

GEOTECHNICAL • CONSTRUCTION MATERIALS/NDT • ENVIRONMENTAL TESTING • INDOOR AIR QUALITY

BUILDING DEMOLITION AT SOUTH DAKOTA HUMAN SERVICES CENTER

Last year, we wrote about this project, and it is just about winding down now (it takes a while to spend \$6 million). This project began in early 2013.

The South Dakota Human Services Center is a psychiatric and chemical dependency hospital operated by the State of South Dakota, located in Yankton. When this project was begun, it was not certain how much work could be completed with the appropriated funds. As work was bid and completed, it became apparent that some additional building demolition could be conducted.

In 2014, two buildings, a very large Power Plant, and a Women's Detention Center, were demolished. This included utility disconnections, additional utility tunnel demolition, asbestos removal, hazardous material removal (fluorescent lamp bulbs and ballasts, mercury items, water testing chemicals, remaining chemicals, etc.).

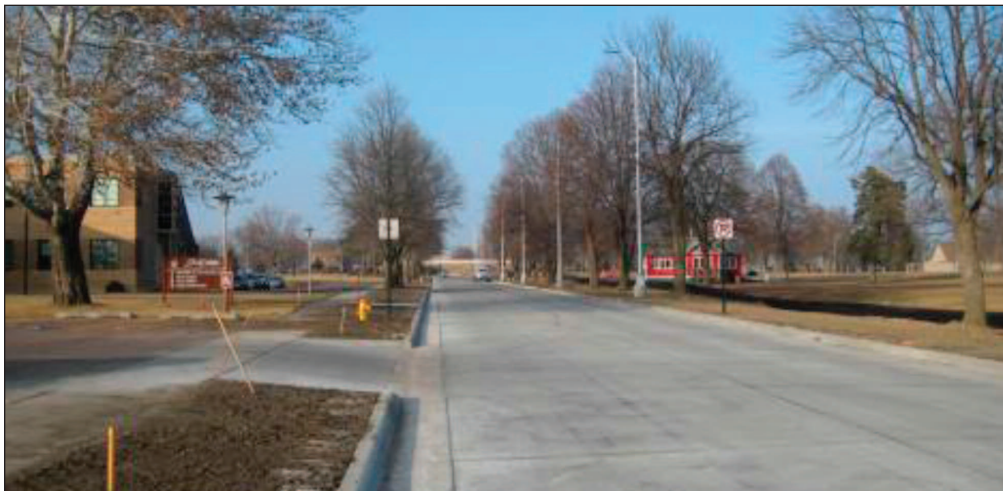


Several items were salvaged prior to demolition, including newer heating units, and an emergency generator, two air compressors, and several electrical components. Demolition included removal of 6 large aboveground storage tanks that were used for heating oil storage after the power plant fuel was converted from coal. The remaining contents on the tank interiors (approximately 6400 gallons of fuel oil) were also removed and recycled.

Besides the building demolition, a new concrete road with new roadway lighting has

been constructed, and water and storm sewer lines installed. There were also electrical modifications (transformers removed/installed, connections, and switches), building automation modifications, and underground natural gas line modifications. A 3000 gallon fuel oil underground storage tank adjacent to the former Power Plant building was also removed under the SD DENR Abandoned Tank Program.

Recently, site restoration has been completed, including topsoil placement and seeding.



909 East 50th Street North
Sioux Falls, SD 57104

Phone: 605-335-5512
Toll Free: 800-354-5512
Fax: 605-335-0773

www.geotekeng.com

VOLUME 3, ISSUE 1

SUMMER 2015

INSIDE THIS ISSUE:

- Building Demolition at South Dakota Human Services Center *Page 1*
- AG Chemical Fire in South Dakota *Pages 2 & 3*
- "New" EPA Asbestos Regulations *Pages 2 & 3*
- Ultrasonic Coating Thickness Gauge *Page 3*
- Sanford-Jackrabbit Athletic Complex *Page 4*

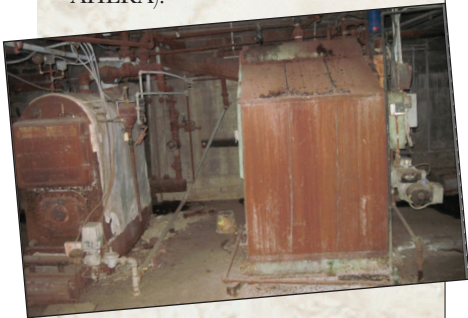


Demolition at the South Dakota Human Services Center in Yankton

“NEW” EPA ASBESTOS REGULATIONS

Somewhat frequently, we receive telephone calls asking for a building asbestos survey to facilitate a planned demolition, so the caller can comply with the “new” asbestos regulations. However, the EPA’s asbestos rule for commercial and public structures has been around for more than 20 years. Apparently, the rules are only new to the caller!

The EPA’s rule on asbestos for most commercial and public buildings is the National Emissions Standards for Hazardous Air Pollutants (NESHAP) under 40 CFR 61 (there is also an EPA asbestos rule for most school buildings, the Asbestos Hazard Emergency Response Act, or AHERA).



Asbestos is a fibrous mineral that can cause various diseases such as mesothelioma and lung cancer. It was used extensively in older buildings due to its fire resistant properties. Common materials suspected to contain asbestos are pipe insulation, boiler insulation, spray-on fireproofing, spray-on acoustical ceilings, ceiling tiles, floor tiles and mastic, etc.

The NESHAP rule applies to a facility, which is any institutional, commercial, public, industrial or residential structure, installation, or building (excluding residential buildings having four or few units). If the facility was previously subject to the rule, it is not excluded, regardless of current use or function (i.e. a commercial building converted to a single-family residence). Rule interpretation has further applied the rule to two or more dwelling units involved in one project, and perhaps even one dwelling unit if it is part of a

Continued on page 3

AG CHEMICAL FIRE IN SOUTH DAKOTA

On November 19, 2014, a fire occurred in a newly constructed agronomy warehouse. The warehouse contained approximately 44,000 gallons of crop protection chemicals and 6000 pounds of crop nutrients. The liquids were contained in tote size (intermediate bulk containers) and smaller packages (i.e. jugs). The building had been constructed with a concrete floor with 6” high integrated concrete curb for spill containment.

The local fire department arrived on scene at about 3:00 am and used minimal water on the fire, opting to let it burn in place vs. creating significant water/chemical runoff. The building was completely destroyed. With the exception of about 100 small jugs, all other liquid containers were breached or totally consumed by the fire. The liquid lost from the breached containers was generally contained by the building’s spill containment. Drainage was blocked by the owner’s personnel by placing earth berms in adjacent ditches (at the ends of culverts) to intercept potential liquid runoff.

GeoTek was contacted by the owner around 4:30 am to assist with monitoring the down-wind smoke plume. GeoTek personnel arrived on-site shortly after 6:30 am and initiated monitoring of the down-wind commercial and residential area by 7:15 am. Numerous down-



wind monitoring sites were established and checked every 2 hours during the day, overnight and into late afternoon the following day. The monitoring was performed using both direct reading instruments and by collecting samples for laboratory analysis. The results of the direct reading

soil was scraped up. Samples were collected to qualify the soils for disposal and also to document contaminants remaining.

GeoTek worked with the owner’s personnel, a local excavation contractor and a vacuum truck company to complete cleanup of the



data were provided to the Fire Department Incident Commander on a regular basis.

The destroyed warehouse yard’s gravel surface had visible soot/ash, which was scraped up and stockpiled on plastic. Likewise, visibly stained surface

building over the next several days. During cleanup operations, a fire investigator was present during a few initial days to attempt to determine a cause for the fire. Entrance into the building footprint during cleanup operations was generally limited to Hazmat trained GeoTek personnel. Standing liquids in the containment floor were collected with a vacuum truck and transferred to temporary storage containers and a 20,000 gallon frac tank that had been mobilized to the site. The building debris and remaining contents were sorted, mostly with an excavator. Scrap metal was placed in several roll off containers. Other debris was stockpiled on the concrete building slab.

Continued on page 3

ULTRASONIC COATING THICKNESS GAUGE

GeoTek recently supplemented our coating measurement capabilities by acquiring a new DeFelsko PosiTector® coating thickness gauge. It is used for non-destructive measurements of coatings by using ultrasound technology. We use it primarily to measure thickness of sprayed vapor barriers and intumescent fire proofing paint. The advantage of the PosiTector gauge is that the ultrasonic probes are all interchangeable. The PosiTector 6000 probe will measure the thickness (0 - 500 mils) of coatings applied to ferrous substrates (i.e. steel beams and columns), while the PosiTector 200 probe can measure thickness (2 - 300 mils) of coatings applied to plastic, fiberglass, plywood, concrete, masonry and other rigid substrates. The DeFelsko PosiTector coating thickness gauge conforms to both ASTM

and ISO standards and is calibrated to NIST standards. Remember the thickness of a coating is very important. Too

thin of a coating will not work as desired. Too thick of a coating can get expensive and may not function as desired.



AG CHEMICAL FIRE IN SOUTH DAKOTA

Continued from page 2

Samples of the various wastes were collected for laboratory analysis to qualify the materials for disposal. The majority of the

recovered liquids, tanks of liquid with solids, debris and soil piles, and drums of personal protective equipment (suits, gloves, boots, etc.).

In March 2015, a new building was constructed in the same location as the former building. The new containment floor has an 8" high integrated

concrete curb for spill containment, which exceeds state requirements

The SD Department of Environment and Natural Resources is reviewing the data collected during the project to determine what, if any, additional testing is necessary.



metal was determined to be suitable for recycling. The liquids and debris have been disposed of at out of state disposal facilities.

Wastes collected included roll-off containers of metal,



“NEW” EPA ASBESTOS REGULATIONS

Continued from page 2
commercial project.

Interestingly, unlike the asbestos in schools rule, there is no age exemption for newer buildings in the NESHAP rule. Presumably, you could construct a building today, and renovation tomorrow would be subject to the rule. If you thought asbestos hasn't been used in building products for years, you would be wrong. In 2012, 2.3 million pounds of asbestos was imported into the United States.

Among other things, the rule requires that facilities undergoing renovation or demolition be thoroughly inspected. There are requirements for notification (to EPA or a state agency) of all demolitions, and renovations above certain sizes. Even demolition by intentional burning is covered. And, there are also procedures for asbestos emissions control.

What if you don't think there is any asbestos in the structure? A licensed asbestos inspector is the person who can determine whether there are any suspect materials present, and if present, can collect samples for off-site laboratory analysis. Materials with greater than 1% asbestos content are considered asbestos containing for the purpose of the rule.

Can a person just assume the building has asbestos and forego testing? This approach may work with certain materials/buildings/states, but not in all cases.

Depending upon the material and condition, some asbestos materials such as asphalt roofing products or resilient floor covering may be allowed to remain in place for demolition. However, before the demolition is conducted, you will want to ascertain what state/ federal solid waste rules may apply and whether the permitted facility accepting the demolition debris can and will accept asbestos content within the debris.

When planning renovation or demolition, please contact GeoTek staff for the most up to date information on what rules may or may not apply to a proposed project.



909 East 50th Street North
Sioux Falls, SD 57104

SANFORD-JACKRABBIT ATHLETIC COMPLEX

The new multi-purpose indoor competition and training facility opened in the fall of 2014 on the campus of South Dakota State University. The facility is located north of Coughlin-Alumni Stadium. The privately funded \$35 million project is believed to be the largest facility of its kind at the NCAA Division I level.

The facility has a footprint of about 525 feet by 285 feet and height of over 70 feet. The facility includes an eight-lane, 300 meter track surrounding an 80 yard football field of soy based synthetic turf. The facility has seating for 1,000 fans. In addition to athletic and strength training, the facility has space for sports medicine, physical therapy, hydrotherapy, observation rooms and office facilities.

As the project's geotechnical engineer, GeoTek was retained

by the Owner to complete a test boring program and provide geotechnical consulting as part of the design team. During construction GeoTek completed materials testing services for the project. Other local firms playing key roles in the project included Henry Carlson Company-JE Dunn (construction manager at risk), Architecture Incorporated (associate architect), Banner Associates (civil), Structural Engineering Associates (associate structural engineer), Bowes Construction (earthwork), and Peska Construction (concrete).

The new facility is expected to help recruiting and retention – not only for student athletes but also for students who just want to be fans. The facility is expected to host both college and high school events in the years to come.

