SOLID WASTE MANAGEMENT UNIT (SWMU) ASSESSMENT REPORT
(Revised August 18, 1995)

UNIT NUMBER: SWMU 203

UNIT NAME: C-400 Sump

DATE: May 19, 1995

REGULATORY STATUS: SWMU 203 notification submitted March 11, 1995.

The C-400 sump received waste waters from various process drains and treatment units from the C-400 building. The sump was a convergence point for waters from the building which were then pumped into the North-South Diversion Ditch (NSDD) for discharge through Outfall 001. Since 1992, the sump only received nonhazardous cooling waters and condensate from this building. This sump is currently, and in past practices, part of a waste water drainage system that is regulated under the Clean Water Act (CWA) and the Kentucky Pollutant Discharge Elimination System (KPDES).

Treated waste waters from the C-400-D lime precipitation unit flowed through this sump to KPDES Outfall 001. The C-400-D lime precipitation unit is an exempt waste water treatment unit (WWTU) and is regulated under KPDES. This sump transferred the treated waters, from the exempted unit, to the NSDD and would be considered part of the treatment unit since it is ancillary equipment.

Past waste waters that discharged from the C-400 building through the C-400 sump were listed on prior KPDES Permits before flowing to the NSDD, through the C-616 settling lagoon, and out Outfall 001. The C-616 settling lagoon is part of the chromium reduction facility and is part of the permitted discharges for Outfall 001.

Since the sump transfers treated waters, from the C-400-D (a waste water treatment facility), and transferred waters, that were to be treated, to the C-616 settling lagoon, the Resource Conservation and Recovery Act waste water treatment exemption would apply. Regulation 401 KAR 30:010, Section 1(90)(t), defines a WWTU as "a device that is part of a waste water treatment facility that is subject to regulation under either Section 402 or 307(b) of the CWA and receives and treats or stores influent waste water which is a hazardous waste as defined in 401 KAR 31:010, Section 3; or generates and accumulates a waste water treatment sludge that is a hazardous waste as defined in 401 KAR 31:010, Section 3; or treats or stores a waste water treatment sludge which is a hazardous waste as defined in Section 3 of 401 KAR 31:010, and meets the definition of tank or tank system."

It is the Department of Energy's (DOE's) position that the C-400 sump is an excluded unit since it currently does not receive hazardous waste, is part of the C-400-D waste water treatment unit, and past and present waste waters are regulated under the KPDES Program.

LOCATION: SWMU 203 is located outside the northwest corner of the C-400 building within the Paducah Gaseous Diffusion Plant (PGDP). A PGDP site map depicting the location of the SWMU with respect to the entire facility is included, as well as a SWMU-specific map as Attachment 1.

APPROXIMATE DIMENSION: The sump is approximately four feet in diameter by four and one-half feet deep. A recent photograph of the unit, a copy of the original blueprint, and a drawing are included for reference as Attachment 2.

FUNCTION: The current discharge to SWMU 203 consists of cooling water from the ADMAC high pressure waterjet system on the C-400 Spray Booth and the vacumn pump on the C-400 Lime Precipitation Unit. This discharge would be clean sanitary water and no contaminants would be expected. Condensate may also be discharged to SWMU 203 which is then discharged to KPDES-permitted Outfall 001. No contaminants are, or have been expected, from the condensate since it is steam condensate from the heat exchanger atop the C-400 Spray Booth which is used for heating cleaning solutions. This part of the system is used very infrequently. It has been operated one time in the last three years. Contaminants which have been identified do date appear to be from former C-400 processes. The use of TCE was discontinued July 1, 1993. At this time, there is no pump within the unit. The sump is gravity-fed and its operation is, therefore, intermittent.

BRIEF HISTORY: In the 1950s, this sump handled discharges from a variety of processes in C-400 and transferred this material, via a pump installed in the sump, to the C-404 holding pond. In the late 1950s, the transfer pipe to C-404 was cut, and the flow went to the NSDD. Based on interviews with personnel associated with the project, discharges from many processes were discontinued. Discharge of filtrate from the C-400 Lime Precipitation Unit was also piped to this system. Discharge of this solution to the drain has not occurred since 1992.

OPERATIONAL STATUS: Currently operating.

DATES OPERATED: Has operated from early 1950s to present; however, waste streams may have changed.

SITE/PROCESS DESCRIPTION: Sump

WASTE DESCRIPTION (Sludge only): As per the attached analytical results (Attachment 3), the sludge contains PCBs, TCE, and radiological constituents.

WASTE QUANTITY: Sludge material approximately 6-inches deep by 48-inches in diameter. The sludge in the vault was removed over a period of several days using a 3-inch pump during June 1995; however, final removal of the sludge material was on June 27, 1995. Twenty-nine (29) drums were generated, of which 16 contain sludge and water, 12 contain water,

and 1 contains personal protective equipment, in addition to one 1200-gallon tank which contains a combination of sludge and water. The sludge material received a preliminary characterization. The drums and 1200-gallon tank have been properly labeled and are presently stored in the C-746-A Hazardous and Mixed Waste Storage Facility awaiting final disposition. Based on interviews with personnel associated with the project, the sump has not been cleaned out in the past. DOE will not be routinely cleaning the sump since DOE no longer discharges to the sump.

ENVIRONMENTAL SAMPLING DATA: Environmental sampling data in the general area and a figure which depicts the locations of the sampling points are included as Attachment 4. The sump itself is not routinely sampled.

GROUNDWATER POTENTIOMETRIC MAP: Maps depicting the potentiometric surface of the Regional Gravel Aquifer in the SWMU 203 area for both the high and low water tables are included as Attachment 5.

GROUNDWATER MONITORING WELL LOGS: Well logs are included as Attachment 6 for MWs-175 and 178 (AKGWA Nos. 8000-5169 and 8000-5172 respectively).

SURFACE WATER: Attachment 7 includes a figure which indicates the flow of surface water toward, and away from, the unit including KPDES drainage and outfall features.

DESCRIPTION OF RELEASE: It is unknown if release has occurred.

DOCUMENTATION OF NO RELEASE: NA

IMPACT ON OR BY OTHER SWMU/AOC: SWMU 203 is connected to the NSDD (SWMU 59). Since the cooling water and condensate discharged from C-400 is clean, any impact would be from residual contamination, if present. It is not known whether any SWMUs/areas of concern (AOCs) will impact SWMU 203.

RFI NECESSARY: Yes; to be investigated when closed