

# Schedule

- Presentation of UURI results (30-35 minutes)
  - ▶ RI Results (Phase III UURI and brief review of Phase I and II RI)
  - ▶ Risk Assessment Results
  - ▶ Introduce the LOOW Management Action Plan
- **Presentation and Update on Niagara Falls Storage Site (NFSS) (10 minutes)**
- Poster breakout session (30 minutes)
  - ▶ Station 1 – General information and Management Action Plan parcel grouping and methodology
  - ▶ Station 2 – UURI Report available for review
  - ▶ Station 3 – Summary of risk assessment results from selected exposure units
  - ▶ Station 4 – U.S. Department of Energy
- Round Table Discussion (1 hour and 30 minutes)



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Slide 1

The next portion of the presentation will discuss radiological sampling of LOOW underground utility lines north and west of the Niagara Falls Storage Site (NFSS) and provide a brief update on the NFSS Remedial Investigation Report Addendum work.

## LOOW Underground Utilities Radiological Investigation

- On the NFSS, radiological contamination exists within former LOOW Underground Utility Lines  
(Source: NFSS Remedial Investigation Report, December 2007)
- Samples for radiological analysis taken in tandem with LOOW Underground Utility RI sampling between Aug & Oct 2006 to determine the potential for off-site migration
- 60 samples were collected – including sludge and wastewater within the pipes as well as soil underneath
- Each sample, at a minimum, analyzed for uranium, thorium, and radium
- Fact sheet and data released October 2007
- Samples compared to background as established in the NFSS RI Report



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Slide 2

The NFSS Remedial Investigation Report (RIR), released in December 2007, indicated that radiological contamination existed in wastewater and sediment within the sanitary sewer and acid waste lines on the NFSS property. Because these lines lead to the wastewater treatment plant and subsequently the 30" outfall line (both of which are off the NFSS property), sampling was undertaken under the Formerly Utilized Sites Remedial Action Program (FUSRAP) to determine if radiological contamination had spread from the NFSS property. During this investigation these lines were sealed at the northern portion of the NFSS border to prevent future off-site movement of contaminants currently within the lines at NFSS.

During the LOOW Underground Utility Remedial Investigation (UURI), 60 samples were collected under FUSRAP in tandem with the LOOW investigation for radiological analysis. Sludge and wastewater within the pipes along with the surrounding soil were analyzed at a minimum for uranium, thorium and radium. The full extent of parameters analyzed included actinium, bismuth, cesium, cobalt, lead, potassium, protactinium & thallium. No initial plutonium or strontium analysis was conducted since these were not listed as radiological contaminants in the NFSS underground lines as a result of sediment and wastewater sampling of onsite pipelines. A fact sheet summarizing this effort along with the analytical results was released in October 2007 and is available tonight in your handout packet on the left side.

To determine the potential spread of radiological contaminants through underground utility lines, analytical results were compared to background values established in the NFSS RIR. In other words, wastewater samples were compared to surface water background values, sludge to sediment background values and soil to soil background values. Samples exceeding background levels indicate potential radiologically impacted areas.

## Radiological Underground Utilities Investigation Conclusions

- No imminent threat to human health or the environment
- Bedding material will not encourage potential contaminant movement along subsurface pipelines
- Further evaluation of radiological impacts in the RI Report Addendum



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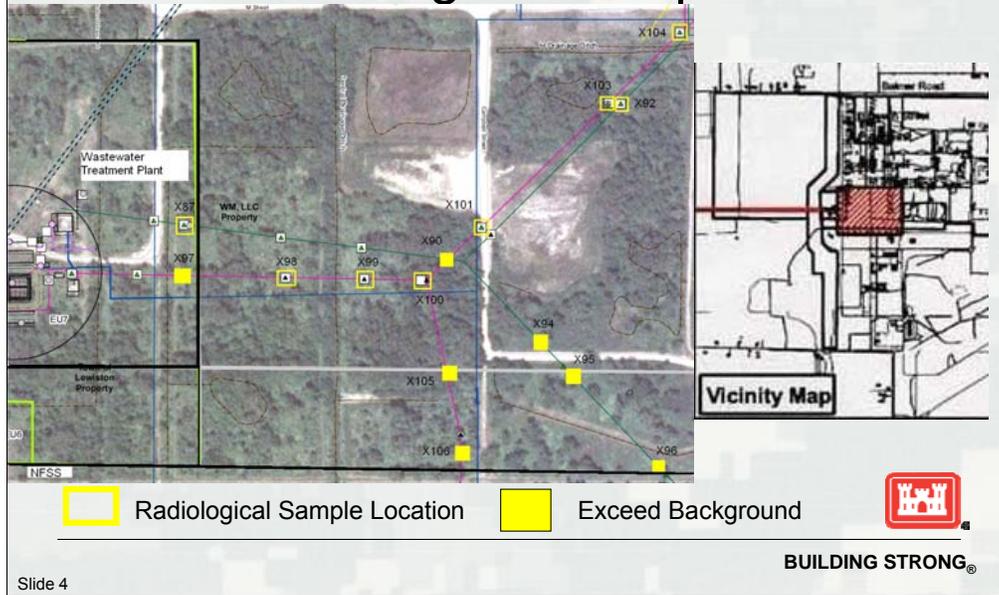
Slide 3

This slide highlights conclusions from the FUSRAP sampling of former LOOW underground utility lines north and west of the NFSS property. The main conclusion is that there is no imminent threat to human health or the environment based on these findings. In addition to sampling, inspection of bedding material surrounding these lines was conducted to determine if the construction of the lines would provide a means for potential contaminant movement off-site. In some cases, for example, if a subsurface pipeline leaked contaminants and the pipe was surrounded by gravel, contaminants could move in the channel along the line at a faster rate than the surrounding soils or clay would normally allow. The good news is that a majority of the lines were concrete encased, and therefore, are not going to encourage contaminant movement.

When radiological results from LOOW underground utility lines were compared to background levels, or the level of radioactivity one would expect to find if not impacted by past Manhattan Engineer District activities, there were exceedances of these levels that indicate a need for further evaluation of this data in the Niagara Falls Storage Site Remedial Investigation Report Addendum. These results in excess of background do not necessarily indicate a potential health risk.

The next slides will highlight radiological sample locations along with preliminary background screening results for the LOOW underground utility lines north of the NFSS (former LOOW acid waste and sanitary sewer lines on CWM), associated with the former LOOW wastewater treatment plant on the Town of Lewiston property, and the 30" outfall line.

# LOOW South of M Street Radiological Samples



This figure shows sample locations and which radiological results from sanitary sewer and acid waste pipelines extending from NFSS north to the CWM property and west to the Town of Lewiston property exceeded background.

This figure shows that radiological impacts from the former LOOW pipelines on NFSS have extended off-site (to the north and west of NFSS).

## Preliminary Comparison to Background Screening Levels

- **Sanitary Sewer Lines** (10-14 ft deep)
  - ▶ Sludge 4x background for uranium
  - ▶ Wastewater 2x background for uranium
- **Acid Waste Lines** (9-16 ft deep)
  - ▶ Sludge 2x background for uranium
  - ▶ Wastewater 3.5x background for uranium

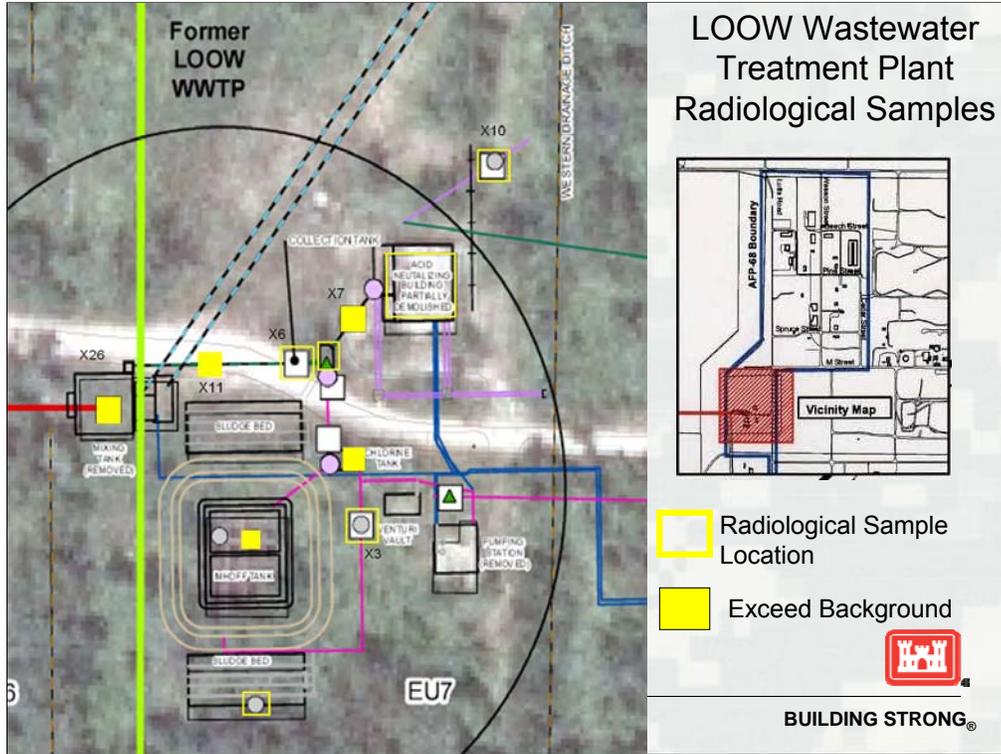


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Slide 5

Radiological results from the former LOOW sanitary sewer and acid waste lines indicate that uranium is present in sludge and wastewater within these lines in excess of background.

The exceedances of radiological background screening levels indicates a need for further evaluation of this data in the Niagara Falls Storage Site Remedial Investigation Report Addendum, and does not necessarily indicate a potential health risk.



This figure shows the radiological sampling undertaken at the LOOW wastewater treatment plant and locations which were above background. Lines associated with the wastewater treatment plant are from 1-6 ft deep and mainly encased in concrete. The pipes are made of concrete, wood and terracotta (or clay).

The wastewater treatment plant was identified as the area most radiologically impacted. This was expected since the wastewater treatment plant was designed to treat wastewater and sludge from the pipeline network.

# Preliminary Comparison to Background Screening Levels

## ▪ Wastewater Treatment Plant

### ▶ Sludge in the lines (1-6 ft deep)

- radium 2x background
- thorium 1.25x background
- uranium 1.5x background
- cesium 1.5x background

### ▶ Sludge in Imhoff tank

- cesium 3x background
- uranium 10x background

### ▶ Sludge in the chlorination tank

- uranium 7x background
- radium 1.5x background

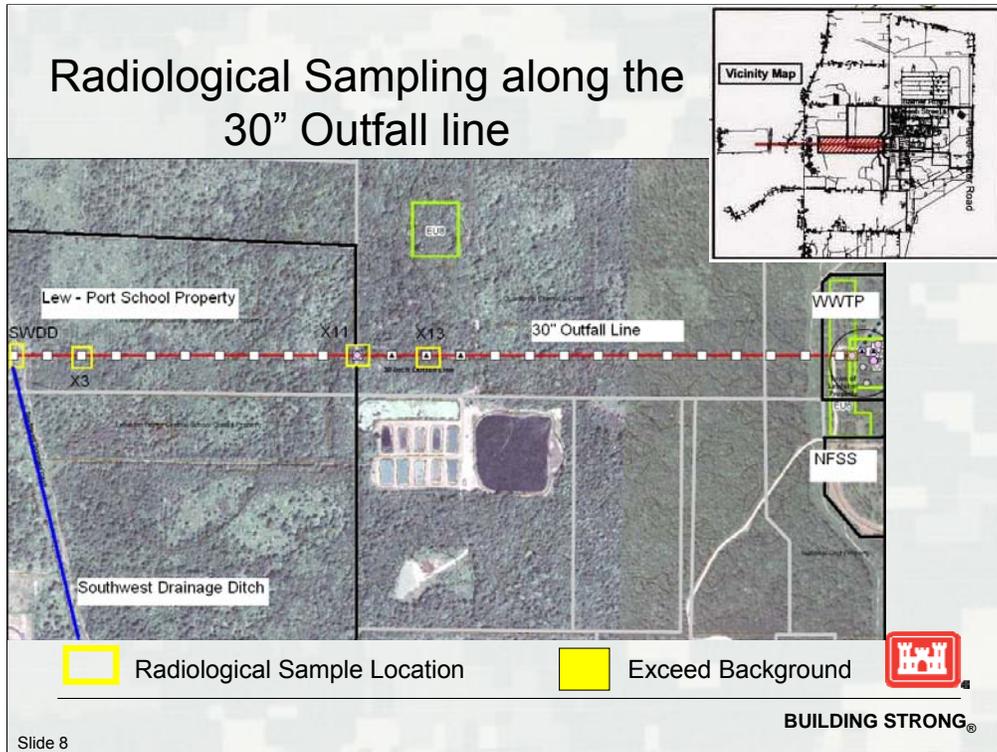


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Slide 7

Radiological results from the former LOOW wastewater treatment plant indicate that uranium, thorium, radium and cesium are present above background in sludge, but not wastewater.

The exceedances of radiological background screening levels indicates a need for further evaluation of this data in the Niagara Falls Storage Site Remedial Investigation Report Addendum, and does not necessarily indicate a potential health risk.



The figure shows locations along the 30" Outfall line that were selected for radiological sampling during the LOOW underground utilities remedial investigation.

The 30" outfall line is about 5-6 ft below ground surface from the wastewater treatment plant to the southwest drainage ditch and is composed of terracotta (or clay) pipe encased in concrete. Additionally there is a 3/4-in plastic liner within the pipe walls. Radiological sampling was conducted in 3 locations along the pipeline due to the limited presence of sludge and wastewater within this pipe. In addition water, sediment, and soil within the southwest drainage ditch were sampled where the 30" outfall line crosses.

The figure shows that no background exceedances were detected along the 30" outfall line.

## Preliminary Comparison to Background Screening Levels

- **30" Outfall Line (5-6 ft deep)**
  - ▶ Very limited presence of sludge and wastewater
  - ▶ Available wastewater within background limits
  - ▶ Soil surrounding 30" Outfall line within background limits
- **Southwest Drainage Ditch**
  - ▶ No background exceedances



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Slide 9

Radiological results from the former LOOW 30" outfall line indicate no radiological findings in excess of background limits.

## Next Steps for NFSS

- Continued site operations and maintenance, environmental monitoring, and annual reporting
- NFSS RI Report Addendum fieldwork this Fall/Winter 2009
- Feasibility Study Work Plan



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Slide 10

What's next for the NFSS project is continued site operations and maintenance, and environmental monitoring to ensure protection of human health and the environment. In addition, the 2008 technical memorandum that reports findings from the environmental surveillance program will be released in November.

In December 2007, the Corps of Engineers released the Remedial Investigation Report for the NFSS, where 334 public comments were received and reviewed by the NFSS technical team. Based upon these comments and a data gap assessment, a scope of work was developed for a remedial investigation report addendum. The RIR Addendum will address data gaps and comments through additional historical documentation, addition evaluation of available data, as well as additional field investigations. Additional field investigations will commence this fall/winter, to better define groundwater contamination onsite and the potential for movement offsite. The NFSS technical team is currently working to identify sample locations to achieve project objections and address identified data gaps.

The Corps will issue a Feasibility Study Work Plan this calendar year that describes the three operable units for the NFSS; IWCS, Balance of Plant (site soils, underground lines, above ground structures), and Groundwater. It introduces the concept of FS Technical memos for each operable unit which are interim FS deliverables that will be released to solicit your input on various stages of the FS process.

Lastly, the Corps has received Stimulus funds to demolish Building 401. The Corps is currently preparing a scope for this work and plan to award the demolition contract in the March 2010 timeframe. There is a fact sheet located in the back of the left hand side of your packet with more information.

# Access to Information

- The Fact sheet for the LOOW UURI Radiological Sampling is available at:

<http://www.lrb.usace.army.mil/derpfuds/loow-nfss/index.htm>

- The fact sheet for the RI Report Addendum is available at:

<http://www.lrb.usace.army.mil/fusrap/nfss/index.htm>



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# Contact Us

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Slide 12

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Slide 13

This concludes the update for the NFSS portion of the presentation. We will now convene in back of the screen where we encourage you to talk with members of the NFSS-LOOW technical team and US Department of Energy representatives. We'll reconvene here at 7:15 for a 90 minute round table discussion.