

**C-603-A, -B, -C, -D, -H, -I Nitrogen Generating Facilities
Solid Waste Management Unit (SWMU) Assessment Report**

SWMU/AOC NUMBER: 483

DATE OF ORIGINAL SAR: 06/15/01

DATE OF SAR REVISION: 06/18/07

REGULATORY STATUS: SWMU

LOCATION: C-603 Nitrogen Generating Facilities are located west of building C-600 at the Paducah Gaseous Diffusion Plant (PGDP).

APPROXIMATE DIMENSION OR CAPACITY: The original SWMU boundary included the footprints of the C-603-A (72 ft²), -B (13,000 gal), -C (4,000 gal), -D (4,000 gal), -H (128 ft²), and -I (340 ft²) Nitrogen Generating Facilities. The SWMU boundary has been expanded to approximate dimensions of 260 ft by 45 ft (approximately 11,700 ft²) to accommodate the temporary staging of solid waste and scrap metal during the decommissioning of the facility.

FUNCTION: These tanks were once used to generate nitrogen for different plant operations.

BRIEF HISTORY: The C-603 Nitrogen Generating Facilities were constructed to generate liquid nitrogen at the PGDP. The C-603 facilities replaced a similar facility used for the same purpose (C-601). Some of the C-601 equipment, including the receiver storage tanks, were used at the C-603 facility. According to the 1998 *Safety Analysis Report for the PGDP, Department of Energy (DOE) Nonleased Facilities, KY-EM-257*, the process equipment failed and the nitrogen generator was abandoned in place in 1977. The air compressor was used for several years for auxiliary plant air until the electric motor burned out.

In November 2002, the C-603-B storage/receiver tank was removed due to degradation of the outer shell of the tank. In October 2005, C-603-A, -C, -D, -H, and -I were decommissioned and removed as part of a maintenance action with a categorical exclusion for NEPA. Concrete slabs remain and will be addressed as part of a future response action.

PRESENT OPERATIONAL STATUS: Inactive

DATES OPERATED: Exact operational dates of the system are not known; however, interviews of site personnel indicated that the units were in operation prior to 1973 and the equipment had been installed during the construction of PGDP. The C-603 facilities ceased operation in place in 1977. The air compressor continued to be used into the 1980s.

SITE/PROCESS DESCRIPTION: These facilities were used to generate nitrogen. Nitrogen was used in the process areas and lab areas to support the enrichment of uranium.

Generator Staging Areas (GSA)/Satellite Accumulation Areas (SAA)/90-day areas:

GSA B-603-B-01 was established September 9, 2002, to stage asbestos containing material during decontamination and decommissioning (D&D) work on the C-603-B tank. The waste was removed from the GSA and it was closed on May 18, 2004.

GSA 603-02 was established June 16, 2005, for the scheduled D&D work. Personal protective equipment (PPE) and asbestos material were staged in the GSA. The waste was removed from the GSA and it was closed on September 13, 2006.

SAA 603-01 and -02 were established for paint chips and elemental mercury during D&D activities. The waste was removed from these SAAs and they were closed on September 13, 2006.

WASTE DESCRIPTION: The steel tanks, steel piping and supports, and the buildings themselves originally were declared a solid waste at the C-603 site. During the October 2005, D&D activities, these wastes were segregated, and removed from the unit for disposal or recycling off-site as described in the following section. As a result of segregation, some hazardous wastes were generated and placed into compliant storage or shipped off-site. The concrete slabs were left in place to be managed at a later date under the Soils Operable Unit activities.

WASTE QUANTITY: The following wastes were generated/removed during the October 2005 D&D activities:

- Solid Waste: ~ 3600 ft³ scrap metal and debris
- Solid Waste: ~ 100 ft³ asbestos containing material
- Universal Waste: ~ 1.5 ft³ light bulbs
- Hazardous Waste: ~ 7 ft³ paint chips and Personal Protective Equipment
- Used Oil: ~ 7 gallons
- Toxic Substances Control Act Waste: ~ 160 ft³ bulk product and light ballasts
- Recyclable Hazardous Waste: ~ 0.5 ft³ elemental mercury and lead plugs
- Recyclable Material: ~ 5,500 ft³ scrap metal

SUMMARY OF ENVIRONMENTAL SAMPLING DATA: No sampling of environmental media has occurred. Paint chip samples were taken from C-603 surfaces and analyzed for polychlorinated biphenyls (PCBs), metals, and radiological contaminants. These results indicated the presence of lead, chromium, and PCBs.

DESCRIPTION OF RELEASE AND MEDIA AFFECTED:

GROUNDWATER:	None known
SURFACE WATER:	None known
SOIL:	Potential (See Below)
ECOLOGY:	None known

DOCUMENTATION OF NO RELEASE: During D&D, most paint chips that fell onto soil surfaces around the C-603 facilities, were collected for disposal. As a result, there is a potential for sub-surface soil migration of paint chips that were too small to be collected or spotted by a walk over inspection.

IMPACT ON OR BY OTHER SWMUS OR AOCS: There is no evidence that this SWMU impacts or is impacted by other SWMUs.

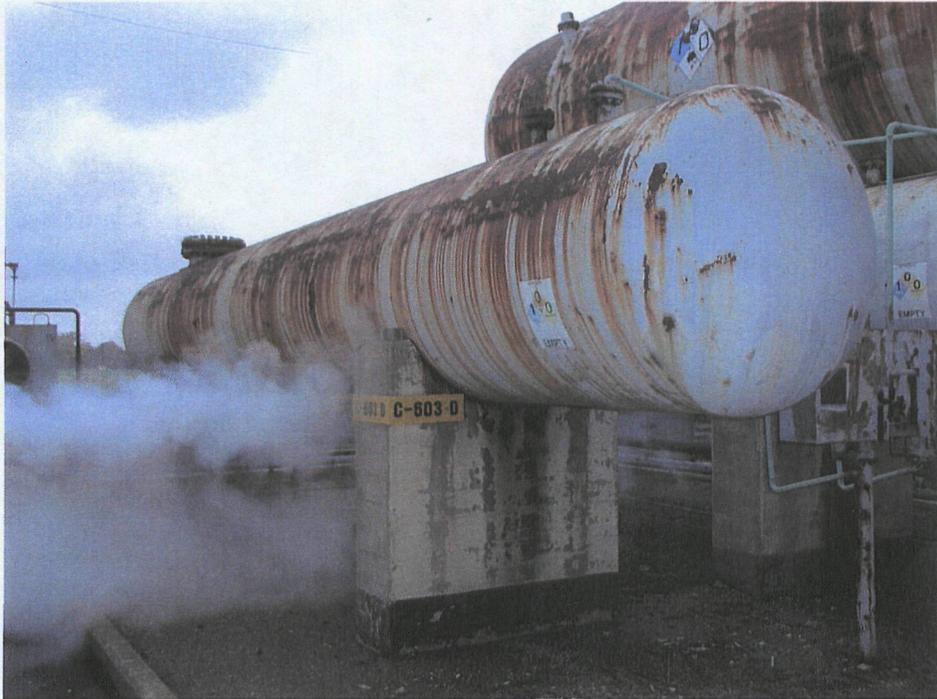
PRG COMPARISON: N/A

RFI NECESSARY: Yes, as identified in the Resource Conservation and Recovery Act permit conditions T-98, T-145, and T-159, incorporating Appendix A-1, and Federal Facility Agreement Site Management Plan, Appendix 4.

OPERABLE UNIT ASSIGNMENT: Soils Operable Unit



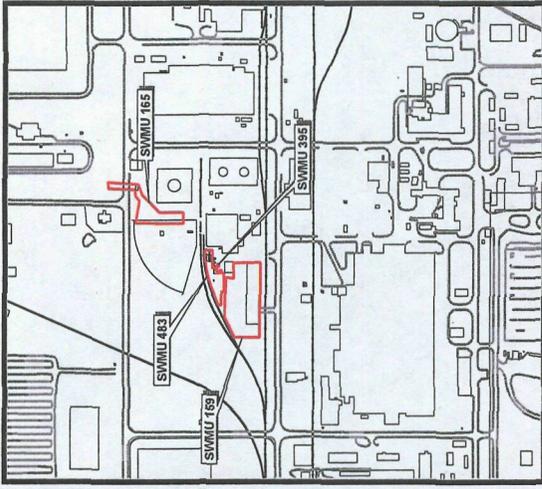
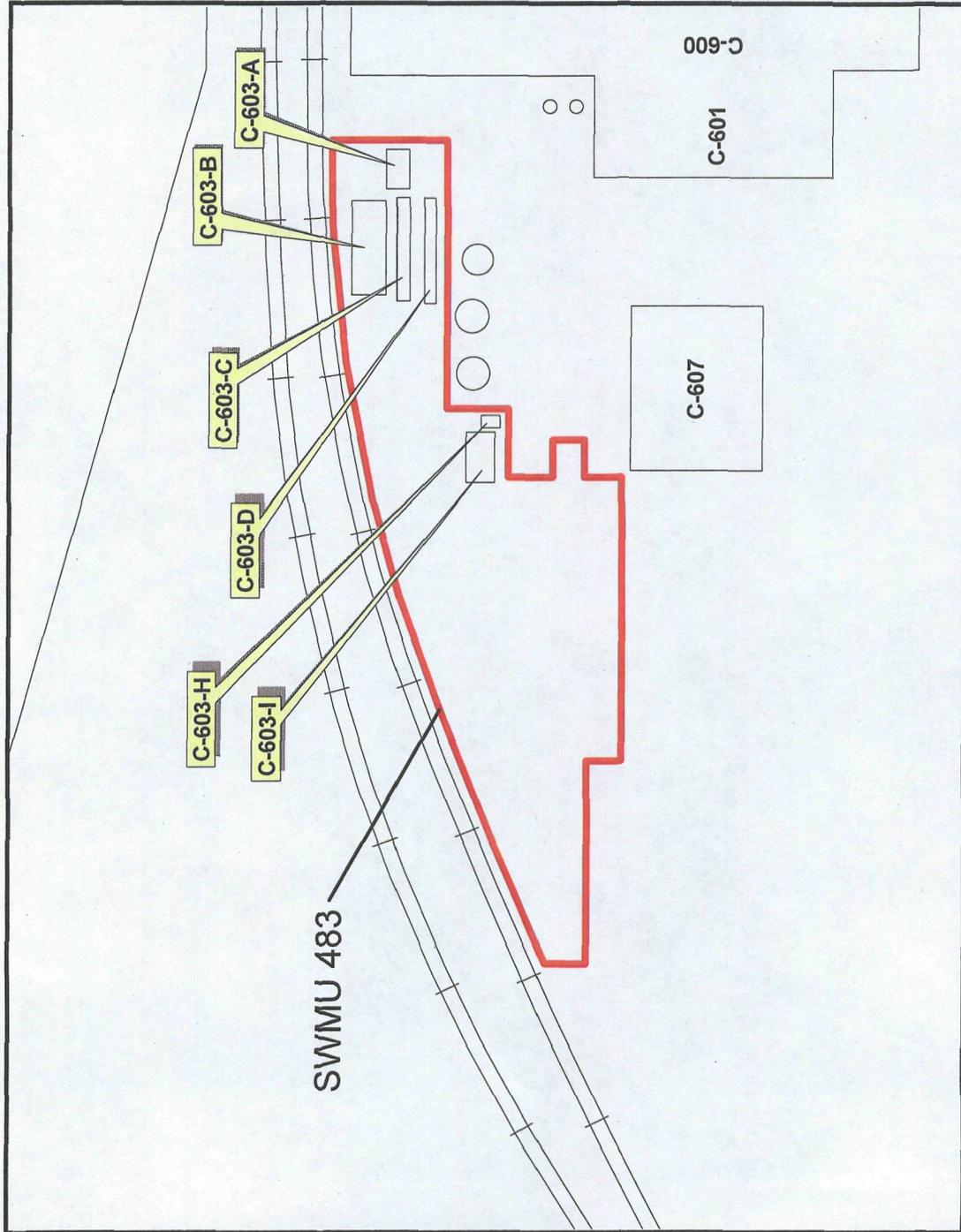
**C-603-A, -B, -C, -D, -H, -I Nitrogen Generating Facility
2001**



**C-603-A, -B, -C, -D, -H, -I Nitrogen Generating Facility
SWMU 483
2001**



**C-603 Nitrogen Generating Facility
SWMU 483
November 14, 2005**



SWMU 483 LOCATION
Paducah Gaseous Diffusion Plant

U.S. DEPARTMENT OF ENERGY
 DOE PORTSMOUTH/PADUCAH PROJECT OFFICE
 PADUCAH GASEOUS DIFFUSION PLANT

PADUCAH
 Remediation Services
 A Partridge Show Joint Venture Company

FIGURE No. c5ac90000sk460r5.apr
 DATE 5-17-07

PLANT NORTH
 TRUE NORTH
 20°

50 0 50 100 Feet

SWMU 483