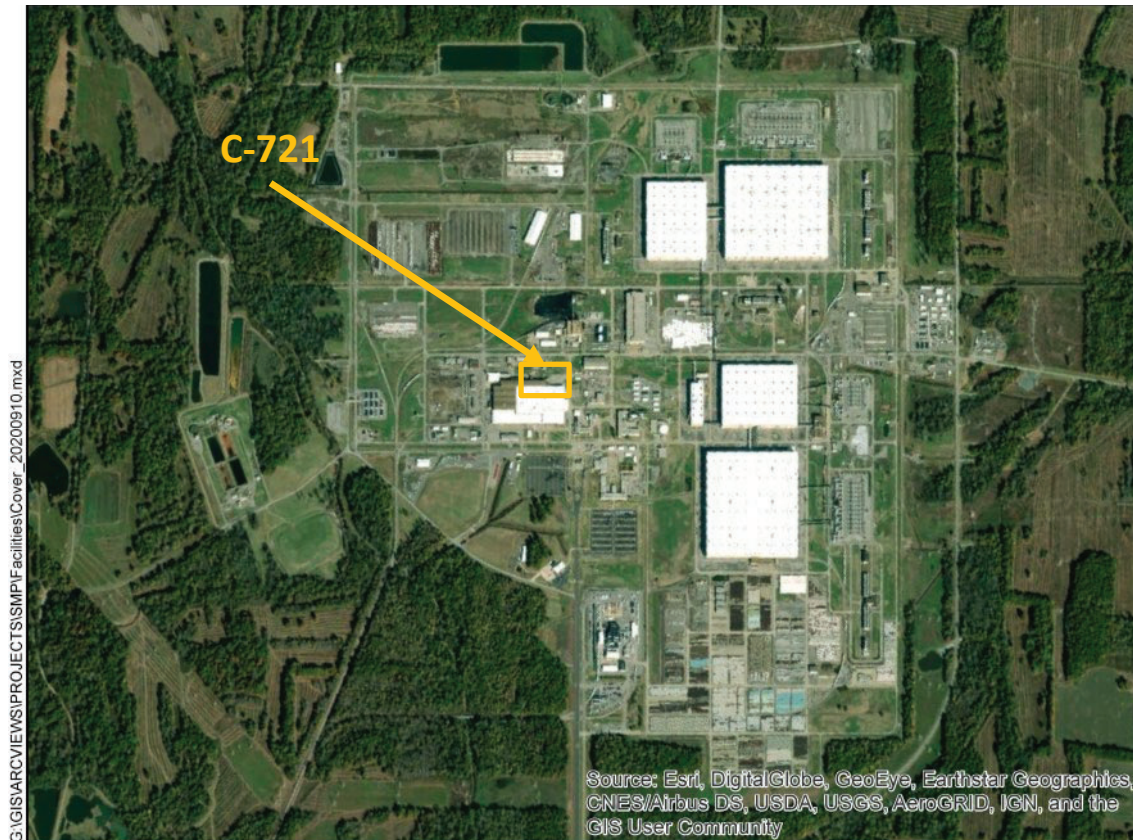


C-721 Gas Manifold Storage Building



Facility Overview Briefing

March 4, 2021

Reflects consultation with EPA and Kentucky in accordance with the Site Management Plan that occurred on February 1, 2021, and includes incorporation of comments from those discussions.

Purpose

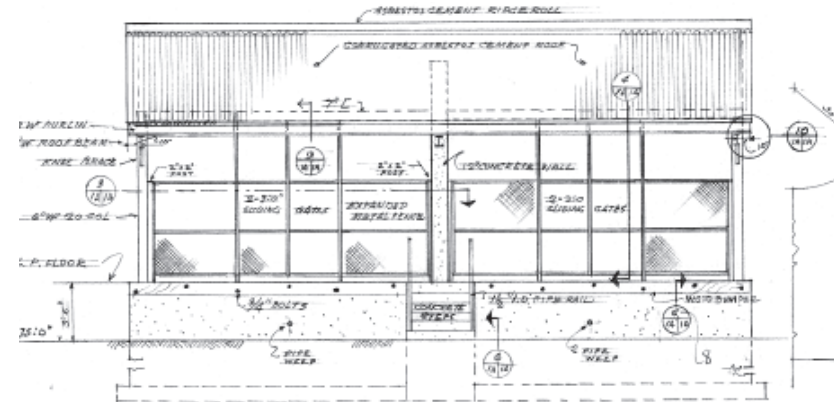
- The C-721 Gas Manifold Storage Building is a candidate for future demolition and disposal, contingent on funding priorities.
- Listed in Appendix 6 of the Site Management Plan (SMP) and requires consultation with EPA and Kentucky for CERCLA screening prior to demolition.
- This presentation is intended to serve as consultation, providing the basis for demolition and disposal of the aboveground structure outside of the FFA/CERCLA process.
- The slab/soils will remain and be subject to further CERCLA evaluation as part of a future site evaluation conducted under Appendix 4 of the SMP.



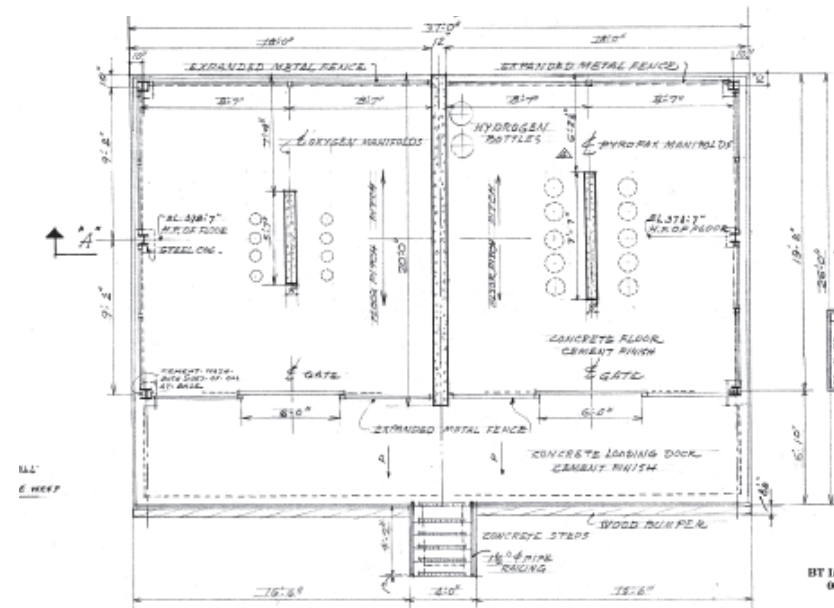
C-721 Facility Photo: 8/2020

Construction History

- C-721 is located within the Paducah Site security fence on the north side of the C-720 Building.
- Construction was initiated in 1952 and completed in 1953.
- Originally constructed as an open structural steel frame on an elevated concrete pad. See Engineering drawings in backup section:
 - E16-1-A
 - E16-1-M, Rev 3
 - E16-1-S, Rev 5
- The facility is approximately 962 ft².
 - Measuring ~ 26 ft x 37 ft



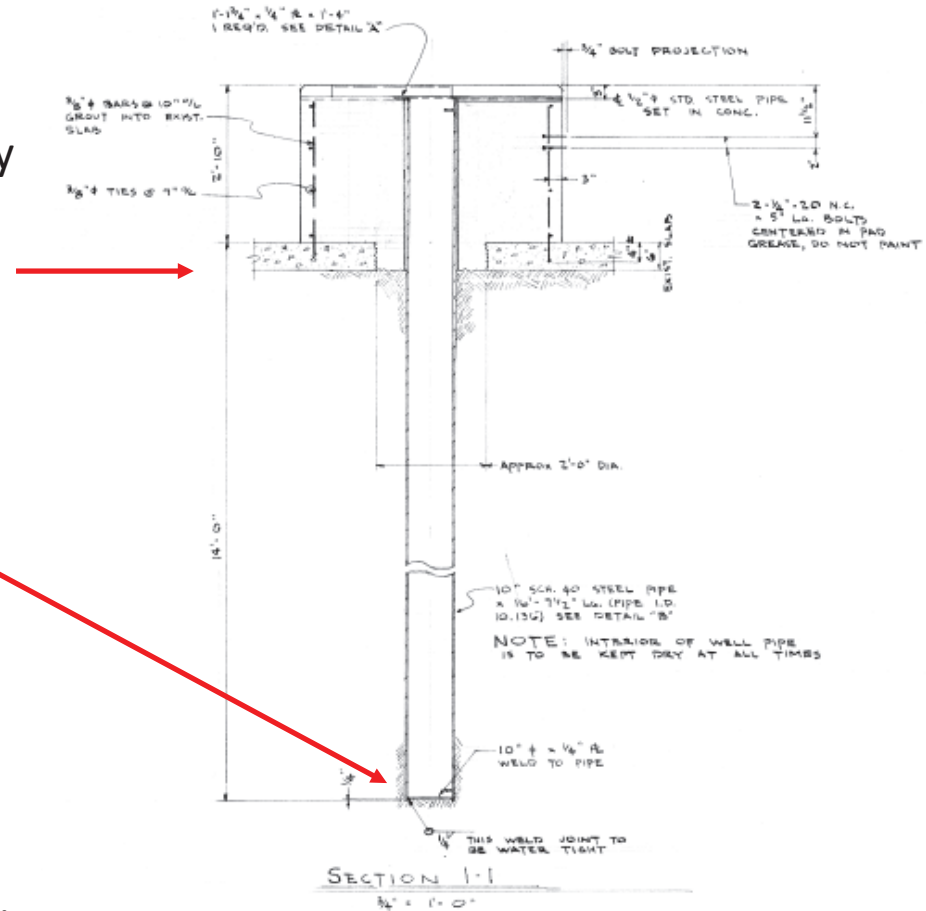
South Elevation View. Engineering Drawing: E16-1-A



Floor Plan View. Engineering Drawing: E16-1-A

Construction History

- Following the original construction of the facility in 1953, it was subsequently modified in 1954 to install a steel pipe well that extended downward into the floor, which housed a cobalt source that was used to calibrate radiological instruments:
 - It was designed with welded steel bottom intended to be water tight.
- At some point following the 1954 modification, the building was subsequently modified to:
 - Add exterior cement panel walls to totally enclose the facility on each side.
 - Remove the gas manifold system.



Operational History

- The building was originally constructed in 1953 as a gas manifold facility. Oxygen gas and pyrofax (propane) gas were distributed via hard-piping from the C-721 building to the C-720 building.
- In 1954, the facility underwent modification and was subsequently converted to support calibration of radiological instruments.
- Radiological calibration involved the use of the steel well containing the cobalt source and other sealed sources that were stored within the building.



C-721 Facility Photos: 8/2020

Operational History

- The facilities ceased being used for radiological calibration in the 1980s, but it continued to be used for material storage for the following organizations.
 - Fire Services
 - Health Physics
 - Stores
 - Environmental Services
- Leased by USEC from the early 1990s until USEC ceased operation in 2014.
- After transition from USEC back to DOE in 2014, the building continued to be used by DOE contractors for storage of materials by Fire Services and Health Physics.



C-721 Facility Photos: 8/2020

Current Status

- Transitioned back from USEC to DOE in 2014 and was no longer operational:
 - The manifold system and all gas cylinders have been removed.
 - All radiological calibration sources have been removed.

- Walkdown inspection conducted in October 2020 confirmed the presence of the following:
 - The access structure to the steel cobalt well.
 - Various other miscellaneous items still present (e.g., air monitors, file cabinet).

Portable Heaters: – 10/2020

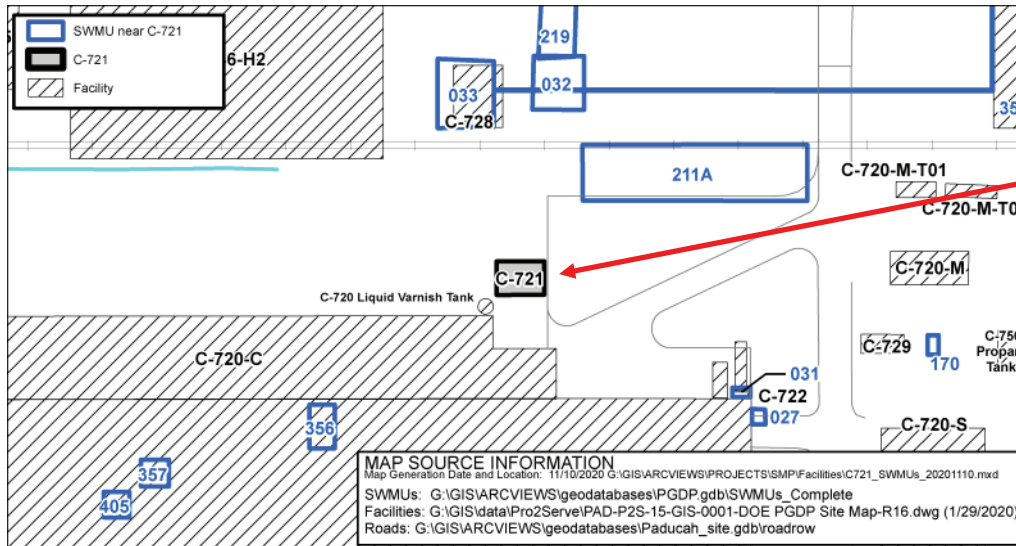


Photos – 10/2020



Air monitoring equipment designated as an RMA: Photo – 10/2020

Environmental Impacts (Solid Waste Management Units)



- The C-721 facility is not designated as a SWMU/AOC.

SWMU No.	Facility Name	Current Status	NFA Approval By
027	C-722 Acid Neutralization Tank	Soils and Slabs OU	
031	C-720 Compressor Pit Water Storage Tank slab and underlying soils	Soils and Slabs OU	
032	C-728 Clean Waste Oil Tanks slab and underlying soils	Soils and Slabs OU	
033	C-728 Motor Cleaning Facility slab and underlying soils	Soils and Slabs OU	
170	C-729 Acetylene Bldg. Drain Pits	Soils Remedial	
211A	C-720 TCE Spill Site Northeast	GWOU—Southwest Plume Sources and Soils Remedial	
219	OS-08	Soils Remedial	
354	DMSA	RCRA Permit (Non-FFA)	
356	DMSA	RCRA Permit (Non-FFA)	
357	DMSA	RCRA Permit (Non-FFA)	
405	G-720-22	KDWM 2/14/2003	

Environmental Impacts

- Items previously stored at C-721:
 - Gases (e.g., oxygen, propane).
 - Fire retardant foaming agents.
 - Oils/greases.
 - Radioactive Material Areas.
- Evidence of past spills and leaks:
 - Leaking valve on stored propane tanks.
 - Leaking container of fire foaming agent (see chemical storage index in backup).
 - AFFF agent.
 - Protein/XL-3 agent.
 - Visible staining on floor.
 - Fire extinguisher dry powder agent on floor (Amerex ABC).
- Building materials used for construction could contain lead-based paints and asbestos materials, both of which can be effectively verified during a pre-demolition inspection and properly managed using standard demolition/waste management practices.



Residual staining from Protein-based Foaming agent (XL-3)

- Contained to inside floor and will be further evaluated during the proposed SE for the soils and slab. See MSDS in backup.

Conclusion and Recommendations

- Walkdown inspection of the facility, employee interviews, and other reviewed historical information did not identify any unusual conditions that would pose a potential threat of environmental release during future demolition of the aboveground structure.
 - Deactivation will include removal of any accessible loose items being stored and designated as RMAs (to the extent practicable) prior to demolition.
- Subject to completion of deactivation and availability of funding, it is recommended to proceed with demolition and disposal of the C-721 (aboveground structure) outside of the FFA/CERCLA process contingent upon the fact that no additional changes have occurred that would affect the CERCLA determination of the facility prior to demolition.
- All applicable laws, regulations, and DOE procedures/protocols will be followed to ensure the demolition and disposal of the aboveground structure occurs in a safe, compliant manner, including conducting any additional radiological characterization through confirmation radiological surveys (as necessary) to support demolition and waste disposition.

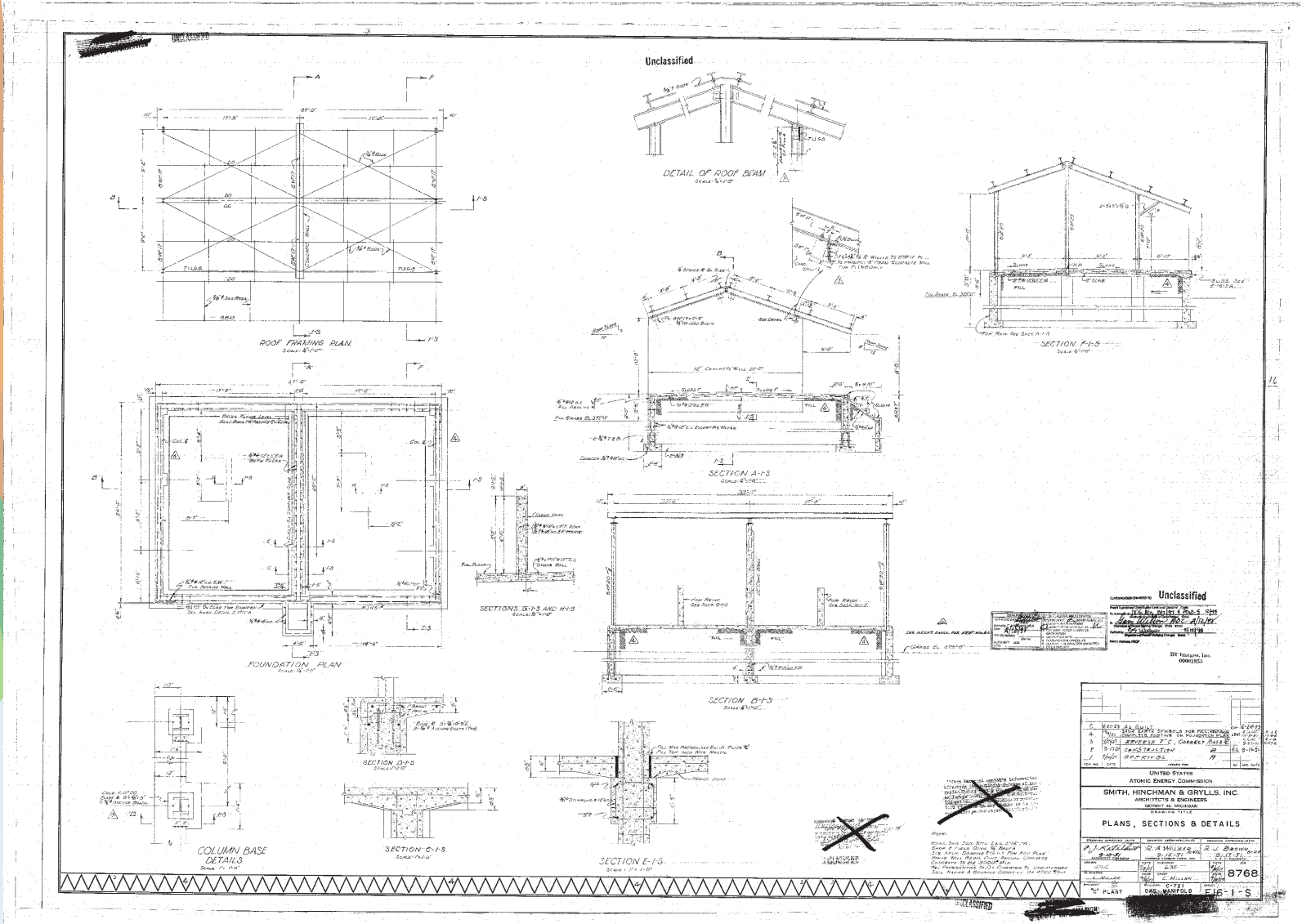
Conclusion and Recommendations

- Based on the documented historical spills and leaks (e.g., fire retardant foaming agent), it is recommended the underlying slab and soils undergo further CERCLA evaluation of as part of a future site evaluation (SE) conducted under Appendix 4 of the SMP.
- The steel well that historically housed the cobalt radiological calibration source will remain as part of the underlying slab and soils and will be further evaluated under the CERCLA site evaluation.
- As part of the demolition of the aboveground structure, the appropriate best management practices (BMPs) will be evaluated and implemented (as needed) to prevent/minimize the pooling and/or migration of storm water that may come into contact with any contamination that may exist on the pad. For example, the following BMPs will implemented as necessary:
 - Radiological surveying of the pad will occur following demolition.
 - Decontamination and/or application of fixatives will be applied to contaminated surfaces above regulatory posting limits of the pad.
 - Isolation measures to minimize and/or control runoff of contaminated storm water (e.g., seal inlet to the steel calibration well and other drains).
- Document the above approach in the appropriate annual SMP revision.

C-721 Gas Manifold Storage Building

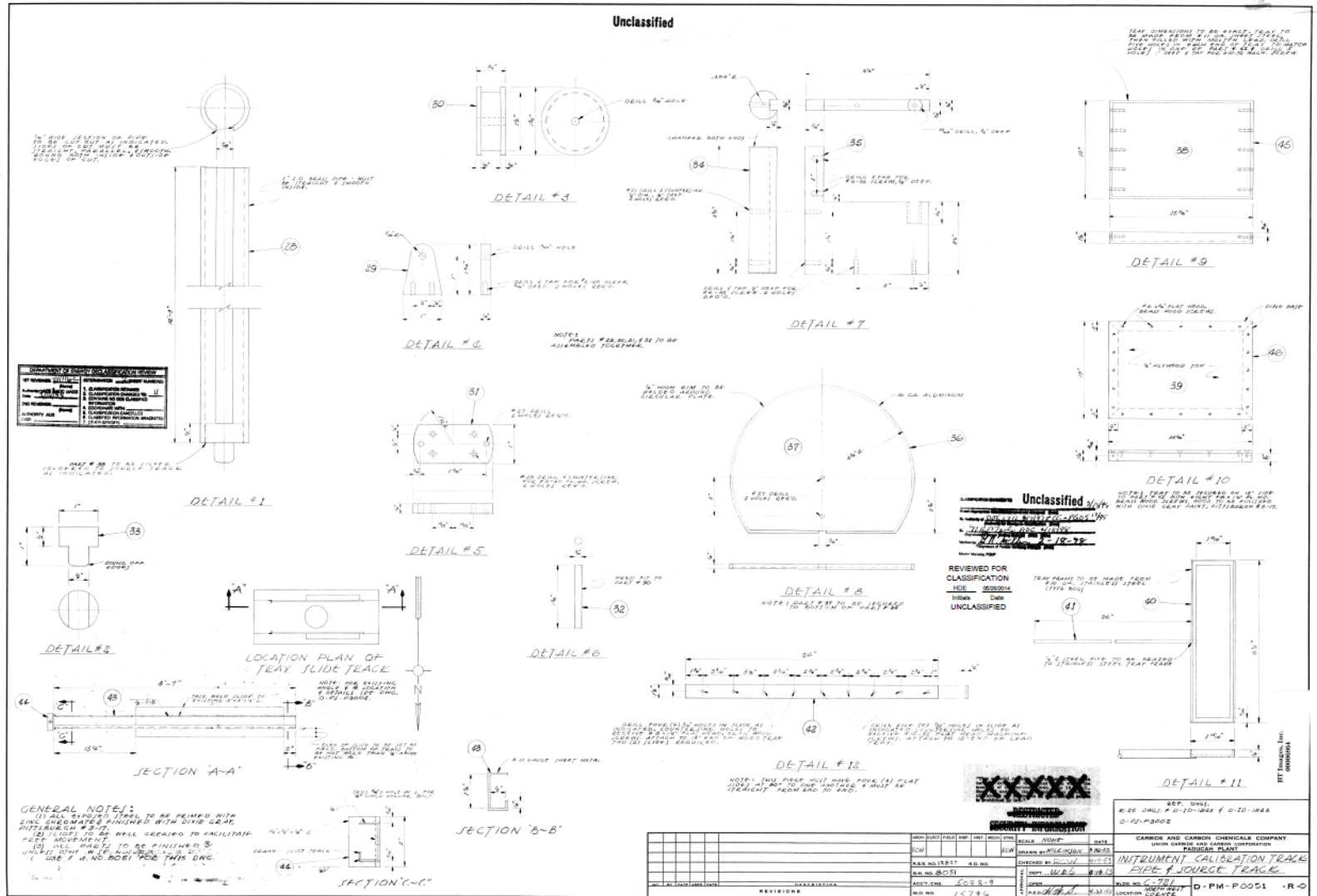
BACKUP INFORMATION

C-721- Plans, Sections & Details



E16-1-S, Rev 5

C-721- Plans, Sections & Details



Engineering Drawing: D-PM-P8051_0001_0000_U-068760

C-721 Chemical Inventory Index - 2016

HAZARDS SURVEY DATA COLLECTION

Page 1 of 6

Gathering information may require walking down the facility and interviewing the person(s) knowledgeable of and responsible for hazardous materials stored in the area. Detailed instructions for completing this form are included.

1. Project: FPDP Site: DOE Paducah Site
2. Point of Contact: Darrell Howard Phone Number: 270-441-5651
3. Building/Facility Number: C-721
4. Building Type or Use: Storage of Firefighting Foam
5. Total Occupancy: 0 Other Than Ground Floor Occupancy if known: _____
6. Are Classified Materials present in the Building/Facility: YES NO
7. Special Conditions/Designations: none
8. Are Hazardous Materials other than standard office products and cleaning supplies present in the Building/Facility: YES NO
 If "YES," list the name and quantity (pounds for solids and gases, gallons for liquids) of hazardous materials in the table below. *Additional guidance is provided in the instructions.*

Hazardous Material (note form [gas, liquid, or solid] and concentration, if applicable)	Inventory Present (include total quantity, and quantity/material type/and size of individual containers, if available)	Maximum Potential Inventory (include total quantity, and quantity/material type/and size of individual containers, if available)	Notes (state source[s] of inventory information, and if identified, note any prominent nearby energy sources; e.g., explosive, flammable, combustible, and chemically reactive sources)
Liquid	AFFF Foam, 5 gal. Total 51, Total Quantity 255 gal.	255 gal.	N/A
Liquid	AFFF Foam 55 gal. Total 6 Total Quantity 330 gal.	330 gal.	N/A
Liquid	Protein Foam 55 gal. Total 13 Total Quantity 715 gal.	715 gal.	N/A
Solid (Powder)	Amerex ABC extinguisher agent. 5 Gal. Total 26. Total Quantity 130 gal.	130 gal.	N/A

CP2-EP-1002-F01, Rev. 0

Material Data Safety Sheet – Protein Foam



150 Gordon Drive, Lionville, PA 19353 • Phone 215 363-1400 • Telex 685-1058 • FAX (215) 524-9073

MSDS3REG

3% Regular page 1 of 3

MATERIAL SAFETY DATA SHEET

Section I

Manufacturer's Name and Address:
National Foam System, Inc.
150 Gordon Drive
Lionville, PA 19353

Emergency Telephone No.:
(215) 363-1400

Product Name: ~~National AER-O-FOAM (3% Regular)~~
Chemical Name and Synonyms: ~~Protein Hydrolysate~~

Section II Hazardous Ingredients

<u>Common Name</u>	<u>Chemical Name</u>	<u>% Conc.</u>	<u>TLV</u>
Ethylene Glycol	1,2-Ethanediol	10 max.	50 ppm ceiling limit (vapor)
Hexylene Glycol	2-Methyl-2,4-Pentanediol	10 max.	25 ppm ceiling limit

Section III Physical Data of Product

Specific Gravity (H₂O=1) : 1.16
Solubility in Water: 100%
Appearance and Odor: Dark Brown Liquid - Organic Odor

Section IV Fire and Explosion Hazard

None

C-721 Gas Manifold Storage Building (Aerial Photograph)



Modified from Aerial Photo: July 3, 1971 (ADZ-4LL-53)