2002 Year-End Report
Office of Science and Technology
Technical Assistance to
Ohio Closure Sites

January 28, 2003

Ohio Field Office

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Executive Summary

As a result of the Environmental Management (EM) "Top-to-Bottom Review," the Office of Science and Technology (OST) was directed to reorganize and focus on providing Closure Site Support (Thrust 1) and Alternative Approaches to Current High Risk / High Cost Baselines (Thrust 2). This Year-End Report describes the Ohio Field Office (OH) participation in the successful implementation of the new OST Program to provide Technical Assistance (TA) to Closure Sites.

Although initial Thrust 1 activities within OH were extremely successful, future progress of the OST Program in OH requires implementation of the 2002 TA Team recommendations. Since all available OST funds in OH were obligated or expended in 2002, the additional financial support proposed in Thrust 1 for "Closure Site Projects" must be made available to reduce the technical risk to closure of the OH sites.

Although initial Thrust 1 activities within OH were extremely successful, future progress of the OST Program in OH requires implementation of the 2002 TA Team recommendations.

To implement the TA Program, OH redirected the efforts of its existing Ohio Closure Support Group (OCSG). The OCSG, made up of contractor and DOE technical representatives from each of the five OH sites, was originally sanctioned by the OH Forum in 1998 as the Ohio Cost Savings Group. The OCSG activities in CY 2002 focused on aligning the existing OH technical efforts with the new opportunities presented by the TA Program. With site input, all existing and new requests for technical support were subdivided into five "Problem Areas" as described later in this report. OST assigned a technical lead as the primary point-of-contact for each of the "Problem Areas".

Since all available OST funds in OH were obligated or expended in 2002, the additional financial support proposed in Thrust 1 for "Closure Site Projects" must be made available...

Thirty-seven (37) written problem descriptions and/or TA requests were prepared by the sites and submitted to OST on March 28, 2002. The initial OST response for TA began in May, when an eight-member team addressed a contaminated soil problem at Fernald. Eight additional teams were provided by OST during 2002 to address specific problems at the for OH Closure Sites. In addition, OST formed two standing teams to support the Fernald Silos Project and provided additional assistance to address several waste streams on a continuing basis. (NOTE: The Silos Project at Fernald and Closure Enablement at Fernald and Miamisburg are unique to those sites and will not be addressed in this report.)

During 2002, OST and the OCSG jointly developed the changes necessary to implement Thrust 1. This combined effort successfully addressed, at least in part, twenty-five (25) of the top priority OH needs/requests. Additionally, in support of TA Team recommendations, at least seven technologies were deployed using OST funding already available in OH. The nine formal reports produced from 2002 TA Team studies are summarized in Attachment B, and the full reports are available on the OCSG Web Site at http://www.ohio.doe.gov/tech/ocsgta.html.

Conclusions & Recommendations

Based on OH participation in implementing the new OST Closure Support Thrust 1 Program the following **conclusions** were drawn:

- ***OST has demonstrated the capacity to make a significant contribution to Closure Projects by focusing external resources on specific technical problems hindering project completion.***
- ***The full potential of the new OST approach has been recognized and accepted by the DOE Project Directors, and to a lesser degree by site contractor management.***
- ***OST support is more beneficial to smaller sites because they normally have fewer technical resources available.***
- ***OST-TA will become even more critical to both large and small sites as Closure Site staffing reductions result in the loss of needed technical expertise.***
- ***Cost sharing between OST and OH Closure Projects is required to incentivize the contractors to accept the risk of implementing TA recommendations.***

In order to capitalize on the progress to date of this new OST initiative, the following **recommendations** are offered for consideration:

- ***A major on-site review / planning meeting with representatives from OST, NETL, OH and the OH Closure Sites should take place in the immediate future.***
- ***A separate meeting with each OH Project Director and his/her site contractor management should review progress to date and then jointly develop a mutually agreed-upon path forward.***
- ***The OST management approach for this program should be re-structured to incorporate more field participation and input into management of this new approach.***
- ***A joint meeting with Rocky Flats should take place to share "Lessons Learned" and plan future activities.***
- ***Dedicated funding to implement "Closure Site Projects" resulting from TA recommendations should be specified and made available as originally proposed by OST.***

Overview

The Department of Energy (DOE) Ohio Field Office (OH) consists of the four Closure Sites in Ohio plus the West Valley Demonstration Project in New York. The four OH closure sites are now engaged solely in achieving Closure by 2006. In 1998, the OH Summit made up of DOE and contractor top management chartered the "Ohio Cost Savings Group (OCSG)" to specifically focus on achieving cost savings and schedule improvements. This working group, consisting of DOE and contractor technical representatives from each OH Site and the field office, has facilitated interactions between the Office of Science and Technology (OST), the National Pollution Prevention Program, and the OH Projects.

In 2001 Jesse Hill Roberson, Assistant Secretary for Environmental Management, initiated a "Top-to-Bottom" Review of all EM activities throughout DOE. The results issued in February 2002 called for fundamental changes in the conduct of EM operations. On December 14, 2001, Assistant Secretary Roberson directed OST to reorganize its program to focus on two high priority cleanup needs — Closure Site Support (Thrust 1) and development of Alternative Approaches to Current High Risk/ High Cost Baselines (Thrust 2).

In response to this direction, the OCSG began working on re-deployment of OH resources to take full advantage of the opportunity to work in partnership with OST. Project managers from each of the four closure sites together with the OCSG identified technical assistance needs and technology deployment opportunities for each site. Written technical support requests were jointly developed and submitted to OST.

A meeting between OCSG and OST representatives took place on February 20, 2002 in Miamisburg to review previous activities in OH and provide input for the Closure Site Support program implementation plan. On March 28, OH issued the "Ohio Field Office Request for Closure Site Technical Support". (See OCSG web site at: http://www.ohio.doe.gov/tech/ocsggen.html).

The "Ohio Field Office Request for Closure Site Technical Support" issued on March 28, 2002 identified 37 Technical Support Requests.

This report identified thirty-seven (37) Requests in five "Problem Areas" (number of requests in parenthesis):

1. Building Take Down and Disposal (7)
2. Disposition of Unique and Problem Waste (12)
3. Delineation and Remediation of Underground Contaminants (12)
4. Fernald Silos (4)
5. Closure Enablement (2).

In a subsequent April meeting, Skip Chamberlain, the OST-HQ lead for OH, introduced the Technical Leads selected by OST to support each OH Problem Area. Those technical leads are the points of contact for OH and are as follows:

1. Delineation and Remediation of Underground Contaminants (UGC)
   Carol Eddy-Dilek from SRS
2. Building Take Down and Disposal (D & D)
   Jack Craig (DOE) from NETL
3. Disposition of Unique and Problem Waste (WST)
   Greg Hulet from INEEL
4. Fernald Silos (SILOS)
   Dawn Kaback from Concurrent Technologies
5. Closure Enablement (CEP)
   Carol Eddy-Dilek from SRS

On May 6 James Owendoff, Deputy Assistant Secretary for the Office of Science and Technology, requested each site review their current Technical Task Plans (TTPs) and technology needs, to ensure the FY03 OST Program was fully integrated with Assistant Secretary Roberson's "Accelerated Cleanup" Initiative. The objective of the request was to continue only those current TTPs that would

Table 1. DOE OH Technical Tasks Proposals Summary Table (3rd Quarter FY 2002)

DOE OH TTPs Summary Table							
Site	**Total Number of TTPs**	**Total Number of TTPs Continued**	**Total Number of TTPs Discontinued**	**FIN Plan Funding ($1000)**	**Funding Spent ($1000)**	**2002 Funding Remaining For Continued TTPs ($1000)**	**2002 Funding to be Redirected from Discontinued TTPs ($1000)**
ACP	3	2	1	$1,072	$216	$636	$220
CCP	2	1	1	$872	$872	$0	$0
FCP	14	5	9	$9,933	$972	$7,477	$1,484
MCP	6	2	4	$2,340	$784	$396	$1,160
WVDP	9	1	8	$2,703	$443	$1,154	$1,106
Totals	34	11	23	$16,920	$3,287	$9,663	$3,970

support closure and also identify and prioritize additional technology or technical support needs. On June 10, OH issued a compilation of TTP funding and recommendations (Table 1) (See http://www.ohio.doe.gov/tech/ocsggen.html).

The Technical Support Requests ultimately grew to ninety-one by June (including the 34 existing OH TTPs). As a result Jack Craig, Acting OH Manager, directed each OH site to select their top priority requests (excluding existing TTPs), rank them, and estimate the amount of funding needed in 2003. On June 18, a final Closure Support Requests Table was issued that identified thirty-five requests (Attachment A) with an estimated $28.52 Million cost to resolve the problems described. These tables are also viewable on the OCSG web site.

Each table is embedded with PDF files containing the initial technical support request. A summary of the number of Technical Support Request for each site and the amount of FY 2003 funding estimated to be needed by that site is presented in Table 2.

DOE OH Technical Support Requsts		
OH Sites	**Technical Support Request**	**2003 Funding Requested (Million)**
ACP	5	$1.70
CCP	4	$2.35
FCP	10	$11.92
MCP	11	$10.35
WVDP	5	$2.20
Total	**35**	**$28.52**

Table 2. Top Priority Technical Support Requests and Estimated 2003 Funding Needed for OH Sites.

The present program to provide TA to OH was developed by EM-50 and presented to OH in late April 2002. The plan called for providing TA in each of the five major problem areas identified by the OH Closure Sites. The following five sections discuss the technical assistance that has been provided to each of the five sites since the initiation of Thrust I. In many cases the TA specifically targets a technical support request. In other instances, a number of TA efforts have been derived from an initial single request (e.g., Surface and Subsurface Characterization). Summaries of the nine formal TA Team Reports produced in 2002 are presented in Attachment B.

It is important to note that initiation of TA for a specific request is just the beginning of the TA process as envisioned in the "Top-to-Bottom Review." Most of the 25 Technical Support Request addressed during 2002 will still require continuing TA support. Only in a few cases has the request been addressed and eliminated as a need. In most other cases, addressing a request has resulted in the identifi-

cation of more specific problem areas requiring additional technical effort to resolve the issue.

Attachment C contains a summary of the proposed OH Technical Support Requests for 2003. The new proposals have resulted in large part from the initial TA Team recommendations from 2002.

Ashtabula Closure Project

Background

The Ashtabula Closure Project (ACP) originally covered 32 acres, included 25 buildings and pads with a footprint of approximately seven acres. The facility is located in Ashtabula Ohio. Remediation work at the site is progressing at an accelerated pace, with site closure currently projected for 2006. The OST support to date has produced a much better understanding of the actual work remaining. Continuing OST support in implementing TA Team recommendations will allow both DOE and the site owner / contractor to approach the possible early closure of the site with more confidence. A new incentivized contract to achieve that early closure is currently being negotiated.

Technical Support Request

The ACP initially identified nine (9) technical support requests. They subsequently prioritized their requests and submitted the five top priority TA needs and later added one addition TA need for a total of six (6). The ACP requests were:

AEMP 02-02-3	Pipe Explorer
AEMP 02-03-3	Integrated Subsurface Characterization
AEMP 02-04-3	GeoProbe Deployment
AEMP 02-05-1	Concrete Decontamination
AEMP 02-01-2	Container Macroencapsulation
AEMP 02-10-X	Waste Water Treatment Plant Evaluation

During FY02, all six TA needs were addressed by OST and the OCSG. The following are details of the TA provided for each request.

Technical Assistance Activities

The OCSG and OST have collectively provided very focused technical assistance to Ashtabula. Continuing the OST support in the CAMU area is required because it is the Critical Path to Closure at ACP. The current TA Team was assembled in mid-FY02 to support characterization initiatives and facilitate the transfer or information and technologies. Two other TA Teams have reviewed alternatives for soils, concrete, groundwater and water treatment. A valuable tool in facilitating TA to the site

has been routine conference calls (beginning 8/5/02) between the TA Team and the site Project Managers.

Technical Assistance Teams Reports

Three TA Teams have been deployed to support ACP during 2002, and subsequently three TA Reports have been produced (listed below). Each report can be accessed at the OCSG web site at http://www.ohio.doe.gov/tech/ocsgta.html. Overviews of each report and a brief description of the recommendations are contained in Attachment B.

6/25-28/2002	Recommendations to Address Contaminated Soils, Concrete, and Corrective Action Management Unit/Groundwater Contamination at Ashtabula, Ohio
6/26-27/2002	Characterization of Underground Piping Contaminated with Radionuclides at the Miamisburg, Columbus, and Ashtabula Environmental Management Projects
10/29-30/2002	Evaluation of Proposed Modular Waste Water Treatment Plant

On-Site Activities

Some of the TA activities during 2002 were a continuation of earlier initiatives by the site that were supported by OST and the OCSG. However, many of the activities during 2002 resulted from the TA recommendations contained in the TA Report "Recommendations to Address Contaminated Soils, Concrete, and Corrective Action Management Unit/Groundwater Contamination at Ashtabula, Ohio". Most of the technology deployments, work plans, subsequent reports and support activities at the Ashtabula site were made possible by the redistribution of previously provided ASTD funding.

Soils

Characterization of surface and subsurface soils adjacent to and underneath buildings has been a major issue/need for the ACP. There has been a high uncertainty in the total remediation cost for the site that resulted from significant differences in the soil volume estimates initially identified in the baseline and subsequently in the revised baseline. Therefore, there was a strong need to correctly estimate the volume of contaminated soil to be either treated or excavated for off-site disposal. In addition, there was a need to develop a sampling and analysis program on site that would support an aggressive closure schedule while reducing uncertainties and perhaps cost. Two technologies, GeoProbe and the Radiation Scanning System (RSS) were deployed during the past year to support soil characterization.

GeoProbe – In October 2001, an ITRD funded soil sampling plan using a GeoProbe was issued by Argonne National Laboratory (ANL). The report "Sampling Strategies for Estimating Subsurface Contaminated Soil Volumes Associated with the Extrusion Plant" is available on the OCSG web site. To implement the sampling plan, the OCSG facilitated the transfer of a GeoProbe unit from Columbus

GeoProbe deployment at Ashtabula in 2001 for sampling of soils adjacent to and underneath buildings.

to Ashtabula. The additional characterization work necessary to to better define contaminated soil volumes at ACP was made possible by this loan of OH equipment from site to site. This work yielded 171 GeoProbe soil cores and more than 1,000 XRF results for total uranium. These data were used to revisit the contaminated soil volume estimate. A final draft report, "Supplemental Characterization of Contaminated Soils Associated with Buildings at the Ashtabula Site" was issued by ANL in March 2002. The report is also available on the OCSG web site.

Based on this sampling effort, the GeoProbe unit was identified as a vital technology for further subsurface soil characterization. Part of recommendations was to deploy the GeoProbe with cone penetrometer adapter and instrumented probes such as the Membrane Interface Probe System (MIPS)

GeoProbe and MIPS deployment at Ashtabula in December 2002 for sampling of potenitally TCE-contaminated soils.

and sodium iodide (NaI) sensor. In late September, ANL issued a "Performance Verification and Validation Plan for an NaI-Tipped Cone penetrometer System". (Available on the OCSG web site)

As a result of the recommendations from the TA study in June 2002, the GeoProbe was again transferred (loaned) from Columbus to Ashtabula on 10/16/02, this time with a new cone penetrometer attachment provided by OST. In addition, Savannah River Site (SRS) personnel assembled a MIPS (acquired from GeoProbe Systems) with a Controller Box (obtained from the Site Characterization and Penetrometer System [SCAPS] at the SRS.) The equipment arrived in late November and SRS personnel arrived on site December 2 to support the TCE characterization in soils. The sampling and analysis plan (SAP) was completed December 2 by Sharp and Associates with input from the OCSG/ OST. Analyses will focus on volatile organic compounds (VOCs), uranium (U) and technetium (Tc). The scope of this initial effort was approximately 2 weeks and concluded on December 13.

Scanning of surface soils for uranium contamination at Ashtabula in 2002 with the RSS.

Radiation Scanning System (RSS) - The transfer of the technology from Fernald to Ashtabula was initiated in March 2002, under an agreement between the two DOE Project Directors. Fernald identified a 3-week window in September in which the RSS could be transferred to Ashtabula and used to survey surface soils. By mid-September, RMIES personnel were trained at Fernald on the operation of the RSS. RMIES worked with ANL and Fernald during late September to construct a SOW for technical support for operating the RSS at Ashtabula. Contracts were in place by early October and the RSS and technical support arrived in Ashtabula 10/16. Nearly 7 acres were surveyed over a two-week period.

A draft report, "Deployment of the Fernald Radiation Scanning System (RSS) at the Ashtabula Site" was issued in December and is currently under review. The report noted that "The RSS established that real-time scans combined with locational control system and logging capabilities have the ability to assist in soil segregation during excavation and soil surfaces closure post-remediation of the Ashtabula site".

Concrete

The current baseline approach calls for removal of all concrete (slabs and foundations) and asphalt for off-site burial as low-level waste except for the ten buildings RMI would like to retain. The current estimated amount to be shipped is 114,900 cubic feet. However, much consideration has been given to final disposition alternatives for the concrete that would be based on the level of contamination. As a result, concrete characterization became a primary need and decontamination became a secondary need. Two concrete characterization technologies have been used during 2002, and a decontamination technology is scheduled for deployment in the spring of 2003.

Ludlum Floor Monitor w/ Tremble GPS – In mid - August RMIES sent the system and a technician to ANL for calibration and training, respectively. RMIES began characterizing the surface of concrete slabs the week of 8/26. All slabs were characterized by the end of November. A draft report by RMI is scheduled out in early 2003. ANL continues to provide technical support to RMIES in evaluating data.

TRUPRO – This concrete sampling technology by New Millennium Nuclear Technology (NMNT) was originally identified in the May/June 2002 timeframe for possible application at OH sites. RMI issued an RFP in July for a concrete core sampling and characterization technology. A proposal from NMT was received 10/21 by RMIES and a contract was awarded in November. Concrete characterization work was preformed in December and a report is scheduled for release in early 2003.

Blastrac – The OCSG and RMIES worked with Florida International University (FIU) to move the Blastrac to Ashtabula to test decontamination and surveying capabilities for concrete slabs. The Blastrac was decontaminated at Alaron in early September and arrived in Ashtabula on 10/18. A laser tracking system will be used to plot GPS coordinates. Survey data will also be compared to data from the Ludlum-survey effort. RMI received an operation permit exemption from OEPA in late November. The deployment of this technology is currently on hold until Spring 2003 due to weather and budget constraints.

CAMU/Groundwater

This technical assistance request sought evaluation, recommendation, development, and application of a process to treat source material of approximately 6,600 cubic yards of soil/sediment contaminated with organic solvents (primarily TCE), Tc-99, and U in the CAMU and the associated groundwater plume. The recommendations for groundwater and the Corrective Action Management Unit (CAMU) were combined since characterization and remediation could not realistically be separated in this area. Direct-push technology was recommended to be used to further characterize the site including the CAMU source area and plume to support the design and optimization of the remedial system. Two technologies were deployed to address this characterization need, the SCAPS and the GeoProbe.

Columbus Closure Project

BACKGROUND

Closure of the Columbus West Jefferson site is scheduled for 2006. Current D&D work involves removing material from and then removing three buildings (JN-1, Hot Cell Facility; JN-2, Critical Assembly Building; and JN-3, Reactor Building) previously used for radioactive material research activities. Significant portions of the work activities are now approaching the final stages of the decontamination phase and are entering the demolition preparation phase.

Contaminated soils and drain lines on the site will be excavated and disposed of off-site. Contaminated structures will be decontaminated, demolished and disposed of off-site. Many of the remaining utilities and structures will be removed as part of external area remediation. Contaminated filter beds are currently being remediated, on an experimental basis, using an in-situ soil flushing technology. Excavation and refill may be required, depending on the success of the new technology.

TECHNICAL SUPPORT REQUEST

The Columbus Closure Project (CCP) initially identified nine (9) technical support requests. They subsequently prioritized their requests and submitted the four (4) top priority TA needs and later added one addition TA need for a total of five (5). The original CCP Requests were:

CEMP 02-07-3	Surface Characterization for Free Release
CEMP 02-04-1	Removal of Radioactive Hot Cell Structures
CEMP 02-03-1	Stabilization of Radioactive Surfaces for Commercial Building Destruction
CEMP 02-08-3	Accelerated Filterbed Remediation Using WIDE

TECHNICAL ASSISTANCE ACTIVITIES

TA activities during 2002 were given lower priority by the OCSG in allocating OST resources in 2002: however, TA activities in 2003 are expected to increase significantly to support CCP closure effort.

Technical Assistance Teams Reports

No TA Reports were issued.

On-Site Activities

The only direct OST on-site involvement at CCP during 2002 involved the:

> 3-D Mapping of Cesium Contamination and Remediation in the Filterbed Using the WIDE System. Technical Assistance was provided to the CCP and the project team in support of the remediation of the Cs-contaminated filterbed using the WIDE system. Personnel from SRS were used to construct a 3-D map of the contamination to support remediation efforts.

However, Columbus personnel fully participated in all related activities at Ashtabula and Miamisburg during 2002. The CCP schedule will now allow full utilization of all available OST resources in 2003.

Fernald Closure Project

Background

The Fernald Closure Project (FCP) issued a revised execution baseline in March 2002 that outlines how Fernald will achieve site closure by late 2006, three years earlier than the site's current baseline. To attain site closure, Fluor Fernald (prime contractor) must remediate all contaminant sources, contain all groundwater contamination, and develop long-term treatment and monitoring capabilities.

Cleanup of the 1,050-acre FCP is organized into the following projects:

- Silos 1 and 2 – 8,900 cubic yards of low-level radioactive, radium bearing waste
- Silo 3 – 5,100 cubic yards of low-level radioactive waste
- Waste Pits – 790,000 tons of low-level radioactive waste
- Soil and Disposal Facility – 2.2 million cubic yards of contaminated soil
- Building Decontamination and Demolition – 223 buildings and structures
- Aquifer Restoration – 170 acres of the Great Miami Aquifer
- Waste Generator Services –2.5 billion pounds of waste
- Nuclear Material Disposition Project – 31 million net pounds of uranium product

Technical Support Request

The FCP initially identified thirty-eight (38) technical support requests. They subsequently prioritized their requests and submitted the ten (10) top priority TA needs and later submitted six additional TA needs for a total of sixteen (16). The FCP Requests were:

FEMP 02-19-2	Vacuum Assisted Thermal Desorption Deployment Project
FEMP 02-03-4	Key Components for Disposition of Fernald Silo Wastes
FEMP 02-05-4	Risk Reduction and Schedule Acceleration for Fernald Silos 1 and 2 Waste Treatment Container Transfer Cars, Fill Station, and Lid Closure Systems
FEMP 02-32-4	Silo 3 Waste Removal System – Pneumatic Excavation and Mechanical Excavation and Waste Packaging
FEMP 02-04-4	Expedited Disposition of Silo Waste by Shielded Railcar

FEMP 02-02-2	Optimal Disposition of Fernald Unique Wastes
FEMP 02-09-2	Accelerated Disposition of Non-actinide isotopes and Sealed Sources
FEMP 02-10-2	Acceleration of Fernald Sample Disposition
FEMP 02-13-2	Treatment and Beneficial use of Organically Contaminated Soil
FEMP 02-25-2	Waste Pits Remedial Action Project (WPRAP) Pit 5 Material Dewatering Project
FEMP 02-15-2	Optimize Optimal Uranium Removal from Ion Exchange Regeneration Solution
FEMP 02-01-5	Initiative on Post Closure Stewardship Initiative
FEMP 02-11-2	Accelerated Disposition of Fernald TRU Waste in T-Hoppers
FEMP 02-08-2	Accelerated Disposition of Discrete Problem Waste
FEMP 02-14-2	Disposition of Enriched Uranium Compounds and Residues
FEMP 02-X-5	Technologies to Address Leachate from the On-Site Disposal Facility at the FEMP

During FY02, ten TA needs were addressed by OST Following are details of the TA provided during 2002.:

TECHNICAL ASSISTANCE ACTIVITIES

In addition to yearlong support of the Silos Project OST provided three TA teams to Fernald site during 2002 to evaluate three different requests. Included were evaluations of the On-Site Disposal Facility (OSDF) brine regeneration, waste water treatment, and volatile organic compounds (VOCs) in soil. In addition, six requests related to the problem waste streams were addressed last year. A tenth request related to thermal desorption technology has been deferred.

Technical Assistance Teams Reports

Three TATs were deployed to support FCP during 2002, and subsequently three TA Reports have been produced (listed below). Each report can be accessed at the OCSG web site. Overviews of each report and a brief description of the recommendations are contained in Attachment B.

5/29-31/2002	Technologies to Address Excavated VOC Contaminated Soil from Areas 3A/ 4A and Plant 6 at Fernald Environmental Management Project, Ohio
8/6-7/2002	Solution for Fernald Treatment of Uranium in Brine Ion Exchange Regeneration Fluid
8/6-7/2002	Technologies to Address Leachate from the On-Site Disposal Facility at Fernald Environmental Management Project, Ohio

Most of the activity to date has resulted from the TA recommendations that addressed soils, concrete and groundwater.

Unique and Problem Waste Issues

Optimal Disposition of Fernald Unique Wastes (5/22/02 – 9/31/02)
Key waste streams addressed:
a) Gas and UF6 cylinders: The TA Team helped Fernald line up Integrated Environmental Services through a basic ordering agreement (BOA) that had been set up through the Waste Elimination Team (WET). IES has inspected Fernald's gas cylinders and provided a proposal under the BOA to process cylinders. Fernald is reviewing some of the Integrated Environmental Services procedures to ensure that the cylinders will be treated in a manner that meets Fernald requirements. Battelle Columbus is also working with IES through the WET BOA to have some problematic cylinders treated and disposed.
b) Barium compounds: Team worked with National Material Recycle Center (NMR) and identified path for barium compounds. Toxco, Inc in Oak Ridge indicated interest in the material but needed sample data to make a final decision. Fernald reported that obtaining a sample of barium material was too much effort to be able to use the disposal path in FY02. A sample may be obtained at a later date.

Accelerated Disposition of Discrete Problem Waste (5/20/02 – 8/31/02)
Battery Macroencapsulation: The Team worked with Envirocare of Utah (EOU) to take advantage of new pricing for macroencapsulation that EOU will offer in a contract under negotiation with the Chicago DOE field office. The Team developed the plan to make use of the new pricing, reached agreement with EOU that Fernald could use the new pricing in a Fernald contract, and has provided the information to Fernald. Fernald procurement issued a contract to Envirocare and at last report was shipping lead shape waste for treatment and disposal.

Accelerated Disposition of Fernald TRU Waste in T-Hoppers (5/8/02 – 8/2/02)
Potential paths to disposal for the two Fernald T-hoppers were identified and work has focused on developing cost and schedule estimates for the most likely paths. After discussions with Fernald, the group decided to focus efforts on development of paths for treatment off-site. This decision should reduce the manpower required for the effort.

Based on initial discussions with Nuclear Fuel Services (NFS), both T-hoppers can be transported off-site using the Super Tiger transporter. Both T-hoppers can likely fit into one Super Tiger with no size reduction required. The cost to complete the transportation operation is roughly $50K with additional funds required for the Fernald support. NFS can treat both T-hoppers - removal of residues and treatment of the RCRA constituents – under their home office support contract if Fernald desires. Fernald must request a cost estimate from NFS if that option appears interesting.

WCS was also investigated as a potential treatment path. WCS has permits in place to treat and store TRU waste, but do not yet have all of the internal procedures in place to do so. They may be an alternative in about 6 months when their internal documentation is complete. Disposal paths being

investigated include: disposal of the stabilized T-hopper residues at NTS or Hanford, or disposal of the TRU at WIPP via a certified characterization program at another DOE site. Those other DOE site contacts were initiated but no firm commitments or cost estimates have been made. The Team prepared a short summary report and forwarded it to Fernald.

Disposition of Enriched Uranium Compounds and Residues (5/8/02 – 8/2/02)
Nuclear Materials Focus Area provided support to this task to determine what must be accomplished to dispose of the waste at Nevada Test Site or Hanford. A criticality expert was recruited to coordinate with NTS to determine the disposal requirements and perform the necessary support calculations. Work being done at NTS and Los Alamos is expected to open the door for disposal of the enriched uranium waste.

Accelerated Disposition of Non-actinide Isotopes and Sealed Sources (5/20/02 – 6/30/02)
A representative from the Non-Actinide Isotope Sealed Source Management Group has been to Fernald twice to update their source disposition plan. NISSMG will continue to support Fernald in finding paths for their sources. The overall plan is complete, but the actual movement of sources will require additional support. Some support may be required from the Offsite Source Recovery Project.

Accelerated Fernald Sample Disposition (6/1/02 – 10/17/02; continuing)
Representatives from the Chamberlain Group and Concurrent Technologies provided support to Fernald and Performance Development Corporation in accelerating the disposition of the Fernald sample residues. Numerous steps were taken:

- Conducted a radiographic analysis of the sample drums to determine as much as possible the contents.
- Researched means of performing field analyses of individual sample containers to expedite characterization and disposal.
- Determined potential contaminants from existing site data to better target the field analyses.
- Determined an alternative treatment and disposal path for the sample waste and worked with Waste Control Specialists to outline that pathway.
- Prepared a decision matrix for the process of opening the drums of samples and segregating the samples according to their anticipated disposal path
- Prepared a Work Plan for opening the drums of samples and segregating the samples according to their anticipated disposal path and in accordance with the decision matrix.
- Provided information on vial crushing techniques that have been used at Mound

Additional assistance will be required in February or March when the Fernald waste handlers start work on the sample containers with unknown contents.

Miamisburg Closure Project

Background

The Miamisburg Closure Project (MCP) is a 306-acre site is within the city limits of Miamisburg, Ohio and surrounded by private residences. It was initially comprised of 90 structures on 184 acres. Cleanup of the MCP is following a Phased approach to D&D and Environmental Restoration (ER). This approach allows for facilities undergoing D&D to either be demolished and disposed of off site or transitioned to the Miamisburg Mound Community Improvement Corporation (MMCIC).
MCP has recently signed a new Cost Plus Incentive Fee contract with CH2M Hill to close the site ahead of the previous baseline. The TA provided by OST was done on the basis that the new contractor would ultimately act on the recommendations provided. The review of the technology program is currently underway to determine the extent of future use of OST support.

Cleanup of the MCP site is organized around the following Project Baselines:

- Main Hill Tritium Project
- Main Hill Rad and Non Rad Projects
- SM/PP Hill Projects
- Test Fire Valley
- Soils
- Environmental Restoration
- Post –Closure Administration

Technical Support Request

The MCP initially identified fourteen (14) technical support requests. They subsequently prioritized their requests and submitted the eleven (11) top priority TA needs. The MCP Requests were:

MEMP 02-01-1	Mitigation of Fugitive Emissions During Building D&D
MEMP 02-04-3	Integrated Subsurface Characterization
MEMP 02-02-3	Characterization of Contaminated Piping inside, Between and Underneath Buildings
MEMP 02-14-2	Characterization of Thorium Drum contamination
MEMP 02-06-2	Mobile/Modular Waste System
MEMP 02-07-5	Post Closure Stewardship Monitoring Technologies

MEMP 02-16-1	Develop T-Building Verification Program Incorporating MARSSIM
MEMP 02-03-3	Real-Time Pu238 Characterization
MEMP 02-05-2	Management of Electronic Equipment from Radioactive Materials Management Areas
MEMP 02-08-3	Cone Penetrometer Deployment
MEMP 02-15-2	AEA Fluidic Pump for Sumps

During FY02, eight TA needs were addressed by OST and the OCSG. The following are details of the TA provided for each request and are addressed in order of priority.

TECHNICAL ASSISTANCE ACTIVITIES

The OCSG in conjunction with the OST has provided very focused technical assistance to the MCP. Four TA teams assembled at the Mound site during 2002 to evaluate specific requests in the areas of Building Take Down and Characterization and Delineation of Underground Contaminants. As in the case of the AEMP, some of the TA activities during 2002 were a continuation of earlier initiatives by the site and the OCSG. Eight of the top priority requests were to some level addressed during 2002.

Technical Assistance Team Reports

Four TA Teams have been deployed to support MCP during 2002, and subsequently four TA Reports have been produced (listed below). Each report can be accessed at the OCSG web site. Overviews of each report and a brief description of the recommendations are contained in Attachment B.

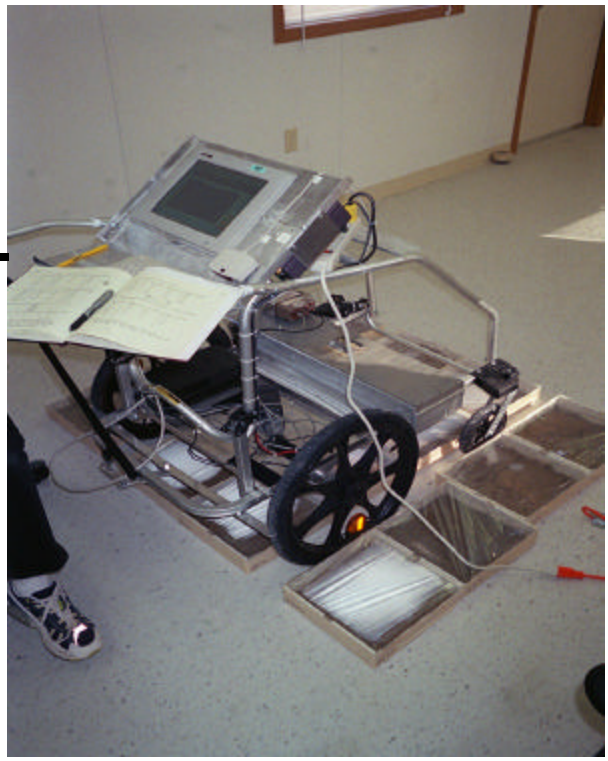
6/26-27/2002	Characterization of Underground Piping Contaminated with Radionuclides at the Miamisburg, Columbus, and Ashtabula Environmental Management Projects
7/29-8/1/2002	Mitigation of Fugitive Emissions during Building D & D at the Miamisburg Environmental Management Project
9/30-10/4/2002	Independent Review of the Main Hill Project Estimates of Tritium inventories, Release Fractions, and the Overall D & D Approach for the Miamisburg Closure Project
10/28-31/2001	Recommendations to Address Uncertainties in Characterization and Delineation of Contamination at the Miamisburg Closure Project

On-Site Activities

In addition to the recommendations of the TA Teams being reviewed by the contractor work was done in the following areas.

SW Building Subsurface Characterization – In August 2001, ITRD issued "Phase I Characterization Strategies for Subsurface Soils Adjacent to the SW and R Buildings" that was a joint effort among ANL, EMS, SNL and Ohio State University (OSU). This approach was somewhat modified by Weston in late 2001 and subsurface core and characterization began in 2002. A characterization report by Weston is expected soon.

Pu-238 Detector – The critical need for a field instrument to detect Pu-238 real-time at 55 pCi/g caused INEEL to attempt research and development of a device over the past year. They built an "Actinide X-ray In-situ Scanning System" (AXISS) using alarge area proportional counter (LAPC) type detector. Working with ORNL, EML and BWXTO, and the OCSG, they designed and conducted a pre-test of the system at the MCP (10/21-24/2002). An



The "Actinide X-ray In-situ Scanning System (AXISS)" being tested at the MCP for measuring Pu-238 in spiked soils.

The TRUPRO Hollow Core Drill by New Millennium Technology was deployed at MCP in November 2002.

in-house-report "Mound Closure Project (MCP) Pre-Demonstration Test of INEEL's Actinide X-ray In-situ Scanning System (AXISS)" was issued November, 2002. (available at http://www.ohio.doe.gov/tech/ocsgchar4.html). The report indicated that the 4-day pre-test wasa successful first evaluation of the AXISS System's ability to detect and measure Pu-238. However, based on the observations of this pre-test, it was concluded that the AXISS for Pu-238 detection was not mature enough for a full-scale field test. However, it is possible that the system could be made viable if the issues highlighted by this pre-test are considered and corrected by INEEL. They are currently preparing an internal report of the test and will be targeting for a February-March timeframe to conduct a second phase of testing at the MCP. This is a Corporate Funded Research and Development (CFRD) project by BWXT in cooperation with EML and ORNL.

TRUPRO – This concrete profiling technology by New Millennium Technology (NMT) was originally part of the LSDDP at Mound in 2001. In the May/June 2002 timeframe, the technology was targeted again for a second application at OH sites, specifically the MCP and AEMP. Recently, NMT demonstrated the hollow core hammer at the MCP (November 18-22, 2002) The result of this effort will be available in December. NMT also deployed to Ashtabula the week of December 9 with results to be reported soon.

Mobile/Modular Waste System (5/5/02 – 8/31/02) - Concurrent Technologies completed a draft report summarizing the results of its survey of water treatment systems. That draft report was sent to Mound for review.

Management of Electronic Equipment from Radioactive Materials Management Area - The technical assistance team the life-cycle- cost savings that would be generated if the baseline were changed to ship the electronic components to Oak Ridge for processing. The estimated $21,000 in

savings would not justify a change in the baseline process for handling radioactive electronics.

Aerial Imaging - BWXTO issued an RFP to determine if aerial imaging technologies may be suitable for post closure monitoring of deed restrictions for the Mound site as part of Closure Enablement. Bids have been evaluated but the contract award will be delayed until the new site contractor takes over the Mound site.

Connate Water – As a result of a TA Team recommendation, MCP requested support develop and implement a plan to deal with bedrock water to determine if recent radium detections are a result of plant operations or are connate water. The follow-up TA is currently being provided.

Rebound Test – As a result of a TA Team recommendation, MCP requested technical assistance to develop the rebound test for the groundwater treatment system at Mound's Operable Unit 1. The follow-up TA is currently being provided.

STP Standard – MCP has requested assistance in obtaining a stable tritiated particulate (STP) standard for the Mound ER Lab.

T-Building Characterization – MCP has requested assistance in planning the T Building final characterization to allow the facility to be transferred for industrial use.

Video Surveillance / Machine Vision – MCP has funded purchase of three Machine Vision systems to determine if this technology will be suitable for post closure monitoring of deed restrictions for the Mound site. This contract is being managed through NETL.

Data Management – MCP is evaluating the post closure data management needs and the innovative technologies available to meet those needs.

Nochar – The remaining NoChar work at the other DOE sites funded by the Technology Programs was completed in December 2002.

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West Valley Demonstrations Project

Background

The WVDP occupies 200 acres and is a former commercial reprocessing facility for spent nuclear fuel. Vitrification of the high level radioactive waste has been completed, resulting in the production of 277 glass logs. These canisters meet the acceptance criteria for long-term geo-logic disposal and will be stored on site until such a repository is opened. At this time, the high-level waste solidification portion of the West Valley Demonstration Project Act is complete, and the Project is now in the decontamination portion of its mission. The site is located 35 miles south of Buffalo, New York and per the West Valley Demonstration Project Act must conduct the following activities :

- Solidify the high-level radioactive waste;
- Develop containers suitable for permanent disposal of the waste;
- Transport the solidified waste to a Federal repository for permanent disposal;
- Dispose of low-level radioactive waste and transuranic waste produced by solidifying the high-level radioactive waste; and
- Decontaminate and decommission the tanks, facilities, and any material and hardware used in connection with the Project.

Technical Support Request

The WVDP initially identified 23 technical support requests. They subsequently prioritized their requests and submitted the five top priority TA needs. The WVDP TARs were:

WVDP 02-15-1	Hot Cell LSDDP at WVDP
WVDP 02-04-1	Development of Grout for In Situ Closure
WVDP 02-06-1	High Level Waste Tank Closure
WVDP 02-14-1	Contact Size Reduction of Components
WVDP 02-08-1	Radioactivity Measurement of Residual Radioactive Waste

Technical Assistance Activities

TA activities during 2002 were minimal and 2003 activities will continue to be so until contracting and regulatory issues are resolved at the site.

OCSG Web Site

The OCSG maintains a web page on the OH server to facilitate information management for its technical support activities. The web site is a relatively simple low maintenance site, the sole purpose of which is to house documents relevant to OCSG activities and technical documents generated as part of a specific project. There are three primary values that the web site offers:

1. It provides a central location for documents relative to technical support activities at each of the five OH sites that are a result of the Thrust 1 initiative.
2. It makes most/all of the documents relative to a specific project, activity or technology available to the Project Team and Technical Assistance Team on a real-time basis.
3. It provides a simple archiving mechanism for all documents relative to specific technology deployments (e.g., work plans, SAPs, data, technical reports, etc.) that allows Complex-wide access to support technology evaluation and deployment.

The simple design of the OCSG Home Page allows for quick access to documents pertaining to each of the five Problem Areas for any of the five OH sites. The site also provides easy access to all OH TA Reports and OCSG documents.

The OCSG web site is part of the OH web site and is maintained on the OH server. It is accessible by going either to the OH Home Page at (*http://www.ohio.doe.gov*) *and clicking on the "Technology" button or by going directly to the OCSG Home Page at http://www.ohio.doe.gov/tech.asp*.

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Attachments

Attachment A: 2002 Technical Support Requests by Site

Ashtabula Closure Project

AEMP 02-02-3	Pipe Explorer
AEMP 02-03-3	Integrated Subsurface Characterization
AEMP 02-04-3	GeoProbe Deployment
AEMP 02-05-1	Concrete Decontamination
AEMP 02-01-2	Container Macroencapsulation
AEMP 02-10-X	Waste Water Treatment Plant Evaluation

Columbus Closure Project

CEMP 02-07-3	Surface Characterization for Free Release
CEMP 02-04-1	Removal of Radioactive Hot Cell Structures
CEMP 02-03-1	Stabilization of Radioactive Surfaces for Commercial Building Destruction
CEMP 02-08-3	Accelerated Filterbed Remediation Using WIDE

Fernald Closure Project

FEMP 02-19-2	Vacuum Assisted Thermal Desorption Deployment Project
FEMP 02-03-4	Key Components for Disposition of Fernald Silo Wastes
FEMP 02-05	Risk Reduction and Schedule Acceleration for Fernald Silos 1 and 2 Waste Treatment Container Transfer Cars, Fill Station, and Lid Closure Systems
FEMP 02-32-4	Silo 3 Waste Removal System – Pneumatic Excavation and Mechanical Excavation and Waste Packaging
FEMP 02-04-4	Expedited Disposition of Silo Waste by Shielded Railcar
FEMP 02-02-2	Optimal Disposition of Fernald Unique Wastes
FEMP 02-09-2	Accelerated Disposition of Non-actinide isotopes and Sealed Sources
FEMP 02-10-2	Acceleration of Fernald Sample Disposition
FEMP 02-13-2	Treatment and Beneficial use of Organically Contaminated Soil
FEMP 02-25-2	Waste Pits Remedial Action Project (WPRAP) Pit 5 Material Dewatering Project

SECTION 5 – MIAMISBURG CLOSURE PROJECT

MEMP 02-01-1	Mitigation of Fugitive Emissions During Building D&D
MEMP 02-04-3	Integrated Subsurface Characterization
MEMP 02-02-3	Characterization of Contaminated Piping inside, Between and Underneath Buildings
MEMP 02-14-2	Characterization of Thorium Drum contamination
MEMP 02-06-2	Mobile/Modular Waste System
MEMP 02-07-5	Post Closure Stewardship Monitoring Technologies
MEMP 02-16-1	Develop T-Building Verification Program Incorporating MARSSIM
MEMP 02-03-3	Real-Time Pu238 Characterization
MEMP 02-05-2	Management of Electronic Equipment from Radioactive Materials Management Areas
MEMP 02-08-3	Cone Penetrometer Deployment
MEMP 02-15-2	AEA Fluidic Pump for Sumps

SECTION 6 – WEST VALLEY DEMONSTRATION PROJECT

WVDP 02-15-1	HOT CELL LSDDP AT WVDP
WVDP 02-04-1	Development of Grout for In Situ Closure
WVDP 02-06-1	High Level Waste Tank Closure
WVDP 02-14-1	Contact Size Reduction of Components
WVDP 02-08-1	Radioactivity Measurement of Residual Radioactive Waste

Attachment B: Summary of Technical Assistance Reports

UGC Study No. 1: ***Technologies to Address Excavated VOC Contaminated Soil from Areas 3A/4A and Plant 6 at Fernald Environmental Management Project, Ohio***

Date of Study: May: 29-31, 2002 Date First Draft out: June 19, 2002

EM-50 Technical Lead: Carol Eddy-Dilek EM-50 Participants: 8

Results and Recommendations: The TA Team recommended using "enhanced soil venting" to treat approximately 1800 cubic yards of VOC contaminated soil in order to allow that soil to be buried in the on-site disposal cell.

UGC Study No. 2: ***Recommendations to Address Contaminated Soils, Concrete, and Corrective Action Management Unit/Groundwater Contamination at Ashtabula, Ohio***

Date of Study: June 25-28, 2002 First Draft out: July 15, 2002

EM-50 Technical Lead: Carol Eddy-Dilek EM-50 Participants: 10

Results and Recommendations: Recommendations were made in three areas.
Soils: focus on integrating "real-time" data collection into the excavation process and use resulting data to address the uncertainties inherent in the actual footprint of contamination.
Concrete: In the short term, obtain detailed information on extent of contamination using several means. When these short-term actions are complete, an independent cost benefit evaluation and timeline should be completed using this information.
CAMU/ Groundwater: First, deploy direct-push technology to further characterize the site including the CAMU source area and plume. Next, accelerate excavation of the CAMU, thereby eliminating two years of HRC injections. Install and monitor a Geodrain or Geosiphon pipe and consider amendments based on results.

UGC Study No. 3: ***Characterization of Underground Piping Contaminated with Radionuclides at the Miamisburg, Columbus, and Ashtabula Environmental Management Projects***

Date of Study: June 26-27,2002 First Draft out: September 13, 2002

EM-50 Technical Lead: Dawn Kaback EM-50 Participants: 6

Results and Recommendations: The TA Team recommended the use of the Graded

Approach for characterization of underground piping at facilities like the Ashtabula Environment Management Project where some piping may be located in areas not contaminated or may contain some radionuclides that can be easily remediated in place. The TAT also recommended further investigation of two alternatives for the T-Building North Hot Waste Line at the Miamisburg Site: removal or remediation.

D & D Study No. 4: ***Mitigation of Fugitive Emissions during Building D & D at the Miamisburg Environmental Management Project***

Date of Study: July 29-Aug. 1, 2002 First Draft out: August 1, 2002

EM-50 Technical Lead: Cliff Carpenter (DOE) EM-50 Participants: 10

Results and Recommendations: The primary focus of this effort was to validate the emissions modeling was being done properly by the site and then recommend ways the emissions may be reduced. The subject-matter-experts conducted an independent review of plant practices and found no major problems. The TA Team then made five alternative proposals as follows:

1) Re-evaluate the conservative assumptions used in modeling the site airborne emissions because using more realistic assumptions in predictive modeling could allow more work to be scheduled in a given period.
2) Use improved tools and techniques to secure needed characterization data and then use the data more effectively (listing of tools and techniques provided
3) Use proven large scale enclosures with currently available vent stacks to expedite closure
4) Utilize proven new technologies to dismantle, size reduce, and then pack and ship the waste (listing of new technologies provided).
5) An independent review of the over-all D & D technical approach and final closure plan comparing the current strategy with those used at other sites and in the commercial nuclear industry was recommended.

UGC Study No. 5: ***Solution for Fernald Treatment of Uranium in Brine Ion Exchange Regeneration Fluid***

Date of Study: August 6-7,2002 First Draft out: August 15, 2002

EM-50 Technical Lead: Carol Eddy-Dilek EM-50 Participants: 5

Results and Recommendations: The TA Team recommended a tiered approach to remov-

ing uranium from the brine solution with each step in the tier being taken only if the previous steps are insufficient. The steps are:

1) Add sodium thiosulfate to the solution either with or after treatment with lime.
2) Replace the addition of lime with reactive magnesia.
3) Attempt addition of zero-valent iron or magnetite
4) Evaporation could be used to increase precipitation and reduce the volume of water that needs to be treated.

UGC Study No. 6: ***Technologies to Address Leachate from the On-Site Disposal Facility at Fernald Environmental Management Project, Ohio***

Date of Study: August 6-7, 2002 First Draft out: August 7, 2002

EM-50 Technical Lead: Carol Eddy-Dilek EM-50 Participants: 9

Results and Recommendations: There were four recommendations by the TA Team::

1) The site should consider recirculation of the leachate, at least for the cells that have not yet been completed.
2) The site should also consider the possibility of using a flow-through gravity filtration system to treat the leachate.
3) The site should seriously consider amendments to the waste mass to improve stabilization of the uranium in the waste mass.
4) Whatever leachate treatment strategy is selected, the site should consider discharging all remaining effluent to constructed wetlands.

D & D Study No. 7: ***Independent Review of the Main Hill Project Estimates of Tritium inventories, Release Fractions, and the Overall D & D Approach for the Miamisburg Closure Project***

Date of Study: Sept. 30-Oct. 4, 2002 First Draft out: Oct.4, 2002

EM-50 Technical Lead: Jack Craig (DOE) EM-50 Participants: 9
Cliff Carpenter (DOE)

Results and Recommendations: The primary objective of the TA Team was to conduct independent reviews of the following items and then recommend alternatives to accelerate the Closure schedule:

1) Tritium holdup-inventory estimates and projected release fractions in the PB2 Baseline.

2) PB2 Baseline modeling and associated safety margins.
3) PB2 Baseline plans for using the various Tritium recovery systems available such as TERF.
4) Contributions of Tritium emissions to the site NESHAPS effluents in the PB2 Baseline.

The TA Team successfully conducted the requested independent reviews and reported the results. In addition, the following Alternative Proposals from the Value Management portion of the study were presented for management consideration in accelerating the Closure Schedule:

1) Abandon the current "open-air" D & D and continue to use the available filtered stacks with near real-time computer monitored characterization to schedule and control work.
2) Reduce schedule risk by:
    a) Defer removal of the "old cave" until the slabs are taken up
    b) Eliminate all unnecessary "baking-off" of Tritium in R-108
    c) As soon as all Tritium is baked off, shut TERF down
3) Reassign the labor crews doing the above tasks to other work since labor is the limiting factor in accelerating schedule.
4) Improve the input into the emissions modeling and use the resulting information more effectively.
5) Use MARSSIM in facility characterization work related to T Building
6) Use improved concrete characterization methods as is done at SRS
7) Adopt the Advanced Radiological Worker Training program developed at SRS

UGC Study No. 8: ***Recommendations to Address Uncertainties in Characterization and Delineation of Contamination at the Miamisburg Closure Project***

Date of Study: Oct. 28-31, 2002 First Draft out: Nov 14, 2002

EM-50 Technical Lead: Carol Eddy-Dilek EM-50 Participants: 11

Results and Recommendations: The TAT and site representatives identified a number of opportunities for continued involvement at the MCP. The TAT initially had a relatively broad scope with limited time. The commitment by DOE for technical assistance to the closure sites is to provide continuing support for a variety of activities. Examples of activities include additional technical assistance teams, assistance with deployment of new technologies, development of sampling and analysis plans, etc. The TAT identified several areas for additional assistance:

1) Development of a site-wide closure strategy for concrete and soils.
2) Development of cleanup values for fractured rock contamination.

3) Review and recommendations of soil amendments to be added during excavation to reduce mobility of residual contaminants.
4) Development of a sampling and excavation strategy for the area containing Buildings WD and HH.
5) Develop dose calculation information requirements for dose modeling for T Building to support free release.
6) Support evaluation of alternatives for the storm water and sanitary sewer lines including fate and transport evaluations associated with the potential for residual contaminants in sludge that is directed to land application.
7) Support the evaluation of the rebound test and monitored natural attenuation implementation post pump and treat/SVE treatment for VOCs.

D & D Study No. 9: ***Evaluation of Proposed Modular Waste Water Treatment Plant***

Date of Study: October 29-30, 2002 First Draft out: November 21, 2002

EM-50 Technical Lead: Dale Pfllug (ANL) EM-50 Participants: 5
Jack Craig (NETL)

Results and Recommendations: The following findings were presented to the site during the out briefing and are discussed further in the body of report.

1) The WWTP plays an important role in enabling the site to complete closure and should be managed carefully to allow for the capture, storage, treatment and release of wastewater.
2) An incomplete characterization exists for sources and volumes of wastewater that may be sent to the WWTP and should be addressed to assure reliable operation.
3) The current precipitation-based WWTP combined with flow augmentation is adequate to treat current and anticipated future wastewater needs.
4) No significant operations or economic advantages were identified for replacing the existing plant with the proposed modular design.
5) Issues that can adversely impact the operation of the WWTP such as adoption of a wastewater minimization strategy were recommended and are discussed in the report.

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Attachment C: 2003 Technical Support Requests by Site

Ashtabula Closure Project

ACP 03-03-3	TCE Plume Delineation with Off-site Mitigation Controls
ACP 03-01-3	Dig-Face Characterization during Soil Excavation
ACP 03-02-3	NaI-Tipped GeoProbe System
ACP 03-04-1	Soil/Slab/Walkover/Subsurface Data Integration
ACP 03-04-1	Concrete Characterization/Decontamination Integration
ACP 02-02-3	Pipe Explorer
ACP 02-03-3	Integrated Subsurface Characterization
ACP 02-04-3	GeoProbe Deployment
ACP 02-05-1	Concrete Decontamination

Columbus Closure Project

CCP 03-01	Independent Review of Loading and Unloading the RH-72B Cask
CCP 03-02	Independent Review of the JN-1 Radioactive Materials Inventories and Air Dispersion Modeling
CCP 02-04-1	Independent Review of the Removal of Radioactive Hot Cell Structures in Building JN-1
CCP 02-07-3	Surface Characterization for Free Release
CCP 02-03-1	Stabilization of Radioactive Surfaces for Commercial Building Destruction
CCP 02-08-3	Accelerated Filterbed Remediation Using WIDE

Fernald Closure Project

FCP 02-19-2	Vacuum Assisted Thermal Desorption Deployment Project
FCP 02-03-4	Key Components for Disposition of Fernald Silo Wastes
FCP 02-05-4	Risk Reduction and Schedule Acceleration for Fernald Silos 1 and 2 Waste Treatment Container Transfer Cars, Fill Station, and Lid Closure Systems
FCP 02-32-4	Silo 3 Waste Removal System – Pneumatic Excavation and Mechanical Excavation and Waste Packaging
FCP 02-04-4	Expedited Disposition of Silo Waste by Shielded Railcar
FCP 02-02-2	Optimal Disposition of Fernald Unique Wastes
FCP 02-27-2	Waste Pits Remedial Action Project (WPRAP) Pit 5 Material Dewatering Project
FCP 02-15	Optimize Optimal Uranium Removal From Ion Exchange Regeneration Solution
FCP 02-X-5	Technologies to Address Leachate from the On-site Disposal facility at the FEMP

FCP 02-01-5	Initiative on Post Closure Stewardship Technology
FCP 02-09-2	Accelerated Disposition of Non-actinide Isotopes and Sealed Sources
FCP 02-10-2	Acceleration of Fernald Sample Disposition

MIAMISBURG CLOSURE PROJECT

MCP 03-05-3	Technical Assistance with Bedrock Groundwater Issues
MCP 03-04-1	Fogger Adapter for JLG (SW/R D&D)
MCP 03-06-3	Technical Assistance with OU1 Pump and Treat Groundwater Rebound Test
MCP 03-13-1	Acquisition of a Standard for Stable Tritiated Particulates
MCP 03-03-5	Aerial Imaging of Site in Support of LTS Initiative
MCP 03-01-5	Video Surveillance Capabilities for Site's LTS Initiative
MCP 03-02-5	Data Management Tools to Support LTS Initiative
MEMP 02-03-3	Real-Time Pu238 Characterization
MEMP 02-16-1	Develop T-Building Verification Program Incorporating MARSSIM
*MCP 03-07-3	Development of Technically Robust Leaching Models for Soils
*MCP 03-08-3	Development of Cleanup Values for Fractured Rock Contamination for Embedded Contamination Issues
*MCP 03-09-3	Characterize Storm Sewer Lines Using a Graded Approach
*MCP 03-10-3	Development of a Sampling Strategy for the WD/HH Buildings Area
*MCP 03-11-3	Evaluation of Contaminant Fate and Transport in sludge for Land Application
*MCP 03-12-3	Subsurface Sampling Capabilities Using CPT and GeoProbe Technologies

NOTE: *DENOTES POTENTIAL REQUEST PENDING CONTRACTOR APPROVAL

MEMP 02-01-1	Mitigation of Fugitive Emissions During Building D&D
MEMP 02-04-3	Integrated Subsurface Characterization
MEMP 02-02-3	Characterization of Contaminated Piping inside, Between and Underneath Buildings
MEMP 02-07-5	Post Closure Stewardship Monitoring Technologies
MEMP 02-05-2	Management of Electronic Equipment from Radioactive Materials Management Areas
MEMP 02-15-2	AEA Fluidic Pump for Sumps

WEST VALLEY DEMONSTRATION PROJECT

WVDP 02-15-1	HOT CELL LSDDP AT WVDP
WVDP 02-04-1	Development of Grout for In Situ Closure
WVDP 02-06-1	High Level Waste Tank Closure
WVDP 02-14-1	Contact Size Reduction of Components
WVDP 02-08-1	Radioactivity Measurement of Residual Radioactive Waste