>
</tr>
<tr>
<td>AOC</td>
<td>Area of Concern</td>
</tr>
<tr>
<td>ARNG</td>
<td>Army National Guard</td>
</tr>
<tr>
<td>BB&amp;E</td>
<td>BB&amp;E, Inc.</td>
</tr>
<tr>
<td>bgs</td>
<td>below ground surface</td>
</tr>
<tr>
<td>CAD</td>
<td>computer-aided design</td>
</tr>
<tr>
<td>FD</td>
<td>fire department</td>
</tr>
<tr>
<td>ft</td>
<td>feet</td>
</tr>
<tr>
<td>FTA</td>
<td>Fire Training Area</td>
</tr>
<tr>
<td>gal</td>
<td>gallons</td>
</tr>
<tr>
<td>GIS</td>
<td>geographical information system</td>
</tr>
<tr>
<td>HEF</td>
<td>high expansion foam</td>
</tr>
<tr>
<td>IRP</td>
<td>Installation Restoration Program</td>
</tr>
<tr>
<td>MATC</td>
<td>Madison Area Technical College</td>
</tr>
<tr>
<td>OWS</td>
<td>oil water separator</td>
</tr>
<tr>
<td>PA</td>
<td>Preliminary Assessment</td>
</tr>
<tr>
<td>PFCs</td>
<td>Perfluorinated Compounds</td>
</tr>
<tr>
<td>PFOA</td>
<td>perfluorooctanoic acid</td>
</tr>
<tr>
<td>PFOS</td>
<td>perfluorooctane sulfonate</td>
</tr>
<tr>
<td>PHAL</td>
<td>Provisional Health Advisory Levels.</td>
</tr>
<tr>
<td>POL</td>
<td>petroleum, oil, and lubricant</td>
</tr>
<tr>
<td>ROD</td>
<td>Record of Decision</td>
</tr>
<tr>
<td>USEPA</td>
<td>United States Environmental Protection Agency</td>
</tr>
<tr>
<td>UST</td>
<td>underground storage tank</td>
</tr>
<tr>
<td>WIANG</td>
<td>Wisconsin Air National Guard</td>
</tr>
<tr>
<td>WDNR</td>
<td>Wisconsin Department of Natural Resources</td>
</tr>
</tbody>
</table>
(This page intentionally left blank)
1.0 INTRODUCTION

A preliminary assessment (PA) site visit was conducted by BB&E, Inc. (BB&E) from August 10-11, 2015 for the Wisconsin Air National Guard (WIANG), at Truax Field, Dane County Regional Airport, Madison, Wisconsin (Base). The site location is shown on Figure 1. The purpose of the visit was to identify potential sites of historic environmental releases of perfluorinated compounds (PFCs), specifically from Aqueous Film Forming Foam (AFFF) usage and storage, as shown on Figure 2. Prior to the site visit, BB&E conducted research of any documented Fire Training Areas (FTAs) in operation since 1970, or any other use or release of AFFF in accordance with the Final Perfluorinated Compound (PFC) Preliminary Assessment Work Plan (BB&E, 2015).

Individuals contributing to this PA effort included the following:

- Lt. Matthew Shaw – WIANG, Base Environmental Officer
- Susan Gustke – WIANG, State Environmental Officer
- Sgt. Gary Peck – WIANG, Fire Chief
- Maj. Daniel Statz – WIANG, Base Civil Engineer
- Chief Martin – WIANG, Facilities Manager
- Maj. Dunlap – WIANG, GIS/CAD contact
- Mr. Bradley Stepp - Army National Guard Logistics Officer

Sections 2.0 and 3.0 outline the potential PFC sources identified on the Base property during the records review and site visit and Section 4.0 provides conclusions and recommendations; references are listed in Section 5.0. Representative photos of the subject sites taken during the site visit are attached as Appendix A, records of communication are included in Appendix B, and other supporting documentation is provided in Appendix C.
1.1 Hydrogeologic Setting

Hydrogeologic information was obtained from the 2013 Final Record of Decision (ROD) report (WDNR, 2013).

Regionally, groundwater is found in the unconsolidated glacial deposits and underlying bedrock formations including sandstone of the Trempealeau Group, the deeper Tunnel City Group, and the underlying Elk Mound Group. These bedrock aquifers comprise the principal water supply aquifers in Dane County. The Mt. Simon Sandstone underlying the glacial deposits in the vicinity of the Base is the lowermost formation of the Elk Mound Group.

Based on information collected during investigation activities at the installation restoration program (IRP) sites, monitoring wells within the water table zone indicate shallow groundwater flow is generally toward the south and southeast. The water table at the Base is generally encountered at depths of 5 to 10 feet below ground surface (bgs). The groundwater flow gradients calculated from the 2013 IRP investigations indicate groundwater flow velocities of 0.5 to 0.9 foot per day. Groundwater flow patterns at the Base are included in Appendix C-1.

There are currently no known drinking water supply wells at the Base and the shallow groundwater system in the area of the Base is not used as a source of drinking water. The Base is provided water via the municipal water distribution system operated by the City of Madison. The City of Madison obtains its public water supply from the Mt. Simon Sandstone from a network of pumping wells. The nearest municipal water supply wells are located approximately 1.5 miles southwest of the Base. Further discussion of water wells is included in Section 3.2.1.1 of this report.

Surface water drainage from the Base ultimately drains west into Starkweather Creek, which surrounds the Base on the north, west, and south sides. Starkweather Creek empties into Lake Monona approximately 2 miles to the south. Surface water flow around the Base is directed by man-made ditches and culverts which connect to Starkweather Creek. Because much of the Base is paved, infiltration and evapotranspiration of surface water are negligible.
2.0  FIRE TRAINING AREAS

Based on this PA investigation, there is no evidence that a FTA was located within the property boundaries of the Base. According to Base personnel, the FTA at Madison Area Technical College (MATC) has historically been used by the WIANG Fire Department (FD). The MATC is located south of the Base.
3.0 NON-FIRE TRAINING AREAS

Non-FTA Areas of Concern (AOCs) are sites where AFFF has been released and may include crash sites, hangars, fuel spill areas, hazardous waste storage facilities, firefighting equipment testing areas, etc. The following section includes a description of any non-fire training AOCs, operational history, waste characteristics, and pathway evaluations.

3.1 AOC Description, Operational History, and Waste Characteristics

Records review focused on the potential PFC sources within the Base property boundaries. Current Base property boundaries, including leased land, are attached as Appendix C-2. The Army National Guard (ARNG) leases land from the ANG. The ARNG was questioned during the PA site visit, and confirmed that AFFF has not been used for any of their operations.

The following are the Non-FTA AOCs that were identified during this PA Investigation. Appendix A contains photos of these areas. The types of AFFF used and stored in the areas specified below included the following: National Foam Aer-O-Water 3EM (3%), ANSULITE (3%), 3M (3%), and Chemguard (3%).

3.1.1 Building 430 (Current Fire Station)

AFFF has been used by the WIANG FD for at least 20 years, and has been stored in Building 430 since it was built, circa 1995. Currently, there are approximately 471 gallons (gal) of AFFF carried in FD trucks and approximately 821 gal of AFFF serving as a backup supply, stored in the fire station. AFFF is transferred to vehicles within the fire station via overhead fill. Also, FD vehicles are washed within the fire station or the outside truck bays when necessary. There are trench drains located in the fire station and downgradient of the truck bays; therefore, any AFFF releases due to vehicle washing would be captured by the trench drains, which discharge into the sanitary sewer system.

FD-specific AFFF and vehicle inventories are included in Appendix C-3. The Base provided a sanitary sewer system map during the PA site visit, included as Appendix C-4.
3.1.2  **Building 403 Nozzle Test Area 1**

The AFFF nozzle systems on FD vehicles have been tested every six months. Nozzle tests are conducted in the grassy areas on the northwest and southwest (see Section 3.1.3) sides of Building 430. Any AFFF released in porous green spaces has the potential to seep into the subsurface and groundwater.

Foam testing procedures for FD vehicles are included in Appendix C-5. After foam is released, the area is typically watered down.

3.1.3  **Building 403 Nozzle Test Area 2**

The AFFF nozzle systems on FD vehicles have been tested every six months. Nozzle tests are conducted in the grassy areas on the northwest (see Section 3.1.2) and southwest sides of Building 430. Any AFFF released in porous green spaces has the potential to seep into the subsurface and groundwater.

Foam testing procedures for FD vehicles are included in Appendix C-5. After foam is released, the area is typically watered down.

3.1.4  **Former Building 403 (Former Fire Station)**

Prior to relocation to Building 430, the FD was stationed in Building 403, which was located southwest of Building 400. Building 403 was demolished in 1995/1996. An oil/water separator (OWS) and associated underground storage tank (UST) were also removed during demolition; no contamination was reported during removal (Leidos, 2015). According to Base personnel, AFFF has been in use since at least 1988 and was stored in Former Building 403. There are no records of AFFF nozzle testing from this time period.

3.1.5  **Hangar 400**

Although the installation date of the AFFF fire suppression system is unknown, Hangar 400 was equipped with an AFFF fire suppression system until approximately 2009, when the system was retrofitted for use of high expansion foam (HEF). According to Base personnel, hangar fire suppression systems have been tested annually; foam is discharged every other year during testing. No records of accidental AFFF releases exist. Any AFFF releases during testing or
accidental release within the hangar would have been routed to the trench drains that historically led to an OWS which then discharged into the sanitary sewer system. The OWS was removed in 2009; no contamination was observed during removal (Leidos, 2015).

HEF is currently stored in the mechanical room of Hangar 400. According to Base personnel, AFFF may have been stored in the mechanical room prior to the switch to HEF. Floor drains were present which likely discharge to the sanitary sewer system.

Records of AFFF fire suppression system testing for Hangar 400 were obtained during the PA site visit, and are included as Appendix C-6.

3.1.6 **Hangar 406**

Although the installation date of the AFFF fire suppression system is unknown, Hangar 400 was equipped with an AFFF fire suppression system until approximately 2006, when the system was retrofitted for use of HEF. According to Base personnel, hangar fire suppression systems have been tested annually; foam is discharged every other year during testing. No records of accidental AFFF releases exist. Any AFFF releases during testing or accidental release within the hangar would have been routed to the trench drains which then discharged into the sanitary sewer system.

HEF is currently stored in the mechanical room of Hangar 406. According to Base personnel, AFFF may have been stored in the mechanical room prior to the switch to HEF. Floor drains were present which likely discharge to the sanitary sewer system.

There were no records available for AFFF fire suppression system testing at Hangar 406.

3.1.7 **Hangar 414**

Hangar 414 has been equipped with an AFFF fire suppression system since 1994. According to Base personnel, hangar fire suppression systems have been tested annually; foam is discharged every other year during testing. No records of accidental AFFF releases exist. Any AFFF releases during testing or accidental release within the hangar would have been routed to the trench drains which discharge into the sanitary sewer system.
Several records of testing and maintenance of the AFFF fire suppression system for Hangar 414 are included in Appendix C-6.

### 3.1.8 Fuel Spill Ditch

On March 6, 1981, approximately 2,000 gal of JP-4 jet fuel spilled due to an overflow during refilling at the petroleum, oil, and lubricant (POL) pump house (Building 405). In response to the spill an existing drainage ditch (about 100 feet long) next to the spill was dammed off (ditch located between Hangars 400 and 414). The fire department foamed the fuel and flushed it toward the ditch, where it soaked into the ground and was covered with straw. By April 9, 1981, as directed by the Wisconsin Department of Natural Resources (WDNR), the affected soil was removed to a depth of approximately 6 ft in the ditch and to the limit of odor detection on the ditch side slopes (WDNR, 2013).

The type of foam used during the 1981 fuel spill is not specified on the incident report (Appendix C-7), but may have been AFFF based on its historic use. As PFC sampling was not conducted during soil excavation, PFCs from the foam may still be present in this area, particularly the ditch sidewalls, which were excavated based on odor detection. Any AFFF released in porous green spaces has the potential to seep into the subsurface and groundwater.

### 3.1.9 Building 503 Parking Lot

The soil removed from the 1981 POL spill area, as discussed above, was relocated to what is now the parking lot west of Building 503. The soil was placed on four concrete pads, spread at a depth of 6 to 10 inches, and was turned throughout the summer of 1981 to enhance volatilization. In the summer of 1982, the area was excavated to a depth of 3 ft and contaminated soil was disposed off-site along with the excavated material. The area was paved the same year (PEER, 1988).

Any AFFF runoff from this area would have impacted the soil and may have impacted the groundwater. Although the soil beneath the concrete pads was excavated and disposed off-site, there has been no PFC sampling for this area to confirm that the potential contamination has been delineated.
3.1.10 Building 510 (Supply)

Four full drums of AFFF on a wooden pallet were observed during the PA site visit inside Building 510, which is where excess AFFF has been stored for an unknown amount of time. No secondary containment was provided for the drums; however, there were no visible floor drains or nearby mandoors or overhead doors to facilitate an outside release of AFFF. There are no known records or personnel knowledge of accidental AFFF releases at Building 510.

3.2 Pathway and Environmental Hazard Assessment

The following is a preliminary evaluation of the threats and targets associated with each exposure pathway.

3.2.1 Groundwater

No documentation was available showing that groundwater at the Base has been tested for PFCs; therefore it is unknown whether PFCs are present in the groundwater. Based on historical practices, they may be present in the groundwater due to known or potential AFFF use at the following locations:

- Area surrounding Building 430 (Current Fire Station);

- Grassy areas northwest and southwest of Building 430 where FD vehicles have conducted AFFF system nozzle testing every six months;

- Area surrounding former Building 403 (Former Fire Station);

- Area surrounding Hangars 400, 406, and 414;

- Ditch between Hangar 414 and Hangar 400 where foam was used as a precaution during a fuel spill in 1981; and

- Area surrounding parking lot west of Building 503, where runoff may have occurred from the soil excavated from the 1981 fuel spill.
3.2.1.1 Water Wells

A review of the EDR Radius Map™ Report with Geocheck® dated July 21, 2015 (EDR, 2015) shows at least six water wells within a one-mile radius of the Base, located to the west, north and east of the property boundary (Appendix C-8). One well is also shown in the center of the Base property; according to WIANG personnel, there are no water wells on Base.

3.2.2 Soil

No documentation was available showing that soils at the Base have been tested for PFCs; therefore it is unknown whether PFCs are present in the soil. However, based on historical practices, they may be present in the soil due to known or potential AFFF use at the following locations:

- Area surrounding Building 430 (Current Fire Station);
- Grassy areas northwest and southwest of Building 430 where FD vehicles have conducted AFFF system nozzle testing every six months;
- Area surrounding former Building 403 (Former Fire Station);
- Area surrounding Hangars 400, 406, and 414;
- Ditch between Hangar 414 and Hangar 400 where foam was used as a precaution during a fuel spill in 1981; and
- Area surrounding parking lot west of Building 503, where runoff may have occurred from the soil excavated from the 1981 fuel spill.

In their anionic forms, perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) are water soluble and can migrate readily from soil to groundwater. The United States Environmental Protection Agency (USEPA) has not established Provisional Health Advisory Levels (PHALs) for PFOS and PFOA in soil (USEPA, 2014). The primary exposure pathway for PFOS and PFOA would be the ingestion of contaminated drinking water.
3.2.3 Sediment

No documentation was available showing that sediments at the Base have been tested for PFCs; therefore it is unknown whether PFCs are present in sediments. Based on historical practices, PFCs could be present in sediment in locations that have received drainage from the Base storm sewer system. In general, surface releases at the Base would enter the series of man-made ditches and culverts and ultimately discharge to Starkweather Creek. Sediments are not a concern in the area of the 1981 fuel spill, as the soil (and sediments) was excavated and ultimately disposed off-site.

3.2.4 Surface Water

Surface water at the Base is dictated by the man-made surface drainage and storm sewer system. There are no open bodies of water on the Base. Precipitation is generally collected by the storm sewer system and discharged to Starkweather Creek, which runs north, west, and south of the Base.

A map showing the Base storm drainage system is included in Appendix C-9. Several environmentally sensitive areas surrounding the Base are identified to be on the National Wetland Inventory according to the EDR report, as shown in Appendix C-10.
4.0 FINDINGS AND CONCLUSIONS

Ten potential release sites have been identified at the WIANG Base during this PA. Of those ten sites, nine are recommended for further investigation.

Further investigation is recommended at the Base to monitor and characterize any groundwater, soil, sediment, and/or surface water PFC contamination onsite. Sampling of soil and groundwater within the Base and at the outfalls of Starkweather Creek is recommended at a minimum to evaluate the potential of migration of PFCs. In addition, verification of the structural integrity of the Base sanitary sewer is advised.

Table 1 summarizes the recommendation and rationale for each AOC identified at the Base.
<table>
<thead>
<tr>
<th>No.</th>
<th>Potential AFFF PFC AOCs</th>
<th>GPS Coordinates</th>
<th>Rationale</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Latitude</td>
<td>Longitude</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Building 430 (Current Fire Station)</td>
<td>43.131328°</td>
<td>-89.338141°</td>
<td>Current AFFF storage area. No documented releases. Any discharges likely entered the sanitary sewer; however, outside releases may have occurred.</td>
</tr>
<tr>
<td>2</td>
<td>Building 430 Nozzle Test Area 1</td>
<td>43.131662°</td>
<td>-89.338613°</td>
<td>Known FD equipment testing and calibration area. Possible AFFF discharges to surface soils. AFFF may have infiltrated into permeable ground soils.</td>
</tr>
<tr>
<td>3</td>
<td>Building 430 Nozzle Test Area 2</td>
<td>43.130905°</td>
<td>-89.338596°</td>
<td>Known FD equipment testing and calibration area. Possible AFFF discharges to surface soils. AFFF may have infiltrated into permeable ground soils.</td>
</tr>
<tr>
<td>4</td>
<td>Former Building 403 (Former Fire Station)</td>
<td>43.132525°</td>
<td>-89.335744°</td>
<td>Former AFFF storage area. No documented releases. Any discharges likely entered the sanitary sewer; however, outside releases may have occurred.</td>
</tr>
<tr>
<td>5</td>
<td>Hangar 400</td>
<td>43.132756°</td>
<td>-89.334965°</td>
<td>Fire suppression system formerly supplied with AFFF. No documented accidental releases. Any discharges from fire suppression system testing likely entered the sanitary sewer; however, outside releases to the concrete apron may have occurred.</td>
</tr>
<tr>
<td>6</td>
<td>Hangar 406</td>
<td>43.133689°</td>
<td>-89.333669°</td>
<td>Fire suppression system formerly supplied with AFFF. No documented accidental releases. Any discharges from fire suppression system testing likely entered the sanitary sewer; however, outside releases to the concrete apron may have occurred.</td>
</tr>
</tbody>
</table>
Table 1: Preliminary Assessment Report Summary and Recommendations (Cont.)

<table>
<thead>
<tr>
<th>No.</th>
<th>Potential AFFF PFC AOCs</th>
<th>GPS Coordinates</th>
<th>Rationale</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Hangar 414</td>
<td>43.132023°, -89.337643°</td>
<td>Fire suppression system supplied with AFFF. No documented accidental releases. Any discharges from fire suppression system testing likely entered the sanitary sewer; however, outside releases to the concrete apron may have occurred.</td>
<td>Proceed to SI; focus on soil and groundwater at the downgradient edges of the concrete apron based on surface drainage patterns.</td>
</tr>
<tr>
<td>8</td>
<td>Fuel Spill Ditch</td>
<td>43.132136°, -89.336922°</td>
<td>Foam use (possibly AFFF) in response to 1981 fuel spill may have impacted soil and groundwater.</td>
<td>Proceed to SI; focus on soil (primarily the sidewalls of the ditch) and groundwater, which generally flows to the southeast.</td>
</tr>
<tr>
<td>9</td>
<td>Building 503 Parking Lot</td>
<td>43.131136°, -89.335853°</td>
<td>Soil excavated from the 1981 fuel spill ditch was placed in this location on concrete pads. Any runoff from the excavated soil may have impacted soil and groundwater.</td>
<td>Proceed to SI; focus on soil adjacent to the footprint of the former concrete pads and groundwater, which generally flows to the southeast.</td>
</tr>
<tr>
<td>10</td>
<td>Building 510 (Supply)</td>
<td>43.130679°, -89.334263°</td>
<td>Current AFFF storage area. No documented releases. Any discharges were likely contained within the building.</td>
<td>NFA.</td>
</tr>
</tbody>
</table>

AFFF – Aqueous Film Forming Foam  
AOC – Area of Concern  
FD – Fire Department  
GPS – Global Positioning Satellite  
NFA – No Further Action  
PFC – Perfluorinated Compound  
SI – Site Investigation
5.0 REFERENCES


Wisconsin Department of Natural Resources (WDNR), 2013. Record of Decision, Installation Restoration Program Sites 1 through 8, 115th Fighter Wing, Wisconsin Air National Guard, Truax Field-Madison, Wisconsin. June.
FIGURES
Figure 1
Site Location Map
Wisconsin Air National Guard - Truax Field
Madison, Wisconsin
Figure 2
Site Features and Potential AOCs
Wisconsin Air National Guard- Truax Field
Madison, Wisconsin

Notes:
Numbers associated with potential AFFF PFC AOCs correspond to Table 1 of this PFC PA Site Visit Report.

AFFF - aqueous film forming foam
AOC - area of concern
PA - preliminary assessment
PFC - perfluorinated compounds

Legend
Potential AFFF PFC AOCs
(approximate)
APPENDIX A

PHOTO DOCUMENTATION
Photo 1: Overhead foam fill at Fire Station (Building 430).

Photo 2: Trench drain (one of several) in the Fire Station (Building 430)
Photo 3: Looking south on west side of Fire Station (Building 430) where vehicle spray pattern tests are conducted.

Photo 4: Looking north on west side of Fire Station (Building 430) where vehicle spray pattern tests are conducted.
Photo 5: HEF storage (historically may have been AFFF storage) in the Mechanical Room of Hangar 400.

Photo 6: HEF storage (historically may have been AFFF storage) in the Mechanical Room of Hangar 406.
Photo 7: AFFF storage in the Mechanical Room of Hangar 414.

Photo 8: One of four fire suppression systems inside Hangar 414.
Photo 9: One of several trench drain inside Hangar 414.

Photo 10: Drainage ditch between Buildings 414 and 431 – suspected area of 1981 fuel spill where foam was used.
Photo 11: Looking east toward parking lot west of Building 503 where soil from 1981 fuel spill was placed on top of concrete pads and later disposed offsite.

Photo 12: AFFF storage in Building 510 (Supply).
APPENDIX B

RECORDS OF COMMUNICATION
Interview Questions regarding AFFF use
(At Present and back to 1970)

1. When did AFFF first start being used on this installation?
   
   Prior to 1988

2. What are the years of active use for each Fire Training Area (FTA), Aircraft Hangar, Fire Department, other places AFFF may have been used (collectively Potential Areas of Concern (PAOC))?
   
   Prior to 1988
   - not sure of exact dates

3. What type of AFFF is used or has been used on this installation (i.e. 8%, 6%, High Expansion Foam)?
   
   Note: Vehicles rated at 6%, but only using 3%.

4. What manufacturer’s AFFF products are used or were used on this installation (i.e. 3M, Ansul, Chemguard, etc.)?
   
   3M - now, and primarily in last 5 years
   In the past, Chemguard & Ansul

5. Did you ever dispose of old bulk AFFF, if so, when and where?
   
   Not aware

6. Is the AFFF stored as a mixed solution (3% or 6%) or do you formulate the AFFF on the installation?
   
   No
   
   Note: Vehicles rated at 6%.

7. If AFFF is formulated on base, where is the solution mixed, contained, transferred, etc.?
   
   N/A

8. Are your automated fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam?
   
   Yes
   
   AFFF = Bldg 414
   Bldgs 400's 406 previously had AFFF; now have HEF
   Bldg 412 - has always had HEF
9. If retrofitted, when was that done?

Bldgs 400 - not sure of exact date, a couple years ago

10. Do you have an inventory of the amount of AFFF stored on the installation, now and in the past, or present in automated fire suppression systems? Were retention ponds built to store discharged AFFF? Was the AFFF trickled to the sanitary sewer or left in the pond to infiltrate?

Not aware of pond.
Records: yes - will print them.
The city has called in the past about hits of foam in their system.

11. Provide a list of vehicles that carried AFFF, now and in the past, and where are/were they located? Any vehicles have a history of leaking AFFF?

Fire Station (Bldg 430)
Formerly at old Fire Station on flightline (next to 400) - torn down in 1994 or 95.

Will print inventory

12. How much AFFF (gallons) is/was carried/stored in the specified vehicles?

No, but if overfilled, AFFF may spill when vehicle turns a corner.

13. Do you ever dispose of unused AFFF? If so, how and where?

Not aware of - would not dump down drain.
Harmurt Pharmacy may have records?

14. Has unused AFFF ever been disposed of in the past? If so, how and where?

Not aware of disposal, but if so, would have been disposed as a waste.

15. Do you/did you test the vehicles spray patterns to make sure equipment is working properly?

Yes. - Weekly ops checks - turn pump on and spray minimal amounts of foam.
- 10 months fire testing required by FAT
  - Conduct on west side of Fire Station on grass.

16. How often are/were these spray tests performed and can you provide the locations of these tests, now and in the past?

See above
17. Can you describe the procedure on how vehicles and systems are/were supplied with AFFF?

Loaded via overhead fill in fire station.
1. Trench drains in building that go to sanitary

18. Can you provide the procedures on how these vehicles are/were cleaned/decontaminated and where vehicle cleaning is performed currently as well as performed in the past?

Clean inside the station in the stalls or outside in the truck bays. If foam on trucks, clean off so paint is not ruined.

19. Is/was there a specified area on the installation where vehicles are filled with AFFF and does this area have secondary containment in case of spills?

Will look into to see if trench drains can be closed off.

20. When a release of AFFF occurs during a fire training exercise, now and in the past, how is the AFFF cleaned and disposed of?

Rinse off area with water.
System on trucks flushed out once used.

21. How many FTAs are/were on this installation and where are they?

None on installation, but 1 used by MATC (College)

22. How many FTAs are active and inactive?

NA

23. What types of fuels/flammables were used at the FTAs?

Aviation fuel - JP8

24. For inactive FTAs, when was the last time that fire training using AFFF was conducted at them? Find out ahead of time in Admin Record for former FTAs.

NA
25. What are/were the non-FTA locations where PFCs or AFFF release systems are installed (i.e. Hangars, Wastewater Treatment Plants, Fire Stations, etc.)? Where are/were these locations (Building numbers)?

Not aware of

26. Do you have a list (Building names and numbers, current and demolished) where the fire suppression systems either currently contain or have contained AFFF?

[See #8]

Not aware of any other blids. Very few blids have been torn down.

27. Do you have records of fuel spill logs and emergency response logs? Knowledge of aircraft mishaps/crashes?

- Mid 90s (94?) at end of runway - AFFF probably used
- Off-Base mishap (2017?) - AFFF not used
- During 70s & early 80s, it was common practice to foam runways during crashes

No records though.

28. Do you have recollection or records of AFFF being used as a precaution in response to fuel releases to prevent fires?

No recollection. Renred (late 80s) Fire Chief (Bill Skinner) was questioned as well - no recollection. Assume that this happened in early 70s.

29. Do you have recollection or records of historical emergency response sites (i.e. crash sites and fires) where AFFF was used?

[See #27]

30. Do you have recollection or record of emergency runway landings where foam might have been used as a precaution?

Not on Base

31. If not written records or incomplete written records, do you have anecdotal/peroral information and locations of spills or other emergency response incidents where AFFF was used?

Aware of 2 @ Hangar 400 (early-mid 90s) - accidental

Because: there was no protective cover for system activation buttons and people would bump into button.

Now have covers.

Release would have discharged to sanitary sewer.
32. What is the typical procedure for removing dispensed AFFF from an area where it has been used?

Dissipate, then flush out with water.

33. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste water treatment plants, and AFFF ponds)?

No.

34. Do you have or did you have a chrome plating shop on base? If no, skip to Question #38.

Not aware.

35. What were/are the years of operation of that chrome plating shop?


36. Do you know whether the shop has/had a foam blanket mist suppression system or used a fume hood for emissions control?


37. If foam blanket mist suppression was used, where was the foam stored, mixed, applied, etc.?


38. Is there anyone else or other base organization personnel that you would recommend we interview? Name, organization, position, phone number, e-mail.

Chief Peak: Deputy Fire Chief (Eugene) - back on Wednesday.

Sue: Hazardous Pharmacy.

39. Was it common practice to wash away fuel spills with AFFF?

Yes, especially class 3 if large amount.

Doesn’t happen often.

Common practice, but not personally aware of.
40. Identify drainage patterns around flightline/ramp area. Point source discharge is likely AFFF Area of Concern (AOC).

Sue: Installation located in a basin, so everything is basically flat.
Interview Questions regarding AFFF use
(At Present and back to 1970)

1. When did AFFF first start being used on this installation?
   Bldg 414 was first to have system installed
   Bldg remodeled in 1994 and updated with AFFF

2. What are the years of active use for each Fire Training Area (FTA), Aircraft Hangar, Fire Department, other places AFFF may have been used (collectively Potential Areas of Concern (PAOC))?
   Bldg 400 built in 1957, not sure when foam installed, but had AFFF until remodel in 2009/10 s, switch to HEF.
   Bldg 406 = 2000
   Bldg 412 = cardox, then HEF

3. What type of AFFF is used or has been used on this installation (i.e. 3%, 6%, High Expansion Foam)?
   Bldg 412: 2%
   Hangars 400, 406 = 2 3/4%, jetex foam concentrate HEF
   Fire House (Bldg 56) = HEF
   AFFF = 3% when used

4. What manufacturer's AFFF products are used or were used on this installation (i.e. 3M, Ansul, Chemguard, etc.)?
   Spec'd out to purchase soon 3%, Chemguard
   Foam purchased when needed.
   Original AFFF from Bldg 414 is still at installation.

5. Did you ever dispose of old bulk AFFF, if so, when and where?
   No knowledge - do not think any has been disposed.

6. Is the AFFF stored as a mixed solution (3% or 6%) or do you formulate the AFFF on the installation?
   No - when mixed, it gets up

7. If AFFF is formulated on base, where is the solution mixed, contained, transferred, etc.?

8. Are your automated fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam?
   See #2
9. If retrofitted, when was that done?

NA

10. Do you have an inventory of the amount of AFFF stored on the installation, now and in the past, or present in automated fire suppression systems? Were retention ponds built to store discharged AFFF? Was the AFFF trickled to the sanitary sewer or left in the pond to infiltrate?

NA

11. Provide a list of vehicles that carried AFFF, now and in the past, and where are/were they located? Any vehicles have a history of leaking AFFF?

NA

12. How much AFFF (gallons) is/was carried/stored in the specified vehicles?

NA

13. Do you ever dispose of unused AFFF? If so, how and where?

Not aware

14. Has unused AFFF ever been disposed of in the past? If so, how and where?

NA

15. Do you/did you test the vehicles spray patterns to make sure equipment is working properly?

NA

16. How often are/were these spray tests performed and can you provide the locations of these tests, now and in the past?

Annually for hangars

Occasionally for foam every other year (average 15-20 gal at a time)
17. Can you describe the procedure on how vehicles and systems are/were supplied with AFFF?
Transfer pump to bladder tank on barrel.
Hangars have trench drains (1 out of 4 can be closed). Bldg 412 left in closed position.
Foam drained to sanitary.

18. Can you provide the procedures on how these vehicles are/were cleaned/decontaminated and where vehicle cleaning is performed currently as well as performed in the past?
Hangars: Call City of Madison prior to foam flowing testing to notify of upcoming discharge. Call later to tell them the amount coming.
Base doesn't need to test discharge.

19. Is/was there a specified area on the installation where vehicles are filled with AFFF and does this area have secondary containment in case of spills?
No secondary containment in Hangar mechanical room (AFFF for hangars stored here)

20. When a release of AFFF occurs during a fire training exercise, now and in the past, how is the AFFF cleaned and disposed of?
Water

21. How many FTAs are/were on this installation and where are they?
NA

22. How many FTAs are active and inactive?
NA

23. What types of fuels/flammables were used at the FTAs?
NA

24. For inactive FTAs, when was the last time that fire training using AFFF was conducted at them? Find out ahead of time in Admin Record for former FTAs.
NA
25. What are/were the non-FTA locations where PFCs or AFFF release systems are installed (i.e. Hangars, Wastewater Treatment Plants, Fire Stations, etc.)? Where are/were these locations (Building numbers)?

Not aware of.

26. Do you have a list (Building names and numbers, current and demolished) where the fire suppression systems either currently contain or have contained AFFF?

NA

27. Do you have records of fuel spill logs and emergency response logs? Knowledge of aircraft mishaps/crashes?

No

28. Do you have recollection or records of AFFF being used as a precaution in response to fuel releases to prevent fires?

Not aware of

29. Do you have recollection or records of historical emergency response sites (i.e. crash sites and fires) where AFFF was used?

NA

30. Do you have recollection or record of emergency runway landings where foam might have been used as a precaution?

NA

31. If not written records or incomplete written records, do you have anecdotal/verbal information and locations of spills or other emergency response incidents where AFFF was used?

NA
32. What is the typical procedure for removing dispensed AFFF from an area where it has been used?

33. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste water treatment plants, and AFFF ponds)?

   Bidg 414 - Mechanical Room
   Bidg 510 - Base Supply
   Fire Station

34. Do you have or did you have a chrome plating shop on base? If no, skip to Question #38.

   No

35. What were/are the years of operation of that chrome plating shop?

36. Do you know whether the shop has/had a foam blanket mist suppression system or used a fume hood for emissions control?

37. If foam blanket mist suppression was used, where was the foam stored, mixed, applied, etc.?

38. Is there anyone else or other base organization personnel that you would recommend we interview? Name, organization, position, phone number, e-mail.

   Mike Dale (Alarm Maintenance) - since '92

39. Was it common practice to wash away fuel spills with AFFF?

   No
40. Identify drainage patterns around flightline/ramp area. Point source discharge is likely AFFF Area of Concern (AOC).
Interview Questions regarding AFFF use
(At Present and back to 1970)

1. When did AFFF first start being used on this installation?

   Not known

2. What are the years of active use for each Fire Training Area (FTA), Aircraft Hangar, Fire Department, other places AFFF may have been used (collectively Potential Areas of Concern (PAOC))?

   NA

3. What type of AFFF is used or has been used on this installation (i.e. 3%, 6%, High Expansion Foam)?

   Aware that HEF is 3% AFFF is present in trucks, 414, 406, 412, 400

4. What manufacturer's AFFF products are used or were used on this installation (i.e. 3M, Ansul, Chemguard, etc.)?

   NA

5. Did you ever dispose of old bulk AFFF, if so, when and where?

   NA

6. Is the AFFF stored as a mixed solution (3% or 6%) or do you formulate the AFFF on the installation?

   NA

7. If AFFF is formulated on base, where is the solution mixed, contained, transferred, etc.?

   NA

8. Are your automated fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam?

   NA
9. If retrofitted, when was that done?  

NA

10. Do you have an inventory of the amount of AFFF stored on the installation, now and in the past, or present in automated fire suppression systems? Were retention ponds built to store discharged AFFF? Was the AFFF trickled to the sanitary sewer or left in the pond to infiltrate?  

no retention pond

11. Provide a list of vehicles that carried AFFF, now and in the past, and where are/were they located? Any vehicles have a history of leaking AFFF?  

NA

12. How much AFFF (gallons) is/was carried/stored in the specified vehicles?  

NA

13. Do you ever dispose of unused AFFF? If so, how and where?  

NA

14. Has unused AFFF ever been disposed of in the past? If so, how and where?  

NA

15. Do you/did you test the vehicles spray patterns to make sure equipment is working properly?  

NA

16. How often are/were these spray tests performed and can you provide the locations of these tests, now and in the past?  

NA
17. Can you describe the procedure on how vehicles and systems are/were supplied with AFFF?
   
   **NA**

18. Can you provide the procedures on how these vehicles are/were cleaned/decontaminated and where vehicle cleaning is performed currently as well as performed in the past?

   **NA**

19. Is/was there a specified area on the installation where vehicles are filled with AFFF and does this area have secondary containment in case of spills?

   **Known in 412 - HEF here though**

20. When a release of AFFF occurs during a fire training exercise, now and in the past, how is the AFFF cleaned and disposed of?

   **NA**

21. How many FTAs are/were on this installation and where are they?

   **NA**

22. How many FTAs are active and inactive?

   **NA**

23. What types of fuels/flammables were used at the FTAs?

   **NA**

24. For inactive FTAs, when was the last time that fire training using AFFF was conducted at them? Find out ahead of time in Admin Record for former FTAs.

   **NA**
25. What are/were the non-FTA locations where PFCs or AFFF release systems are installed (i.e. Hangars, Wastewater Treatment Plants, Fire Stations, etc.)? Where are/were these locations (Building numbers)?

NA

26. Do you have a list (Building names and numbers, current and demolished) where the fire suppression systems either currently contain or have contained AFFF?

NA

27. Do you have records of fuel spill logs and emergency response logs? Knowledge of aircraft mishaps/crashes?

NA

28. Do you have recollection or records of AFFF being used as a precaution in response to fuel releases to prevent fires?

Have not seen on flightline.

29. Do you have recollection or records of historical emergency response sites (i.e. crash sites and fires) where AFFF was used?

- Aircraft crash off runway (411)
- Crash (Aircraft 314) at Volk Field - 2003

Maj. not present at either crash.

30. Do you have recollection or record of emergency runway landings where foam might have been used as a precaution?

NA

31. If not written records or incomplete written records, do you have anecdotal/verbal information and locations of spills or other emergency response incidents where AFFF was used?

NA
32. What is the typical procedure for removing dispensed AFFF from an area where it has been used?

NA

33. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste water treatment plants, and AFFF ponds)?

NA

34. Do you have or did you have a chrome plating shop on base? If no, skip to Question #38.

Not known

35. What were/are the years of operation of that chrome plating shop?

-

36. Do you know whether the shop has/had a foam blanket mist suppression system or used a fume hood for emissions control?

-

37. If foam blanket mist suppression was used, where was the foam stored, mixed, applied, etc.?

-

38. Is there anyone else or other base organization personnel that you would recommend we interview? Name, organization, position, phone number, e-mail.

Contact Maintenance to check on existence of chrome plating shop

Metals Tech

39. Was it common practice to wash away fuel spills with AFFF?

NA
40. Identify drainage patterns around flightline/ramp area. Point source discharge is likely AFFF Area of Concern (AOC).

NA
COMMUNICATION RECORD

Name of Base, State: Regarding WANG - Madison, WI
Interviewer: JACLYN PLUMMER
Organization: BAE
Position/role on this project:
Phone: 248.489.1636 Ext 307
Email: jplummer@bae.com

Interviewee: Mr. Bradley Stepp
Organization: WI Army Nat’l Guard
Position/Job Title: Logistics Officer
Phone: 608-301-8340
Email:

How Long in this Postion? NA
How long at this Base in current and previous positions? NA
Have you held similar positions at other bases? NA
Which bases?
How long?

Discussion:
Background Info: Ms. Gustke provided several contact numbers for Army Nat’l Guard. Scott Rickard (Hazardous waste Manager) was called first, and directed to Mr. Stepp.

According to Mr. Stepp, there have been no fire training areas on the site. Forum of any sort is no used. Only fire extinguishers are used (on the flightline). There are no fire suppression systems.
APPENDIX C-1

GROUNDWATER CONTOUR MAPS
TRUAX FIELD

SITE ASSESSMENT REPORT
HANGAR 414 EXPANSION AREA

WISCONSIN AIR NATIONAL GUARD
128th FIGHTER WING
DANE COUNTY AIRPORT, TRUAX FIELD
MADISON, WISCONSIN

FINAL

Prepared for:

National Guard Bureau ANGRC/CEVR
Andrews AFB, Maryland 20331-6008

Prepared by:

Advanced Sciences, Inc.
165 Mitchell Road
Oak Ridge, Tennessee 37830

Submitted to:

Hazardous Waste Remedial Action Program
Martin Marietta Energy Systems, Inc.
Oak Ridge, Tennessee 37830

July, 1994
FIGURE 3.2
GROUNDWATER FLOW DIRECTION MAP
JANUARY 1993

LEGEND:

PREVIOUSLY INSTALLED MONITORING
WELL LOCATION AND NUMBER

BUILDING

SCALE IN FEET

0 200

ABANDONED HYDRANT
FUELING SYSTEM

ABANDONED POL
TRANSFER SUPPLY
LINE
LEGAL DESCRIPTION—CURRENT LEASE

All that part of the Southwest 1/4 of the Southwest 1/4 and part of the Southwest 1/4 of Section 29, in Township 8 North, Range 10E, City of Madison, Dane County, Wisconsin, containing 6,396.811 acres (26,000 acres) bounded and described as follows:

Commencing at the Northeast corner of Section 29, thence S88°12'13"W, 1081.82' to the Point of Beginning.
APPENDIX C-3

FIRE DEPARTMENT VEHICLE AND AFFF INVENTORY
## DOD ARFF Vehicle Information

<table>
<thead>
<tr>
<th>Call Sign</th>
<th>Model Year</th>
<th>Manufacturer</th>
<th>Model (Type)</th>
<th>Vehicle Status</th>
<th>Water Capacity</th>
<th>AFFF Capacity</th>
<th>AFFF Concentration</th>
<th>Dry Chemical Type</th>
<th>Dry Chemical Capacity</th>
<th>Maximum Primary Turret Discharge Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foam 3</td>
<td>2013</td>
<td>KME-RIV</td>
<td>P-34</td>
<td>In Service</td>
<td>400</td>
<td>56</td>
<td>3</td>
<td>-</td>
<td>450</td>
<td>60 gpm</td>
</tr>
<tr>
<td>Foam 4</td>
<td>2013</td>
<td>KME-RIV</td>
<td>P-34</td>
<td>In Service</td>
<td>400</td>
<td>56</td>
<td>3</td>
<td>-</td>
<td>450</td>
<td>60 gpm</td>
</tr>
<tr>
<td>Foam 5</td>
<td>2006</td>
<td>OshKosh</td>
<td>P-19</td>
<td>In Service</td>
<td>1500</td>
<td>200</td>
<td>3</td>
<td>Sodium-Based</td>
<td>450</td>
<td>750 gpm</td>
</tr>
</tbody>
</table>

## Summary:

### INDEX A
- 1 vehicle with 500 lbs sodium based dry chemical/Halon 1211/clean agent; or
- 450 lbs of potassium based dry chemical and 100 gal AFFF

### INDEX B
- 1 vehicle with 500 pounds of sodium based dry chemical/Halon 1211/clean agent and 1500 gals AFFF; or
- 2 vehicles: 1 vehicle with 500 lbs sodium based dry chemical/Halon 1211/clean agent; or 450 lbs of potassium based dry chemical and 100 gal AFFF; and 1 vehicles with 1500 gals AFFF

### INDEX C
- 3 vehicles: 1 vehicle with 500 lbs sodium based dry chemical/Halon 1211/clean agent; or 450 lbs of potassium based dry chemical and 100 gal AFFF and 2 vehicles with 3000 gals of AFFF (in all 3 vehicles combined)
- 2 vehicles: 1 vehicle with 500 lbs sodium based dry chemical/Halon 1211/clean agent; or 450 lbs of potassium based dry chemical and 100 gal AFFF and 1 vehicle with 3000 gals of AFFF (in both vehicles combined)

### INDEX D
- 3 vehicles: 1 vehicle with 500 lbs sodium based dry chemical/Halon 1211/clean agent; or 450 lbs of potassium based dry chemical and 100 gal AFFF and 2 vehicles with 4000 gals of AFFF (in all 3 vehicles combined)

### INDEX E

### Number of Vehicles:
- 3 Vehicles

### Total Water Capacity:
- 2300 Gallons

### Total AFFF Capacity:
- 312 Gallons

### Total Dry Chemical Capacity:
- 450 Pounds
115th CEF- AFFF Inventory

* The amount you have in your trucks ANSWER : 471 Gallons

* The amount you have at station as back up ANSWER : 821 Gallons

* The amount you may have in your base warehouse ANSWER : 220 Gallons

* I need to know how much is 3M brand on each item above ANSWER : 55 Gallons
<table>
<thead>
<tr>
<th>Fire Department</th>
<th>Date: 2/3/2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Year Agent Inventory</strong></td>
<td></td>
</tr>
<tr>
<td><strong>AFF Foam</strong></td>
<td></td>
</tr>
<tr>
<td>Overhead</td>
<td></td>
</tr>
<tr>
<td>Count: 375 Gallons: 375 Variance: 0</td>
<td></td>
</tr>
<tr>
<td>5 gallon pails</td>
<td></td>
</tr>
<tr>
<td>Count: 32 Gallons: 160 Variance: 0</td>
<td></td>
</tr>
<tr>
<td>55 gallon drums</td>
<td></td>
</tr>
<tr>
<td>Count: 6 Gallons: 330 Variance: 0</td>
<td></td>
</tr>
<tr>
<td><strong>Total Gallons of Foam on Hand (412 required)</strong></td>
<td></td>
</tr>
<tr>
<td>Count: 535 Gallons: 535 Variance: 63</td>
<td></td>
</tr>
<tr>
<td><strong>Total Gallons of Foam on Hand w/Vehicles (824 required)</strong></td>
<td></td>
</tr>
<tr>
<td>Count: 887 Gallons: 887 Variance: 63</td>
<td></td>
</tr>
<tr>
<td><strong>Dry Chemical</strong></td>
<td></td>
</tr>
<tr>
<td>Count: 37 lbs: 1850 Variance: 900</td>
<td></td>
</tr>
<tr>
<td><strong>Total Pounds of Dry Chem on Hand (950 required)</strong></td>
<td></td>
</tr>
<tr>
<td>Count: 37 lbs: 1850 Variance: 900</td>
<td></td>
</tr>
<tr>
<td><strong>Base Supply</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Foam</strong></td>
<td></td>
</tr>
<tr>
<td>5 gallon pails</td>
<td></td>
</tr>
<tr>
<td>Count: 0 Gallons: 0 Variance: 0</td>
<td></td>
</tr>
<tr>
<td>55 gallon drums</td>
<td></td>
</tr>
<tr>
<td>Count: 4 Gallons: 220 Variance: -604</td>
<td></td>
</tr>
<tr>
<td><strong>Total Gallons of Foam on Hand (824 required)</strong></td>
<td></td>
</tr>
<tr>
<td>Count: 220 Gallons: 220 Variance: -604</td>
<td></td>
</tr>
<tr>
<td><strong>Dry Chemical</strong></td>
<td></td>
</tr>
<tr>
<td>Count: 17 lbs: 850 Variance: -100</td>
<td></td>
</tr>
<tr>
<td><strong>Total Pounds of Dry Chem on Hand (950 required)</strong></td>
<td></td>
</tr>
<tr>
<td>Count: 17 lbs: 850 Variance: -100</td>
<td></td>
</tr>
</tbody>
</table>

* Need to test rapid resupply plan yearly.

* **Agent Stock is limited to 1 complete refill of Assigned Fire Fighting Vehicles - AFI32-2001 Feb.2014 (#4.1.6)**

352 total gallons of foam on all vehicles F-3,4,5,E-9
950 lb. of dry chem total for F-5, Car-2
Class A-foam for F-3,4,E-9 not included
<table>
<thead>
<tr>
<th>Fire Department</th>
<th>Foam</th>
<th>Count</th>
<th>Gallons</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overhead</td>
<td></td>
<td></td>
<td>425</td>
<td></td>
</tr>
<tr>
<td>5 gallon pails</td>
<td>4</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 gallon drums</td>
<td>4</td>
<td>220</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Gallons of Foam on Hand (650 required)</strong></td>
<td></td>
<td></td>
<td>665</td>
<td></td>
</tr>
<tr>
<td><strong>Total Gallons of Foam on Hand w/Vehicles (1300 required)</strong></td>
<td></td>
<td></td>
<td>1315</td>
<td>15</td>
</tr>
<tr>
<td><strong>Dry Chemical</strong></td>
<td>Count</td>
<td>lbs</td>
<td>Variance</td>
<td></td>
</tr>
<tr>
<td>Dry Chemical</td>
<td>40</td>
<td>2000</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Total Pounds of Dry Chem on Hand (2000 required)</strong></td>
<td></td>
<td></td>
<td>40 2000 0</td>
<td></td>
</tr>
<tr>
<td><strong>Base Supply</strong></td>
<td>Foam</td>
<td>Count</td>
<td>Gallons</td>
<td></td>
</tr>
<tr>
<td>5 gallon pails</td>
<td>98</td>
<td>490</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 gallon drums</td>
<td>23</td>
<td>1265</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Gallons of Foam on Hand (1300 required)</strong></td>
<td></td>
<td></td>
<td>1755</td>
<td>455</td>
</tr>
<tr>
<td><strong>Dry Chemical</strong></td>
<td>Count</td>
<td>lbs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry Chemical</td>
<td>40</td>
<td>2000</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Total Pounds of Dry Chem on Hand (2000 required)</strong></td>
<td></td>
<td></td>
<td>40 2000 0</td>
<td></td>
</tr>
</tbody>
</table>

Need to test rapid resupply plan yearly.
YEARNLY AGENT TESTING REQUIREMENTS FOR AIRCRAFT RESCUE AND FIRE FIGHTING VEHICLES
Foam Testing Requirements


- NFPA 412 page 412-5, States Two different methods of testing. Method A is for a refractometer or conductivity meter.

- Advisory Circular 150/5220-10C pages 29 – 32 illustrates the performance requirements for both foam and dry chemical.

- TESTING RESULTS DOCUMENTED PROPERLY!
Problems Throughout the Industry

- Foam Too Rich
- Foam Too Lean
- Valve failure
- Air Line failure
- Dry Chemical system failure.
Yearly Agent Foam Testing Required

- Annual expansion, drain and distance testing.

- Combination of the expansion, drain and conductivity readings monthly. The distance testing annual.
Conductivity Meter vs The Refractometer

- Different Technologies

- **Conductivity Meter** more precise.

- **Refractometer** leaves every test up to for different interpretation.
Equipment/Tools Needed

- 1000 ML Graduated Cylinder
- Distilled Water
- Conductivity Meter & Probe
- Syringes
- Gram Scale
- 100 ML Graduated Cylinders
- Calibration Solution
Collecting Samples
Deflector Plate Set Up

- Clear open area to conduct the test.

- Secure the deflector plate.

- Ensure the plate is clean and free of debris.
Testing - Shooting Agent/Foam

- Position ARFF Vehicle at least 50 – 100 feet away.

- Activate Foam System

- Direct stream away from deflector plate for at least 15 to 30 seconds.

- Then direct stream to the middle of the target and fill the graduated cylinder.
Final Steps
APPENDIX C-6

AFFF FIRE SUPPRESSION SYSTEM TESTING AND MAINTENANCE LOGS – HANGARS 400 AND 414
MEMORANDUM FOR RECORD

FROM: 115 CES/CEOR

3110 Mitchell Street
Madison WI 53704-2591

SUBJECT: FIRE SUPPRESSION SYSTEM TESTING

1. A check of the Fire Suppression System in Building 400 was accomplished on 30 Aug 05 by Jim Launigan, Ed Tilbert, Mike Dale and Hoyt Halverson.

The test was accomplished in accordance with UFC 3-600-2, the following was tested:

- UVIR Detectors with HP Fan Fire
- System operation with abort switch
- System operation without abort switch
- Foam Flow
- Foam concentration by Fire Dept.

2. The following discrepancies were noted

None

3. If you have any questions, please call me at (608) 245-4677. Thank you.

HOYT S. HALVERSON, MSgt, WI ANG
Production Controller Construction

cc: Facility Folder

Dedicated to Excellence
### Foam Expansion and Drain Time Test

<table>
<thead>
<tr>
<th>Bldg</th>
<th>Hngr 400</th>
<th>Date</th>
<th>Operating Pressure Psi @ Pump</th>
<th>30-Aug-05 Pattern Turret</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Air Temp</td>
<td>Nozzle Flow</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>H2o Temp</td>
<td>Wind</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Wind</td>
<td>Direction</td>
</tr>
</tbody>
</table>

#### Foam Expansion Test
- Gross weight of container: 284 G
- Empty weight of container: 204 G
- Net Weight of Foam Sample: 80 G

Foam Expansion = \[
\frac{\text{Volume of foam container}}{\text{Net weight of foam sample}} \times 1000\text{ ML}
\]

- Foam Expansion: 12.5
- 25% Volume Test:
  - Twenty-five % Volume = \[
  \frac{\text{Net weight of foam sample}}{4} = \frac{80\text{ G}}{4} = 20
  \]

#### Baseline Readings

<table>
<thead>
<tr>
<th>Foam Percentage</th>
<th>Baseline Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.00%</td>
<td>1.04</td>
</tr>
<tr>
<td>2.99%</td>
<td>1.19</td>
</tr>
<tr>
<td>4.00%</td>
<td>1.34</td>
</tr>
</tbody>
</table>

- Test Foam Reading: 1.14

#### Test performed by:
- Leo R. Sedlmeyer, Deputy Fire Chief
- Eric T. Fredrickson, Fire Fighter/EMT
MEMORANDUM FOR RECORD

FROM: 115 CES/CEOR
3110 Mitchell Street
Madison WI 53704-2591

SUBJECT: FIRE SUPPRESSION SYSTEM TESTING

1. A check of the Fire Suppression System in Building 400 was accomplished on 26 May 2004 by Ed Gilbert, Jim Lamigun, Mike Dale, Hoyt Halverson.

The test was accomplished in accordance with UFC 3-600-2, the following was tested:

- UV/IR Detectors with JP-8 Pan Fire
- System operation with abort switch
- System operation without abort switch
- Foam Flow
- Foam concentration by Fire Dept.

2. The following discrepancies were noted:

- Foam Concentration not 1% need to check proportioner.
- Found concentrate value not fully open.
- Will retest

3. If you have any questions, please call me at (608) 245-4677. Thank you.

HOYT S. HALVERSON, MSgt, WI ANG
Production Controller Construction

cc:
Facility Folder
Truax ARFF
Foam Expansion and Drain Time Test

<table>
<thead>
<tr>
<th>Hanger 400</th>
<th>Date</th>
<th>26-May-04</th>
<th>Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Pressure Psi @ Pump</td>
<td>Nozzle Flow</td>
<td>Floor Nozzles</td>
<td></td>
</tr>
<tr>
<td>Air Temp</td>
<td>H2o Temp</td>
<td>Wind</td>
<td>Direction</td>
</tr>
</tbody>
</table>

**Foam Expansion Test**

- Gross weight of container: 439 G
- Empty weight of container: 227 G
- Net Weight of Foam Sample: 212 G

**Foam Expansion**

\[ \text{Foam Expansion} = \frac{\text{Volume of foam container}}{\text{Net weight of foam sample}} \]

Gross Weight of Container: 1000 ML

| Net Weight of Foam Sample | 212 G | 4.716981 |

**25% Volume Test**

Twenty-five % Volume: 4

| Net weight of foam sample | 212 G | 53 |

**Base Lines**

<table>
<thead>
<tr>
<th>Conductivity Readings</th>
<th>2%</th>
<th>3%</th>
<th>4%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refract Readings</td>
<td>1.06 ms</td>
<td>1.17 ms</td>
<td>1.35 ms</td>
</tr>
</tbody>
</table>

**Actual Test**

- Conductivity Reading: .80 ms
- Refractometer Reading: 50

**Pan Fire Start**: 8:25:30
**Alarm Activation**: 8:26:22
**Time to activation**: 8:26:56
**Good Foam pattern**: 8:27:20
**Sample taken**: 8:27:49

**Raw System Foam Cond Reading**: 6.98 ms
**Refilling foam Drums**: Year, Cond Reading
- 1995: 6.22
- 1995: 6.82
- 1995: 6.92
- 1990: 4.54
- 1995: 6.07
- Average reading: 6.114

**Test Conducted by:**
- Deputy Fire Chief Sedlmeyer
- Asst Fire Chief Schultz
- FF/EMT Fredrickson
Cross Connection Control
Performance Test

Regulated Object Number: 796017

OWNER INFORMATION
Please print clearly in ballpoint pen. Additional information on back page.

- **Owner Name:** WI Air National Guard
- **Address:** 3110 Mitchell St
- **City:** Madison
- **State:** WI
- **Zip Code:** 53704
- **Telephone Number:** (608) 245-4571

FACILITY INFORMATION

- **Facility Name:** WI Air National Guard
- **Address:** 3110 Mitchell St Bldg 414
- **City:** Madison
- **State:** WI
- **Zip Code:** 53704
- **County:** Dane
- **Assembly Location:** Fire Panel/Water Supply Room

Manufacturer: Amos
Model: 4000
Serial Number: 4650479

Size: 10" Assembly Type: RP

### INITIAL TEST

<table>
<thead>
<tr>
<th>Relief Valve</th>
<th>1st Check</th>
<th>2nd Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opened at 2.4 PSID</td>
<td>Closed tight</td>
<td>Closed tight</td>
</tr>
<tr>
<td>Did not open</td>
<td>Static 6.3 PSID</td>
<td>Static 1.3 PSID</td>
</tr>
</tbody>
</table>

### FINAL TEST

<table>
<thead>
<tr>
<th>Detector, No.</th>
<th>PSID</th>
<th>Closed tight</th>
<th>Static PSID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opened at</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DETECTOR BYPASS ASSEMBLY INITIAL TEST

<table>
<thead>
<tr>
<th>Relief Valve</th>
<th>1st Check</th>
<th>2nd Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opened at</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not open</td>
<td>Static 6.3 PSID</td>
<td>Static 1.3 PSID</td>
</tr>
</tbody>
</table>

### DETECTOR BYPASS ASSEMBLY FINAL TEST

<table>
<thead>
<tr>
<th>Detector, No.</th>
<th>PSID</th>
<th>Closed tight</th>
<th>Static PSID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opened at</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PRESSURE VACUUM BREAKER INITIAL TEST

<table>
<thead>
<tr>
<th>Check Valve</th>
<th>PSID</th>
<th>Closed tight</th>
<th>Static PSID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opened at</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PRESSURE VACUUM BREAKER FINAL TEST

<table>
<thead>
<tr>
<th>Check Valve</th>
<th>PSID</th>
<th>Closed tight</th>
<th>Static PSID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opened at</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ASSEMBLIES IN FIRE PROTECTION SYSTEMS

- **Forward Flow Test**
  - Designed flow rate GPM
  - Actual flow rate: 1744 GPM

- **Indicating Control Valves**
  - ![Diagram](image)
  - Flow rate: 68 GPM

- **Valve supervision**
  - ![Diagram](image)
  - Valves: 18
  - Tamper switch: Locked

Part(s) Replaced/Comments

---

I HEREBY CERTIFY THE TEST RESULTS ARE TRUE AND THE TEST WAS CONDUCTED BY ME PERSONALLY.

- **Tester Name:** Bruce Griepentrop
- **Registration No.:** 220463
- **Time of Day:** 3:00pm
- **Phone No.:** 256-3900
- **Date:** 4-24-08

SBD-9927 (R.5/04) White-Department of Commerce, Pink-Tester, Canary-Owner, Blue-Surveyor
IEMS--Work Order

PREVENTIVE MAINTENANCE

orkOrderType ELECTRICAL

Date Required 4/8/2008
Date Scheduled 7/14/2008

Facility 00414
TRUAX FIELD
Unit:

Discrepancy AFFF FIRE SUPPRESSION

Equipment Description: AFFF SUPRESSION SYSTEM, FIRE PROTECTION

EquipmentSubtype: FIRE_PROTECTION
Model: UPRIGHT PENDANT
Location: 00414
Floor: FIRST

Voltage: 0Watts: 0Amps: 0Phase: Life Date:

Start Date 4/8/2008
Start Time 17:15
End Time 17:30

PERFORM INSPECTION.

Remarks 00414 MAS-1232
Work Provider 0XGFG FY 2008

DONE
## IEMS--Work Order

### PREVENTIVE MAINTENANCE

- **Order Type**: ELECTRICAL
- **Priority Code**: IV

<table>
<thead>
<tr>
<th>Date Required</th>
<th>Date Scheduled</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/8/2008</td>
<td>7/14/2008</td>
</tr>
</tbody>
</table>

**Facility**: 00414  
**Requestor**: TED BENDLER  
**Unit**: TRUAX FIELD

**Discrepancy**: AFFF FIRE SUPPRESSION

### Equipment Description:

**Description**: AFFF SUPPRESSION SYSTEM, FIRE PROTECTION

- **Equipment Subtype**: FIRE PROTECTION
- **Model**: UPRIGHT PENDANT
- **Manufacturer**: XNNM94
- **Location**: 00414
- **Floor**: FIRST
- **Voltage**: 155 DEGREES
- **Start Date**: 4/8/2008
- **Start Time**: 17:15
- **End Time**: 17:30

**Remarks**: 00414 MAS-1232

**Work Provider**: OXGFG  
**FY**: 2008

---

**Perform Inspection:**

---

**DONE**
## IEMS--Work Order

**PREVENTIVE MAINTENANCE**

**Work Order Type**  ELECTRICAL

<table>
<thead>
<tr>
<th>Date Required</th>
<th>4/8/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Scheduled</td>
<td>7/14/2008</td>
</tr>
</tbody>
</table>

**Facility** 00414  
**Requestor** TED BENDLER

**Discrepancy** AFFF FIRE SUPPRESSION

### Equipment Description:
- **Type**: AFFF SUPPRESSION SYSTEM, FIRE PROTECTION
- **Subtype**: FIRE_PROTECTION
- **Model**: UPRIGHT PENDANT
- **Manufacturer**: XNNM93
- **Location**: 00414
- **Floor**: FIRST
- **Room**: 200 DEGREES
- **Voltage**: 0
- **Watts**: 0
- **Amps**: 0
- **Phase**: 0
- **Life Date**:

**Start Date** 4/8/2008  
**Start Time** 17:15
**End Time** 17:30

**Remarks** 00414 MAS-1232

**Work Provider** OXGFG  
**FY 2008**
PREVENTIVE MAINTENANCE

WorkOrderType: ELECTRICAL

Date Required: 5/1/2013
Date Scheduled: 5/29/2013

Priority Code: IV

Facility: 00414
Requestor: Martin. Sibiga

FUEL CELL MAINTENANCE
Unit: 115MXS/LGMCF

Discrepancy: RECEIVER/TRANSMITTER; FIRE ALARM CONTROL - ANNUAL

Equipment Description: RECEIVER / TRANSMITTER

EquipmentSubtype: ALARM_SYSTEMS
Mfr: MONACO
Model: BT2-8
S/N: 3807
Location: 00414
Floor: EQUIP. TON.
Room: MECH ROOM
Voltage: 0
Watts: 0
Amps: 0
Phase: 0

Start Date: 5/1/2013
Start Time: 10:27
End Time: 10:42

RECEIVER/TRANSMITTER; FIRE ALARM CONTROL - ANNUAL

DISABLE FOAM RELEASE SOLENOIDS BEFORE TESTING SYSTEM ALARMS

1. COMPLETE VISUAL INSPECTION OF ALL OTHER AUXILIARY PANELS IN BUILDING.
2. NOTIFY THE FIRE DEPARTMENT BY RADIO AND VERIFY RESULT OF EACH TEST.
3. NOTIFY BUILDING OCCUPANTS BEFORE EACH OPERATIONAL TEST.
4. BATTERY TEST. CONNECT METER TO BATTERY TERMINALS (OBSERVE POLARITY) AND DISCONNECT AC POWER. TMX SHOULD SEND AN AC FAIL TROUBLE ALARM. RECORD BATTERY VOLTAGE DURING TMX. IF VOLTAGE IS LESS THAN 10VDC, REPLACE BATTERY.
5. COMPLETE THE BATTERY TESTS OF ALL AUXILIARY PANELS IN BUILDING.
6. OPERATIONAL TESTS. (AC POWER STILL DISCONNECTED):
   A. TROUBLE ALARM.
   B. FIRE, SECURITY, AND AUXILIARY ALARMS, ACTIVATE ZONE DEVICE, RECORD LOCATION.
   C. TRANSMITTER SHOULD SEND AN ALARM. RETURN ZONE DEVICE TO NORMAL.
   D. SELECT DIFFERENT ZONE EVERY MONTH. (ONE ZONE TESTED/MONTH).
7. RECONNECT AC POWER TO ALL PANELS IN THE BUILDING.
8. INFORM FIRE DEPARTMENT THAT YOU ARE FINISHED WITH THE BUILDING.

NEEDS Battery

5/1/2013

Complete 9:31 AM
Foam Expansion and Drain Time Test

Vehicle 414 Date 17-Nov-10 Pattern Turret Roof
Operating Pressure PsI @ Pump Nozzle Flow
Air Temp H2o Temp Wind Direction North

Foam Expansion Test

Gross weight of container 380 G
Empty weight of container 276 G
Net Weight of Foam Sample 104 G

Foam Expansion = Volume of foam contain 1000 ML
Net weight of foam sam 104 G 9.6153846

25% Volume Test

Twenty-five % Volume = Net weight of foam sam 104 G
4 4 26

Base Lines

<table>
<thead>
<tr>
<th>2%</th>
<th>3%</th>
<th>4% Actual Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.83</td>
<td>0.96</td>
<td>1.03 0.92</td>
</tr>
</tbody>
</table>

PH Levels
System 7.2

Testing Officer Fire Fighters
Leo R. Sedlmeyer Paul Leverich
Deputy Fire Chief Josh Ramsey
Jake Lucht
Hngr 414 Corrosion Bay Test 10 Jan 2007

Foam Expansion Test

| Gross weight of container | 647 | G | System | 7.2 |
| Empty weight of container  | 227 | G | Containers |
| Net Weight of Foam Sample  | 420 | G |

Foam Expansion = Volume of foam container / Net weight of foam sample

<table>
<thead>
<tr>
<th>28% Volume Test</th>
<th>25% Volume Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net weight of foam sample</td>
<td>420 G</td>
</tr>
<tr>
<td>420 G</td>
<td></td>
</tr>
</tbody>
</table>

PH Levels

<table>
<thead>
<tr>
<th>PH Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
</tr>
<tr>
<td>Containers</td>
</tr>
</tbody>
</table>

Foam Expansion

![Chart showing foam expansion test results]

Base Lines

<table>
<thead>
<tr>
<th>2%</th>
<th>3%</th>
<th>4%</th>
<th>Actual Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.90</td>
<td>1.08</td>
<td>1.26</td>
<td>1.08</td>
</tr>
</tbody>
</table>

Fire Times

<table>
<thead>
<tr>
<th>Start</th>
<th>Activation</th>
<th>Extinguish</th>
</tr>
</thead>
<tbody>
<tr>
<td>915</td>
<td>915</td>
<td>916</td>
</tr>
</tbody>
</table>

Test Officer

Leo R. Sedlmeyer, CMF
Deputy Fire Chief

Volume Time

<table>
<thead>
<tr>
<th>Min/Sec</th>
<th>Drained solution in Milliliters</th>
</tr>
</thead>
<tbody>
<tr>
<td>00:00</td>
<td>0</td>
</tr>
<tr>
<td>00:30</td>
<td>2</td>
</tr>
<tr>
<td>01:00</td>
<td>8</td>
</tr>
<tr>
<td>01:30</td>
<td>12</td>
</tr>
<tr>
<td>02:00</td>
<td>16</td>
</tr>
<tr>
<td>02:30</td>
<td>18</td>
</tr>
<tr>
<td>03:00</td>
<td>24</td>
</tr>
</tbody>
</table>
Hngr 414 Fuel Bay

Truax ARFF

Foam Expansion and Drain Time Test

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>Date</th>
<th>Pattern</th>
<th>Turret Roof</th>
</tr>
</thead>
<tbody>
<tr>
<td>414</td>
<td>10-Jan-07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Operating Pressure Psi @ Pump

Air Temp | 32°F | H2o Temp | 54°F | Wind Direction | North |

Foam Expansion and Drain Time Test

Water temp will affect the expansion ratio

**Foam Expansion Test**

| Gross weight of container | 688 | G | System | 7.2 |
| Empty weight of container | 227 | G | Containers | |
| Net Weight of Foam Sample | 461 | G | |

Foam Expansion = \[
\frac{\text{Volume of foam container}}{1000 \text{ ML}} \times \frac{\text{Net weight of foam sample}}{461 \text{ G}}
\]

25% Volume Test

Twenty-five \(\%\) Volume = \[
\left(\frac{\text{Net weight of foam sample}}{4}\right)
\]

Base Lines

<table>
<thead>
<tr>
<th>2%</th>
<th>3%</th>
<th>4%</th>
<th>Actual Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.90</td>
<td>1.07</td>
<td>1.23</td>
<td>1.13</td>
</tr>
</tbody>
</table>

Hngr 414 Fuel Bay Test 10 Jan 2007

![Graph showing foam expansion test results]

Fire Times

<table>
<thead>
<tr>
<th>Event</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start</td>
<td>852</td>
</tr>
<tr>
<td>Activation</td>
<td>853</td>
</tr>
<tr>
<td>Extinguish</td>
<td>854</td>
</tr>
</tbody>
</table>

Volume Time

<table>
<thead>
<tr>
<th>Min/Sec</th>
<th>Drained solution in Milliliters</th>
</tr>
</thead>
<tbody>
<tr>
<td>00:00</td>
<td>0</td>
</tr>
<tr>
<td>00:30</td>
<td>5</td>
</tr>
<tr>
<td>01:00</td>
<td>8</td>
</tr>
<tr>
<td>01:30</td>
<td>9</td>
</tr>
<tr>
<td>02:00</td>
<td>9</td>
</tr>
<tr>
<td>02:30</td>
<td>10</td>
</tr>
<tr>
<td>03:00</td>
<td>12</td>
</tr>
</tbody>
</table>

Test Officer

Leo R. Sedlmeyer CMF
Deputy Fire Chief
MEMORANDUM FOR RECORD

FROM: 115 CES/CEOR
3110 Mitchell Street
Madison WI 53704-2591

SUBJECT: FIRE SUPPRESSION SYSTEM TESTING

1. A check of the Fire Suppression System in Building 414 was accomplished on 23 Jun 04 by Ed Jilbert, Mike Dale, Jim Laminig, Hoyt Halveson.

The test was accomplished in accordance with UFC 3-600-2, the following was tested:

- UV/IR Detectors with JP-8 Pan Fire
- System operation with abort switch
- System operation without abort switch
- Foam Flow
- Foam concentration by Fire Dept.

2. The following discrepancies were noted

None

3. If you have any questions, please call me at (608) 245-4677. Thank you.

HOYT S. HALVERSON, MSgt, WI ANG
Production Controller Construction

cc:
Facility Folder

Dedicated to Excellence
Truax ARFF
Foam Expansion and Drain Time Test

Bldg 414 A   Date   2-Jun-04   Pattern
Operating Pressure Psi @ Pump   Nozzle Flow   Floor Nozzles
Air Temp   58 F   H2o Temp   Wind   NA   Direction   NA

Foam Expansion Test

Gross weight of container   403 G
Empty weight of container   227 G
Net Weight of Foam Sample   176 G

Foam Expansion

\[
\text{Foam Expansion} = \frac{\text{Volume of foam container}}{\text{Net weight of foam sample}}
\]

Volume of foam container   1000 ML
Net weight of foam sample   176 G

5.681818

25% Volume Test

Twenty-five % Volume
Net weight of foam sample   176 G

4

44

Base Lines

<table>
<thead>
<tr>
<th>Conductivity Readings</th>
<th>2%</th>
<th>3%</th>
<th>4%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.04 ms</td>
<td>1.09 ms</td>
<td>1.25 ms</td>
<td></td>
</tr>
</tbody>
</table>

Refact Readings

| 0.5     | 0.75     | 1       |

Actual Test

Conductivity Reading   .86 ms

Refractometer Reading   est. .75

Pan Fire Start         0:00:01   Raw System Foam Cond Reading
Alarm Activation       0:00:05   6.57 ms
Time to activation     0:00:29   Refilling foam Drums
Good Foam pattern      0:01:09   Year   Cond Reading
Sample taken           0:02:08   1990   7.05
                                      1993   6.54

Test Conducted by:
Asst Fire Chief Schultz
FF/EMT Fredrickson

6.795   Average reading
ARFF Conductivity Baseline
Bldg 414 A 02 Jun 2004

Actual Readings for Roof Bumper and

Baseline for 2% 3% 4%

Millisiemens
Truax ARFF
Foam Expansion and Drain Time Test

Bldg 414 B       Date       3-Jun-04
Operating Pressure   Psi @ Pump
Air Temp  56 F  H2o Temp
Nozzle Flow
Wind  NA
Floor Nozzles  Direction NA

Foam Expansion Test

Gross weight of container  406 G
Empty weight of container  227 G
Net Weight of Foam Sample  179 G

Foam Expansion =
Volume of foam container  1000 ML
Net weight of foam sample  179 G

25% Volume Test

Twenty-five % Volume Net weight of foam sample  179 G

Base Lines

<table>
<thead>
<tr>
<th>Conductivity Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2%</td>
</tr>
<tr>
<td>1.04 ms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refract Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
</tr>
</tbody>
</table>

Actual Test

Conductivity Reading  1.06 ms

Refractometer Reading  est. .90

Pan Fire Start  0:00:01
Alarm Activation  0:00:10
Time to activation  0:00:29
Good Foam pattern  0:00:39
Sample taken  0:01:39

Raw System Foam Cond Reading  6.57 ms
Refilling foam Drums

Year   Cond Reading
1990   7.05
1993   6.54

Test Conducted by:
Asst Fire Chief Schultz
FF/EMT Fredrickson

6.795 Average reading
**DATE OF INCIDENT**: 3/8/81  
**DAY OF WEEK**: Friday  
**TIME OF INCIDENT**: 1:30 AM

**DATE REPORTED**: 3/6/81  
**DAY OF WEEK**: Friday  
**TIME REPORTED**: 2:20 AM

**SUBSTANCE INVOLVED**: Jet no. 1 - J-1-4

**QUANTITY**: 1935

**UNITS**: gal.

**ACTION TAKEN**:  
- BY DNR
- SPILLAGE CONTAINED
- CONTAINER CLOSED
- CONTAINMENT TYPE: Dike
- METHOD: Containment

**PERSON OR FIRM RESPONSIBLE**:  
- DNR
- NAME: Jack Norgard
- ADDRESS: Madison, Wis. 53704
- TELEPHONE NUMBER: 241-627-1 (608)

**AFFECTED NEAREST WELL**:
- ADDRESS: Street or Route: 3110 Mitchell St.
- CITY, STATE, ZIP CODE: Madison, Wis. 53704
- POTENTIAL:"-------------------Fished area, 13 gal.

**PHYSICAL CHARACTERISTICS**:  
- SOLID
- LIQUID

**COLOR**: Petroleum

**NAME OF SURFACE WATER**: Stockweiler Creek

**NEAREST SURF. WATER** NEAREST STORM SEWER:  
- FT.: 8,000

**NAME OF SURFACE WATER**: Stockweiler Creek

**NEAREST WELL**
- FT.: > 5,000

**DISTRICT NOTIFIED**:  
- DRAIN. BASIN: 6,12

**DATE INVESTIGATED**:  
- Day: Monday  
- TIME: 8:15 AM

**LIST HUMAN HAZARDS OR CASUALTIES**:  
- NO ACTION
- No REAL
- No POTENTIAL
- No NONE

**ENVIRONMENTAL HAZARD/DAMAGE**:  
- No REAL
- No POTENTIAL

**PERSON INVESTIGATING**:  
- Name: George O'BIFF
- TELEPHONE NUMBER: 608/267-9424

**SIGNATURE**: George O'BiFF

**DATE SIGNED**: 3/9/81

---

**COMMENTS**: 

Spill occurred when storage tank over flowed during loading operation. Material flowed to drainage ditch which was dammed at both ends, material then seeped into ground rapidly. Dammed ditch segment is 100' long. Estimate 50-60 cubic yards be removed, spreed thinning available water side for...
PRELIMINARY ASSESSMENT

128th Tactical Fighter Wing
Wisconsin Air National Guard
Truax Field
Madison, Wisconsin

AUGUST 1988

HAZWRAP SUPPORT CONTRACTOR OFFICE
Oak Ridge, Tennessee 37831
Operated by MARTIN MARIETTA ENERGY SYSTEMS, INC.
For the U.S. DEPARTMENT OF ENERGY under contract DE-AC05-84OR21400
Figure IVA. LOCATION OF SITES 1, 2, AND 3.
128th TFW, WISCONSIN AIR NATIONAL GUARD, TRIAX FIELD, MADISON, WISCONSIN
APPENDIX C-8

EDR ONE-MILE RADIUS WATER WELLS MAP
<table>
<thead>
<tr>
<th>Map ID</th>
<th>WI WELLS</th>
<th>EDR ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2</td>
<td>WI4000000017427</td>
<td></td>
</tr>
</tbody>
</table>

### Physical Setting Source Map Findings

**Direction:** ESE  
**Distance:** 0 - 1/8 Mile  
**Elevation:** Higher

**Database**

<p>| Wi unique: | WM818 |
| County cod: | 13 |
| Complete d: | 01/21/2009 |
| Municipal: | C |
| Municipal1: | MADISON |
| Quar quar: | SW |
| Quar: | NE |
| Section: | 29 |
| Township n: | 8 |
| Range no: | 10 |
| E w: | E |
| Replace re: | Not Reported |
| Cls to amt: | 250,000000000000 |
| Bottom: | 250,000000000000 |
| County wel: | Not Reported |
| District c: | SC |
| Tax parcel: | Not Reported |
| Owner name: | Truax Field |
| Owner mail: | W11366 Blancaue Rd |
| Owner city: | Randolph |
| Owner stat: | WI |
| Owner zip1: | 53956 |
| Owner zip2: | Not Reported |
| Owner are: | Not Reported |
| Owner phon: | Not Reported |
| Owner ph 1: | Not Reported |
| Dnr recev: | 02/12/2009 |
| Dnr rece 1: | / / |
| Dnr rece 2: | / / |
| Constructo: | VAN DE YACHT BILL WTR WELL &amp; SPECIA |
| Construc 1: | 4462 |
| Construc 2: | 3671 MONROE RD |
| Construc 3: | DE PERE |
| Construc 4: | WI |
| Construc 5: | 54115 |
| Construc 6: | 9711 |
| Fire : | Not Reported |
| Well stree: | MITCHELL ST |
| Subdivisio: | Not Reported |
| Lot no: | Not Reported |
| Block no: | Not Reported |
| Govt lot: | Not Reported |
| Well status: | 1 |
| Orig year: | Not Reported |
| Prev well : | Not Reported |
| New well i: | Not Reported |
| Well type : | 1 |
| Other expl: | Not Reported |
| Well categ: | LT |
| Service co: | 1 |
| Facility t: | Test Loop |
| Hicap well: | N |</p>
<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Database</th>
<th>EDR ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>| Hicap prop: | N |
| Highest po: | Y |
| Flood plai: | N |
| Landfill q: | Not Reported |
| Landfill a: | 0 |
| Build over: | Not Reported |
| Build oh a: | 0 |
| Septic tan: | Not Reported |
| Septic t 1: | 0 |
| Sew absorb: | Not Reported |
| Sew abso 1: | 0 |
| Nonconform: | Not Reported |
| Nonconfo 1: | 0 |
| Buried oil: | Not Reported |
| Buried o 1: | 0 |
| Buried pet: | Not Reported |
| Buried p 1: | 0 |
| Shoreline : | Not Reported |
| Shoreline p: | 0 |
| Dwspot hy: | Not Reported |
| Dwspot 1: | 0 |
| Privy code: | Not Reported |
| Privy amt: | 0 |
| Found clwt: | Not Reported |
| Found cl 1: | 0 |
| Found drai: | Not Reported |
| Found dr 1: | 0 |
| Build drai: | Not Reported |
| Build dr 1: | 0 |
| Build dr 2: | Not Reported |
| Build sewe: | Not Reported |
| Build se 1: | 0 |
| Build se 2: | Not Reported |
| Build se 3: | Not Reported |
| Coll sewer: | Not Reported |
| Coll sew 1: | 0 |
| Clewtr sum: | Not Reported |
| Clewtr amt: | 0 |
| Wastewtr s: | Not Reported |
| Wastewtr a: | 0 |
| Pav animal: | Not Reported |
| Pav anim 1: | 0 |
| Animal yar: | Not Reported |
| Animal y 1: | 0 |
| Silo: | Not Reported |
| Silo amt: | 0 |
| Silo type: | Not Reported |
| Barn gutte: | Not Reported |
| Barn gut 1: | 0 |
| Manure pip: | Not Reported |
| Manure p 1: | 0 |
| Manure typ: | Not Reported |
| Manure t 1: | Not Reported |
| Manure sto: | Not Reported |
| Manure s 1: | 0 |
| Manure s 2: | Not Reported |
| Nr 112 amt: | Not Reported |</p>
<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Database</th>
<th>EDR ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nr 112 a 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nr112 text:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr1 dia am:</td>
<td>6.25000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr1 from a:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr1 to amt:</td>
<td>250.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr2 dia am:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr2 from a:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr2 to amt:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr3 dia am:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr3 from a:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr3 to amt:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr4 dia am:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr4 from a:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr4 to amt:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rot mud co:</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rot air co:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rot foam c:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rev rot co:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable bit :</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable bit1:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tem otr ca:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dia temp a:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temp otr r:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove exp:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other drill:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other ex 1:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls dia am:</td>
<td>6.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls dia 1:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls dia 2:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls dia 3:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls desc t:</td>
<td>1 IN. SDR 11 160ps HDPE Closed Loop</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls desc 1:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls desc 2:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls desc 3:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls from a:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls from 1:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls from 2:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls from 3:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls to a 1:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls to a 2:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cls to a 3:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen dia:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen fro:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen to :</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal metho:</td>
<td>Tremie Pipe - Pumped</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal kind :</td>
<td>1.0 Thermal Lite</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal from :</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal to am:</td>
<td>250.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal numbe:</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sacks yard:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal kind1:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal from1:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal to 1:</td>
<td>0.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal num 1:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sacks ya 1:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static wtr:</td>
<td>40.00000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Map ID</td>
<td>Direction</td>
<td>Distance</td>
<td>Elevation</td>
<td>Database</td>
<td>EDR ID Number</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>----------</td>
<td>-----------</td>
<td>----------</td>
<td>---------------</td>
</tr>
</tbody>
</table>

- **Static w 1:** B
- **Pump wtr b:** 40.00000000000
- **Pump gals:** 1.00000000000
- **Pump by co:** M
- **Pump hrs t:** 1.00000000000
- **Well depth:** 12
- **Well abvbe:** A
- **Well dev c:** Y
- **Well disin:** Y
- **Well cappe:** Y
- **Proper sea:** Y
- **Proper s 1:** Not Reported
- **Well cont:** tv
- **Wc sign da:** 01/26/2009
- **Rig op ini:** cv
- **Ro sign da:** 01/26/2009
- **Comment fl:** Not Reported
- **Label sent:** Y
- **Ditch amt:** 0
- **Septic typ:** Not Reported
- **Shoreline1:** Not Reported
- **File creat:** 02/17/2009
- **County tex:** DANE
- **Lat degree:** 43
- **Lat minute:** 7.877
- **Long degree:** 89
- **Long minut:** 20.0522
- **Lat long m:** GPS006
- **Drill casi:** Not Reported
- **Lower rota:** Not Reported
- **Lower ro 1:** Not Reported
- **Lower ro 2:** Not Reported
- **Lower cabl:** Not Reported
- **Temp outer:** Not Reported
- **Varince is:** N
- **Collect se:** Not Reported
- **Collet sew:** 0.00000000000
- **Hicap no:** Not Reported
- **Common wel:** Not Reported
- **Fid 1:** Not Reported
- **Approval n:** Not Reported
- **Approval d:** / / 888888888
- **Record sou:** ELECTRONICALLY SUBMITTED
- **Notifycati:** Not Reported
- **Empty gy:** Not Reported
- **Site id:** W4000000017427
<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Database</th>
<th>EDR ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A3</td>
<td>ESE</td>
<td>1/8 - 1/4 Mile</td>
<td>Higher</td>
<td>WI WELLS</td>
<td>WI4000000020670</td>
</tr>
</tbody>
</table>

Wi unique: UK196
County cod: 13
Complete d: 03/23/2010
Municipal: T
Municipal1: BURKE
Quar quar: SW
Quar: NE
Section: 29
Township n: 8
Range no: 10
E w: E
Replace re: Not Reported
Cls to amt: 240.00000000000
Bottom: 240.00000000000
County wel: Not Reported
District c: SC
Tax parcel: Not Reported
Owner name: MACK, DAVID
Owner mail: 3110 MITCHELL ST #B1210
Owner city: MADISON
Owner stat: WI
Owner zip1: 53704
Owner zip2: Not Reported
Owner are: 608
Owner phon: 245
Owner ph 1: 4563
Dnr receiv: 04/26/2010
Dnr rece 1: / /
Dnr rece 2: / /
Constructo: WEBSTER BRAD & SONS DRILLING INC
Construc 1: 6574
Construc 2: 112 SKYLINE DR  PO BOX 377
Construc 3: ARLINGTON
Construc 4: WI
Construc 5: 53911
Construc 6: 9505
Fire : 3110
Well stree: MITCHELL ST #B500
Subdivisio: TRUAX FIELD
Lot no: Not Reported
Block no: Not Reported
Govt lot: Not Reported
Well status: 1
Orig year: Not Reported
Prev well : Not Reported
New well i: Not Reported
Well type : 1
Other expl: Not Reported
Well categ: L
Service co: Not Reported
Facility t: Not Reported
Hicap well: Not Reported
<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Database</th>
<th>EDR ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hicap prop:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highest po:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flood plai:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill q:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill a:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build over:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build oh a:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Septic tan:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Septic t 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sew absorb:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sew abso 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonconform:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noncon 1 f:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buried oil:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buried o 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buried pet:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buried p 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shoreline :</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shoreline p:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dwspot hy:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dwspot 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Privy code:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Privy amt:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Found clwt:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Found cl 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Found drai:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Found dr 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build drai:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build dr 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build dr 2:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build sewe:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build se 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build se 2:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build se 3:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coll sewer:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coll sew 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clewtr sum:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clewr amt:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wastewr s:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wastewr a:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pav animal:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pav anim 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal yar:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal y 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silo:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silo amt:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silo type:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barn gutte:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barn gut 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure pip:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure p 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure typ:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure t 1:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure sto:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure s 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure s 2:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nr 112 amt:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Map ID</td>
<td>Direction</td>
<td>Distance</td>
<td>Elevation</td>
<td>Database</td>
<td>EDR ID Number</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>----------</td>
<td>-----------</td>
<td>----------</td>
<td>---------------</td>
</tr>
<tr>
<td>Nr 112 a 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nr112 text:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr1 dia am:</td>
<td>6.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr1 from a:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr1 to amt:</td>
<td>240.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr2 dia am:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr2 from a:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr2 to amt:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr3 dia am:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr3 from a:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr3 to amt:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr4 dia am:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr4 from a:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr4 to amt:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rot mud co:</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rot air co:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rot foam c:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rev rot co:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable bit :</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable bit1:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tem otr ca:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dia temp a:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temp otr r:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove exp:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other drill:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other ex 1:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis dia am:</td>
<td>1.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis dia 1:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis dia 2:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis dia 3:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis desc 1:</td>
<td>CENTENNIAL SDR11 70 HOLES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis desc 2:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis desc 3:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis from a:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis from 1:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis from 2:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis from 3:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis to a 1:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis to a 2:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis to a 3:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen dia:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen fro:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen to :</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal metho:</td>
<td>PRESSURE TREMIE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal kind :</td>
<td>BLACK HILLS GEOTHERMAL LITE W/250LBS SAND</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal from :</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal to am:</td>
<td>240.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal numbe:</td>
<td>980</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sacks yard:</td>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal kind1:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal from1:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal to 1:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal num 1:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sacks ya 1:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static wtr:</td>
<td>0.00000000000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Map ID</td>
<td>Direction</td>
<td>Distance</td>
<td>Elevation</td>
<td>Database</td>
<td>EDR ID Number</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>----------</td>
<td>-----------</td>
<td>----------</td>
<td>---------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Static w 1:** Not Reported
- **Pump wtr b:** 0.00000000000
- **Pump gals:** 0.00000000000
- **Pump by co:** Not Reported
- **Pump hrs t:** 0.00000000000
- **Well depth:** 0
- **Well abvbe:** Not Reported
- **Well dev c:** Not Reported
- **Well disin:** Not Reported
- **Well cappe:** Not Reported
- **Proper sea:** Not Reported
- **Proper s 1:** Not Reported
- **Well cont:** RW
- **Wc sign da:** 04/07/2010
- **Rig op ini:** Not Reported
- **Ro sign da:** / / 
- **Comment fl:** Not Reported
- **Label sent:** Y
- **Ditch amt:** 0
- **Septic typ:** Not Reported
- **Shoreline1:** Not Reported
- **File creat:** 06/02/2010
- **County tex:** DANE
- **Lat degree:** 43
- **Lat minute:** 7.863
- **Long degree:** 89
- **Long minut:** 20.02
- **Lat long m:** GPS008
- **Drill casi:** Not Reported
- **Lower rota:** Not Reported
- **Lower ro 1:** Not Reported
- **Lower ro 2:** Not Reported
- **Lower cabl:** Not Reported
- **Temp outer:** Not Reported
- **Varince is:** Not Reported
- **Collect se:** Not Reported
- **Collet sew:** 0.00000000000
- **Hicap no:** Not Reported
- **Common wel:** Not Reported
- **Fid 1:** Not Reported
- **Approval n:** Not Reported
- **Approval d:** / / 
- **Spec capac:** Not Reported
- **Batch:** 1187
- **Record sou:** WELL CONSTRUCTION
- **Notificati:** Not Reported
- **Empty gy:** Not Reported
- **Site id:** W4000000020670
<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Database</th>
<th>EDR ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>West</td>
<td>1/4 - 1/2 Mile</td>
<td>Lower</td>
<td>FED USGS</td>
<td>USGS40001310096</td>
</tr>
</tbody>
</table>

Org. Identifier: USGS-WI  
Formal name: USGS Wisconsin Water Science Center  
Monloc Identifier: USGS-430753089203801  
Monloc name: DN-08/10/E/29-0072  
Monloc type: Well  
Monloc desc: Not Reported  
Huc code: 07090001  
Drainage area value: Not Reported  
Drainage areaUnits: Not Reported  
Contrib drainage area units: Not Reported  
Longitude: -89.3440064  
Latitude: 43.1313835  
Source map scale: 24000  
Horiz Acc measure units: seconds  
Horiz Collection method: Interpolated from map  
Horiz coord refsys: NAD83  
Vert measure units: feet  
Vert measure val: 858.00  
Vert acc measure units: feet  
Vert acc measure val: 5  
Vert collection method: Interpolated from topographic map  
Vert coord refsys: NGVD29  
Country code: US  
Aquifername: Not Reported  
Formation type: Not Reported  
Aquifer type: Not Reported  
Construction date: Not Reported  
Well depth: 258  
Well depth units: ft  
Well hole depth: 258  
Well hole depth units: ft  

Ground-water levels, Number of Measurements: 0
<table>
<thead>
<tr>
<th>Map ID</th>
<th>Database</th>
<th>EDR ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>FED USGS</td>
<td>USGS40001310083</td>
</tr>
</tbody>
</table>

**Map ID**

**Direction:** ESE

**Distance:** 1/2 - 1 Mile

**Elevation:** Higher

**Org. Identifier:** USGS-WI

**Formal name:** USGS Wisconsin Water Science Center

**Monloc Identifier:** USGS-430741089193501

**Monloc name:** DN-08/10E/29-0085

**Monloc type:** Well

**Monloc desc:** Not Reported

**Huc code:** 07070005

**Drainage area value:** Not Reported

**Drainage Units:** Not Reported

**Contrib drain area:** Not Reported

**Contrib drainage units:** Not Reported

**Longitude:** -89.3265061

**Latitude:** 43.1280503

**Source map scale:** 24000

**Horiz Acc measure:** 5

**Horiz Acc measure units:** seconds

**Horiz Collection method:** Interpolated from map

**Horiz coord refs sys:** NAD83

**Vert measure val:** 869.00

**Vert measure units:** feet

**Vert acc measure val:** 5

**Vert acc measure units:** feet

**Vert collection method:** Interpolated from topographic map

**Vertcoord refs sys:** NAD83

**Countrycode:** US

**Aquifername:** Cambrian-Ordovician aquifer system

**Formation type:** Not Reported

**Aquifer type:** Not Reported

**Construction date:** Not Reported

**Well depth:** Not Reported

**Well depth units:** ft

**Wellhole depth:** Not Reported

**Wellhole depth units:** ft

**Ground-water levels, Number of Measurements:** 1

<table>
<thead>
<tr>
<th>Date</th>
<th>Feet below Surface</th>
<th>Feet to Sealevel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1937-01-01</td>
<td>11.00</td>
<td></td>
</tr>
<tr>
<td>Map ID</td>
<td>Direction</td>
<td>Distance</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>13</td>
<td>SW</td>
<td>1/2 - 1 Mile</td>
</tr>
</tbody>
</table>

Wi unique: YJ743  
County cod: 13  
Complete d: 08/17/2013  
Municipal: T  
Municipal1: MADISON  
Quar quar: SE  
Quar: SE  
Section: 30  
Township n: 8  
Range no: 10  
E w: E  
Replace re: 24 GEOTHERMAL BORES  
Cls to amt: 255.000000000000  
Bottom: 255.000000000000  
County wel: 99  
District c: SC  
Tax parcel: Not Reported  
Owner name: DANE COUNTY AIRPORT, SRE  
Owner mail: 4000 INTERNATIONAL LANE  
Owner city: MADISON  
Owner stat: WI  
Owner zip1: 53704  
Owner zip2: Not Reported  
Owner area: 608  
Owner phon: 790  
Owner ph 1: 6601  
Dnr recev: 08/23/2013  
Dnr rece 1: / /  
Dnr rece 2: / /  
Constructo: SAM’S WELL DRILLING INC  
Construc 1: 370  
Construc 2: PO BOX 150  
Construc 3: RANDOLPH  
Construc 4: WI  
Construc 5: 53956  
Construc 6: 0150  
Fire : 4000  
Well stree: INTERNATIONAL LANE, MADISON  
Subdivisio: Not Reported  
Lot no: Not Reported  
Block no: Not Reported  
Govt lot: Not Reported  
Well statu: 1  
Orig year: Not Reported  
Prev well : Not Reported  
New well i: Not Reported  
Well type : 1  
Other expl: Not Reported  
Well categ: L  
Service co: 1  
Facility t: GEOTHERMAL  
Hicap well: N
<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Database</th>
<th>EDR ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ME</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>112</td>
</tr>
</tbody>
</table>

<p>| Hicap prop: | N |
| Highest po: | Y |
| Flood plai: | N |
| Landfill q: | Not Reported |
| Landfill a: | 0 |
| Build over: | Not Reported |
| Build oh a: | 0 |
| Septic tan: | Not Reported |
| Septic t 1: | 0 |
| Sew absorb: | Not Reported |
| Sew abso 1: | 0 |
| Nonconform: | Not Reported |
| Nonconfo 1: | 0 |
| Buried oil: | Not Reported |
| Buried o 1: | 0 |
| Buried pet: | Not Reported |
| Buried p 1: | 0 |
| Shoreline : | Not Reported |
| Shoreline p: | 0 |
| Dwnspt hy: | Not Reported |
| Dwnspt 1: | 0 |
| Privy code: | Not Reported |
| Privy amt: | 0 |
| Found clwt: | Not Reported |
| Found cl 1: | 0 |
| Found drai: | Not Reported |
| Found dr 1: | 0 |
| Build drai: | Not Reported |
| Build dr 1: | 0 |
| Build dr 2: | Not Reported |
| Build sewe: | Not Reported |
| Build se 1: | 0 |
| Build se 2: | Not Reported |
| Build se 3: | Not Reported |
| Coll sewer: | Not Reported |
| Coll sew 1: | 0 |
| Clewtr sum: | Not Reported |
| Clewtr amt: | 0 |
| Wastewtr s: | Not Reported |
| Wastewtr a: | 0 |
| Pav animal: | Not Reported |
| Pav anim 1: | 0 |
| Animal yar: | Not Reported |
| Animal y 1: | 0 |
| Silo: | Not Reported |
| Silo amt: | 0 |
| Silo type: | Not Reported |
| Barn gutte: | Not Reported |
| Barn gut 1: | 0 |
| Manure pip: | Not Reported |
| Manure p 1: | 0 |
| Manure typ: | Not Reported |
| Manure t 1: | Not Reported |
| Manure sto: | Not Reported |
| Manure s 1: | 0 |
| Manure s 2: | Not Reported |
| Nr 112 amt: | Not Reported |</p>
<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Database</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nr 112 a 1:</td>
<td>0</td>
<td>6.000000000000</td>
<td>0.000000000000</td>
<td>Dr1 to amt: 255.000000000000</td>
</tr>
<tr>
<td>Nr112 text:</td>
<td>Not Reported</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Dr2 to amt: 0.000000000000</td>
</tr>
<tr>
<td>Dr1 dia am:</td>
<td>255.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Dr3 to amt: 0.000000000000</td>
</tr>
<tr>
<td>Dr1 from a:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Dr4 to amt: 0.000000000000</td>
</tr>
<tr>
<td>Dr2 dia am:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Rot mud co: X</td>
</tr>
<tr>
<td>Dr2 from a:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Rot air co: Not Reported</td>
</tr>
<tr>
<td>Dr3 dia am:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Rot foam c: Not Reported</td>
</tr>
<tr>
<td>Dr3 from a:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Rev rot co: Not Reported</td>
</tr>
<tr>
<td>Dr4 dia am:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cable bit: Not Reported</td>
</tr>
<tr>
<td>Dr4 from a:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cable bit1: 0.000000000000</td>
</tr>
<tr>
<td>Dr5 dia am:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Tem otr ca: Not Reported</td>
</tr>
<tr>
<td>Dr5 from a:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Dia temp a: 0.000000000000</td>
</tr>
<tr>
<td>Dr6 dia am:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Temp otr r: Not Reported</td>
</tr>
<tr>
<td>Dr6 from a:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Remove exp: Not Reported</td>
</tr>
<tr>
<td>Dr7 dia am:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Other drill: Not Reported</td>
</tr>
<tr>
<td>Dr7 from a:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Other ex 1: Not Reported</td>
</tr>
<tr>
<td>Dr8 dia am:</td>
<td>1.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls dia am: 1.000000000000</td>
</tr>
<tr>
<td>Dr8 from a:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls dia 1: 0.000000000000</td>
</tr>
<tr>
<td>Dr9 dia am:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls dia 2: 0.000000000000</td>
</tr>
<tr>
<td>Dr9 from a:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls dia 3: 0.000000000000</td>
</tr>
<tr>
<td>Dr10 dia am:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls desc t: DR-11, 200 PSI 4710 DD TECHNOLOGIES 24 BORES</td>
</tr>
<tr>
<td>Dr10 from a:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls desc 1: Not Reported</td>
</tr>
<tr>
<td>Dr11 dia am:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls desc 2: Not Reported</td>
</tr>
<tr>
<td>Dr12 dia am:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls desc 3: Not Reported</td>
</tr>
<tr>
<td>Cls from a:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls from 1: 0.000000000000</td>
</tr>
<tr>
<td>Cls from 1:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls from 2: 0.000000000000</td>
</tr>
<tr>
<td>Cls from 2:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls from 3: 0.000000000000</td>
</tr>
<tr>
<td>Cls from 3:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls to a 1: 0.000000000000</td>
</tr>
<tr>
<td>Cls to a 1:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls to a 2: 0.000000000000</td>
</tr>
<tr>
<td>Cls to a 2:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Cls to a 3: 0.000000000000</td>
</tr>
<tr>
<td>Cls to a 3:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Screen dia: 0.000000000000</td>
</tr>
<tr>
<td>Screen dia:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Screen fro: 0.000000000000</td>
</tr>
<tr>
<td>Screen fro:</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Screen to : 0.000000000000</td>
</tr>
<tr>
<td>Screen to :</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>0.000000000000</td>
<td>Seal metho: Tremie Pipe - Pumped</td>
</tr>
<tr>
<td>Seal kind :</td>
<td>THERMAL GROUT SELECT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal from :</td>
<td>0.000000000000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal to : 255.000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal to am: 255.000000000000</td>
<td>Seal numbe: 260</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sacks yard: Not Reported</td>
<td>Seal kind1: Not Reported</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal kind1: Not Reported</td>
<td>Seal from1: 0.000000000000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal from1: 0.000000000000</td>
<td>Seal to 1: 0.000000000000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal to 1: 0.000000000000</td>
<td>Seal num 1: Not Reported</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal num 1: Not Reported</td>
<td>Sacks ya 1: Not Reported</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sacks ya 1: Not Reported</td>
<td>Depth: Not Reported</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth: Not Reported</td>
<td>Static wtr: 1.000000000000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS**

<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Database</th>
<th>EDR ID Number</th>
</tr>
</thead>
</table>

<p>| Static w 1: | B |
| Pump wtr b: | 1.00000000000 |
| Pump gals : | 1.00000000000 |
| Pump by co: | M |
| Pump hrs t: | 1.00000000000 |
| Well depth: | 18 |
| Well abvbe: | A |
| Well dev c: | Y |
| Well disin: | Y |
| Well cappe: | Y |
| Proper sea: | Not Reported |
| Proper s 1: | Not Reported |
| Well cont : | JVG |
| Wc sign da: | 08/17/2013 |
| Rig op ini: | SS |
| Ro sign da: | 08/17/2013 |
| Comment fl: | Not Reported |
| Label sent: | Y |
| Ditch amt: | 0 |
| Septic typ: | Not Reported |
| Shoreline1: | Not Reported |
| File creat: | 08/26/2013 |
| County tex: | DANE |
| Lat degree: | 43 |
| Lat minute: | 7.58 |
| Long degree: | 89 |
| Long minut: | 20.755 |
| Lat long m: | GPS008 |
| Drill casi: | Not Reported |
| Lower rota: | Not Reported |
| Lower ro 1: | Not Reported |
| Lower ro 2: | Not Reported |
| Lower cabl: | Not Reported |
| Temp outer: | Not Reported |
| Varince is: | N |
| Collect se: | Not Reported |
| Collet sew: | 0.00000000000 |
| Hicap no: | Not Reported |
| Common wel: | Not Reported |
| Fid 1: | Not Reported |
| Approval n: | Not Reported |
| Approval d: | / / |
| Spec capac: | Not Reported |
| Batch: | 888888888 |
| Record sou: | ELECTRONICALLY SUBMITTED |
| Notificati: | Not Reported |
| Empty gy: | Not Reported |
| Site id: | W40000000030589 |</p>
<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Database</th>
<th>EDR ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>NE</td>
<td>1/2 - 1 Mile</td>
<td>Lower</td>
<td>FED USGS</td>
<td>USGS40001310157</td>
</tr>
</tbody>
</table>

Org. Identifier: USGS-WI
Formal name: USGS Wisconsin Water Science Center
Monloc Identifier: USGS-430821089193501
Monloc name: DN-08/10E/20-0060
Monloc type: Well
Monloc desc: Not Reported
Huc code: 07090001
Drainagearea Units: Not Reported
Contrib drainagearea units: Not Reported
Longitude: -89.326506
Horiz Acc measure: 5
Horiz Collection method: Interpolated from map
Horiz coord refsys: NAD83
Vert measure units: feet
Vert measure val: 858.00
Vert accmeasure units: feet
Vert accmeasure units: 5
Vert Collection method: Interpolated from topographic map
Vertcoord refsys: NGVD29
Countrycode: US
Aquifername: Cambrian-Ordovician aquifer system
Formation type: Not Reported
Aquifer type: Not Reported
Construction date: Not Reported
Welldepth units: ft
Welldepth: 321
Wellholedepth units: ft
Wellholedepth: 321

Ground-water levels, Number of Measurements: 1

<table>
<thead>
<tr>
<th>Date</th>
<th>Feet below Surface</th>
<th>Feet to Sea level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1937-01-01</td>
<td>6.50</td>
<td></td>
</tr>
</tbody>
</table>

Interpolated from map
Horiz Acc measure units: seconds
Source map scale: 24000
NAD83
Vert measure units: feet
Vert accmeasure units: feet
Vert Collection method: Interpolated from topographic map
Vertcoord refsys: NGVD29
Countrycode: US
Aquifername: Cambrian-Ordovician aquifer system
Formation type: Not Reported
Aquifer type: Not Reported
Construction date: Not Reported
Welldepth units: ft
Welldepth: 321
Wellholedepth units: ft
Wellholedepth: 321

Ground-water levels, Number of Measurements: 1

<table>
<thead>
<tr>
<th>Date</th>
<th>Feet below Surface</th>
<th>Feet to Sea level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1937-01-01</td>
<td>6.50</td>
<td></td>
</tr>
</tbody>
</table>
Map ID: 22  
Direction: NW  
Distance: 1/2 - 1 Mile  
Elevation: Lower  

<table>
<thead>
<tr>
<th>Database</th>
<th>EDR ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>FED USGS</td>
<td>USGS40001310164</td>
</tr>
</tbody>
</table>

Org. Identifier: USGS-WI  
Formal name: USGS Wisconsin Water Science Center  
Monloc Identifier: USGS-430825089204601  
Monloc name: DN-08/10E/19-0115  
Monloc type: Well  
Monloc desc: Not Reported  
Huc code: 07090001  
Drainagearea Units: Not Reported  
Contrib drainagearea units: Not Reported  
Longitude: -89.3462286  
Sourcemap scale: 24000  
Horiz Acc measure: 5  
Horiz Coord method: Interpolated from topographic map  
Vert measure units: feet  
Vert coord refsys: NAD83  
Vert acc measure units: feet  
Vert Collection method: Interpolated from topographic map  
Vertcoord refsys: NGVD29  
Countrycode: US  
Aquifername: Cambrian-Ordovician aquifer system  
Formation type: Not Reported  
Aquifer type: Not Reported  
Construction date: Not Reported  
Well depth: Not Reported  
Well hole depth: 180  
Well depth units: ft  
Well hole depth units: ft  
Ground-water levels, Number of Measurements: 1  

<table>
<thead>
<tr>
<th>Date</th>
<th>Feet below</th>
<th>Feet to</th>
<th>Surface</th>
<th>Seal level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1954-03-01</td>
<td>40.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Map ID</td>
<td>Direction</td>
<td>Distance</td>
<td>Elevation</td>
<td>Database</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>----------</td>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>24</td>
<td>NE</td>
<td>1/2 - 1 Mile</td>
<td>Lower</td>
<td>WI WELLS</td>
</tr>
</tbody>
</table>

Wi unique: WO622  
County cod: 13  
Complete d: 02/19/2010  
Municipal: C  
Municipal1: MADISON  
Quar quar: NE  
Quar: SE  
Section: 20  
Township n: 8  
Range no: 10  
E w: E  
Replace re: Not Reported  
Cls to amt: 300.00000000000  
Bottom: 300.00000000000  
County wel: Not Reported  
District c: SC  
Tax parcel: Not Reported  
Owner name: Promega Corp  
Owner mail: 2800 Woods Hollow Rd  
Owner city: Madison  
Owner stat: WI  
Owner zip1: 53711  
Owner zip2: Not Reported  
Owner are: Not Reported  
Owner phon: Not Reported  
Owner ph 1: Not Reported  
Dnr recev: 02/24/2010  
Dnr rece 1: / /  
Dnr rece 2: / /  
Constructo: GROUND SOURCE INC  
Construc 1: 4462  
Construc 2: 3671 MONROE RD  
Construc 3: DE PERE  
Construc 4: WI  
Construc 5: 54115  
Construc 6: 9711  
Fire : Not Reported  
Well stree: 3792 CORBEN CT  
Subdivisio: Not Reported  
Lot no: Not Reported  
Block no: Not Reported  
Govt lot: Not Reported  
Well status: 1  
Orig year: Not Reported  
Prev well : Not Reported  
New well i: Not Reported  
Well type : 1  
Other expl: Not Reported  
Well categ: L  
Service co: 1  
Facility t: closed loop field  
Hicap well: N
<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Database</th>
<th>EDR ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hicap prop:</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highest po:</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flood plan:</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill q:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill a:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build over:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build oh a:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Septic tan:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Septic t 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sew absorb:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sew abso 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonconform:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonconfo 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buried oil:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buried o 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buried pet:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buried p 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shoreline:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shoreline p:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dwspot hy:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dwspot 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Privy code:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Privy amt:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Found clwt:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Found cl 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Found drai:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Found dr 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build drai:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build dr 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build dr 2:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build sewe:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build se 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build se 2:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build se 3:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coll sewer:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coll sew 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clewtr sum:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clewtr amt:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wastewtr s:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wastewtr a:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pav animal</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pav anim 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal yar:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal y 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silo:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silo amt:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silo type:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barn gutte:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barn gut 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure pip:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure p 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure typ:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure t 1:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure sto:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure s 1:</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manure s 2:</td>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Database</th>
<th>EDR ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nr 112 a 1:</td>
<td>0</td>
<td>Dr1 dia am:</td>
<td>6.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nr 112 text:</td>
<td>Not Reported</td>
<td>Dr1 from a:</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr1 to amt:</td>
<td>300.000000000000</td>
<td>Dr2 dia am:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr2 from a:</td>
<td>0.000000000000</td>
<td>Dr2 to amt:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr2 dia am:</td>
<td>0.000000000000</td>
<td>Dr3 from a:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr3 to amt:</td>
<td>0.000000000000</td>
<td>Dr3 dia am:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr3 from a:</td>
<td>0.000000000000</td>
<td>Dr4 dia am:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr4 from a:</td>
<td>0.000000000000</td>
<td>Dr4 to amt:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr4 dia am:</td>
<td>0.000000000000</td>
<td>Rot mud co:</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rot air co:</td>
<td>Not Reported</td>
<td>Rot foam c:</td>
<td>Not Reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rev rot co:</td>
<td>Not Reported</td>
<td>Cable bit:</td>
<td>Not Reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable bit 1:</td>
<td>0.000000000000</td>
<td>Tem otr ca:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dia temp a:</td>
<td>Not Reported</td>
<td>Temp otr r:</td>
<td>Not Reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove exp:</td>
<td>Not Reported</td>
<td>Other drill:</td>
<td>Not Reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other ex 1:</td>
<td>Not Reported</td>
<td>Cis dia am:</td>
<td>6.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis dia 1:</td>
<td>0.000000000000</td>
<td>Cis dia 2:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis dia 3:</td>
<td>0.000000000000</td>
<td>Cis desc 1:</td>
<td>1.25 IN. SDR 11 160psi Closed Loop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis desc 2:</td>
<td>Not Reported</td>
<td>Cis desc 3:</td>
<td>Not Reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis from a:</td>
<td>0.000000000000</td>
<td>Cis from 1:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis from 2:</td>
<td>0.000000000000</td>
<td>Cis to a 1:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cis to a 2:</td>
<td>0.000000000000</td>
<td>Cis to a 3:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen dia:</td>
<td>0.000000000000</td>
<td>Screen fro:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen to:</td>
<td>0.000000000000</td>
<td>Seal metho:</td>
<td>Bradenhead</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal kind:</td>
<td>Thermal Lite 1.0</td>
<td>Seal from:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal to amt:</td>
<td>300.000000000000</td>
<td>Seal num:</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal yrds:</td>
<td>Not Reported</td>
<td>Seal kind 1:</td>
<td>Not Reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal from 1:</td>
<td>0.000000000000</td>
<td>Seal to 1:</td>
<td>0.000000000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal num 1:</td>
<td>Not Reported</td>
<td>Sacks yard:</td>
<td>Not Reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sacks ya 1:</td>
<td>Not Reported</td>
<td>Depth:</td>
<td>Not Reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static wtr:</td>
<td>10.000000000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Map ID</td>
<td>Direction</td>
<td>Distance</td>
<td>Elevation</td>
<td>Database</td>
<td>EDR ID Number</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>----------</td>
<td>-----------</td>
<td>----------</td>
<td>---------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static w 1:</td>
<td>B</td>
</tr>
<tr>
<td>Pump wtr b:</td>
<td>10.000000000000</td>
</tr>
<tr>
<td>Pump gals:</td>
<td>1.000000000000</td>
</tr>
<tr>
<td>Pump by co:</td>
<td>M</td>
</tr>
<tr>
<td>Pump hrs t:</td>
<td>1.000000000000</td>
</tr>
<tr>
<td>Well depth:</td>
<td>12</td>
</tr>
<tr>
<td>Well abvbe:</td>
<td>A</td>
</tr>
<tr>
<td>Well dev c:</td>
<td>Y</td>
</tr>
<tr>
<td>Well disin:</td>
<td>Y</td>
</tr>
<tr>
<td>Well cappe:</td>
<td>Y</td>
</tr>
<tr>
<td>Proper sea:</td>
<td>Y</td>
</tr>
<tr>
<td>Proper s 1:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Well cont :</td>
<td>tv</td>
</tr>
<tr>
<td>Wc sign da:</td>
<td>02/19/2010</td>
</tr>
<tr>
<td>Rig op ini:</td>
<td>cv</td>
</tr>
<tr>
<td>Ro sign da:</td>
<td>02/19/2010</td>
</tr>
<tr>
<td>Comment fl:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Label sent:</td>
<td>Y</td>
</tr>
<tr>
<td>Ditch amt:</td>
<td>0</td>
</tr>
<tr>
<td>Septic typ:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Shoreline1:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>File creat:</td>
<td>02/26/2010</td>
</tr>
<tr>
<td>County tex:</td>
<td>DANE</td>
</tr>
<tr>
<td>Lat degree:</td>
<td>8.5316</td>
</tr>
<tr>
<td>Lat minute:</td>
<td>89</td>
</tr>
<tr>
<td>Long degree:</td>
<td>19.5516</td>
</tr>
<tr>
<td>Long minu:</td>
<td>GPS006</td>
</tr>
<tr>
<td>Drill casi:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Lower rota:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Lower ro 1:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Lower ro 2:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Lower cabi:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Temp outer:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Varince is:</td>
<td>N</td>
</tr>
<tr>
<td>Collect se:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Collet sew:</td>
<td>0.000000000000</td>
</tr>
<tr>
<td>Hicap no:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Common wel:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Fid 1:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Approval n:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Approval d:</td>
<td>/ /</td>
</tr>
<tr>
<td>Spec capac:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Batch:</td>
<td>88888888888</td>
</tr>
<tr>
<td>Record sou:</td>
<td>ELECTRONICALLY SUBMITTED</td>
</tr>
<tr>
<td>Notificati:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Empty gy:</td>
<td>Not Reported</td>
</tr>
<tr>
<td>Site id:</td>
<td>W4000000020239</td>
</tr>
</tbody>
</table>
APPENDIX C-10

EDR POTENTIALLY ENVIRONMENTALLY SENSITIVE AREAS MAP