

The Role of the Technical Assistance Contractor at the Waste Isolation Pilot Plant – 10596

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ABSTRACT

The framework of contractors that has and will continue to provide invaluable support to the U.S. Department of Energy Carlsbad Field Office (DOE/CBFO) in making the Waste Isolation Pilot Plant (WIPP) a critical step toward solving the nation's nuclear waste disposal problem has changed over the years but, as CBFO Manager Dr. Dave Moody said at the recent WIPP 10th Anniversary Celebration, "many of the faces have remained the same." The contributions of the Carlsbad Field Office Technical Assistance Contractor (CTAC) to the WIPP, the world's first underground repository licensed to safely and permanently dispose of transuranic radioactive waste from the research and production of nuclear weapons, have helped to make the WIPP a huge DOE Environmental Management success!

CTAC assists DOE/CBFO with oversight and management of the WIPP by providing technical expertise in:

- **Safety and Operations Oversight**
- **Environmental and Regulatory Support**
- **Performance Demonstration Program**
- **Audits and Assessments**

CTAC is not the WIPP owner or responsible management and operating contractor, rather, CTAC provides independent technical experts that evaluate and confirm or refute information and ideas presented to CBFO. CTAC's contributions are many, and its future role should ultimately depend on its credibility with CBFO clients.

INTRODUCTION

In 1990, the DOE Albuquerque Office (DOE-AL) came to the realization that it needed technical assistance from experts not associated with Sandia National Laboratories (SNL), which was working on repository performance assurance, or the management and operation contractor (MOC) Westinghouse Waste Isolation Division (WID), now Washington TRU Solutions, LLC (WTS), to address issues being raised by groups such as:

- The Environmental Evaluation Group (EEG) for the Waste Isolation Pilot Plant
- The National Academy of Sciences (NAS)
- The Defense Nuclear Facilities Safety Board (DNFSB)
- The U.S. Environmental Protection Agency (EPA)
- The New Mexico Environment Department (NMED)
- Concerned citizens groups including Citizens Against Radioactive Dumping (CARD)

Initially, the DOE-AL identified an Albuquerque 8(a) certified Small Business Administration (SBA) technical assistance contractor supporting, but not fully utilized by, the DOE Chicago Field Office. This small group of individuals was initially located in the WIPP Site Support Building and worked closely with their DOE clients. As the staff grew larger, they became known as the WIPP Technical Assistance Contractor, or WTAC (pronounced “W” TAC), and eventually moved from the WIPP site to facilities in Carlsbad, NM. In these early years both the DOE WIPP Project Integration Office (WPIO) and DOE WIPP Project Site Office (WPSO) were involved on the project.

With enactment of the Waste Isolation Pilot Plant Land Withdrawal Act in October, 1992, Congress transferred jurisdiction of the 16-section federal land area from the Secretary of the Interior to the Secretary of Energy. In late 1993, the DOE Carlsbad Area Office (CAO) was created to directly link the WIPP with DOE Headquarters. At that time, some of the DOE-AL staff relocated to Carlsbad and set up offices at the WIPP site. The WTAC staff grew to approximately 80 individuals providing support in eight major task areas: program management, quality assurance, safety, environmental, regulatory and permitting, public affairs, the National TRU Program, and administrative assistance.

In 1995, after a competitive bid process overseen by the DOE-AL, the 8(a) contract was awarded by the DOE to a new contractor team, but after a protest, the award was split 51% to the protesting incumbent Advanced Sciences, Inc., and 49% to the contractor originally awarded the new contract. It was at this time that the contract became known as the Carlsbad Area Office Technical Assistance Contractor (CTAC, pronounced “C” TAC). During the five-year term of this contract, most of the CTAC staff moved from the WIPP site to private/leased offices in Carlsbad. While CTAC staff worked well together in support of the WIPP mission, the relationships between the contractor corporate entities making up CTAC were strained.

In 2000, the DOE-CAO was elevated to field office status, becoming the DOE Carlsbad Field Office (CBFO), which oversaw another competitive bid process whereby the 8(a) contract was awarded to a completely new team of contractors. The majority of existing staff were retained as the CBFO Technical Assistance Contractor, still called CTAC. The new CTAC contract reduced the number of support tasks from eight to five:

- Audits and Assessments
- Safety and Operations
- Environmental and Regulatory Compliance
- Performance Demonstration Program
- Policy and Development

One of the first orders of business of the new CTAC Senior Manager was to move operations from the downtown location into the Skeen-Whitlock Building at 4021 National Parks Highway, with the CBFO and the MOC (see Fig. 1).



Fig. 1. Skeen-Whitlock Building Sign (Note that unlike the listing for the MOC, the listing for CTAC does not give the specific name of the contractor(s) that support that role.)

There were several reasons for the move: it made the CTAC group more accessible to CBFO (the client); brought CTAC in closer proximity to the activities it was charged by CBFO to perform; and it meant that almost 100% of CTAC contract dollars were spent on human resources and therefore any mention of budget cuts meant loss of jobs, an idea largely unacceptable to the political leaders of a small town like Carlsbad.

As the number of tasks contracted to CTAC was reduced from eight to five, to the extent possible, all of the previous CTAC staffers were provided other opportunities at the WIPP, for example, CTAC staff supporting the CBFO Legal Counsel were given CTAC regulatory compliance opportunities, while others were offered employment with the MOC or with contractors supporting Los Alamos National Laboratory Carlsbad Operations, or the SNL Carlsbad Programs Group. Again, the framework of contractors that has and will continue to provide invaluable support to the CBFO in making the WIPP ... *a critical step toward solving the nation's nuclear waste disposal problem...* has changed over the years but, as CBFO Manager Dr. Dave Moody said at the WIPP 10th Anniversary Celebration, "many of the faces have remained the same." Within the first year of the contract, the number of CTAC tasks was reduced to four with the elimination of the Policy and Development task, and two years later, when the Safety and Operations Oversight manager left CTAC, the Environmental and Regulatory Support manager took over both tasks.

In 2005, the CTAC contract was again competitively bid, this time with the award process overseen by the DOE Environmental Management Consolidated Business Center (EMCBC) in Cincinnati, Ohio. The CTAC contract was again awarded to a new contractor, a woman-owned SBA-certified business. In an interview with *TRU TeamWorks*, the WIPP biweekly e-newsletter, the president of the winning company stated, "Our goal is to provide the incumbent personnel with the best offer we can to ensure maximum

retention of the incumbent personnel.” Because the scope of the CTAC contract remained essentially unchanged, the incumbent management personnel were all retained along with technical and support staff, something almost unheard of in contractor transitioning. Also, although Task 3 – Safety and Operations Oversight, and Task 4 – Environmental and Regulatory Program support, were required to be proposed with separate task managers, CBFO allowed the incumbent manager to continue to manage both tasks.

Since 1990, WTAC and later CTAC contractor staffs have played a significant role in assisting the DOE-CBFO in attaining the ultimate success of the WIPP. The fact that “the faces have remained the same” over the years has afforded several obvious benefits to the WIPP project and some perhaps not so obvious. Those current WIPP participant employees, including CTAC, whose employment began with the WTAC have witnessed the evolution of the WIPP from its technical development through establishment of the WIPP Authorization Basis and Waste Acceptance Criteria requirements (such as the EPA certification, NMED Hazardous Waste Permit, Nuclear Regulatory Commission (NRC) transportation, CBFO Orders, WIPP LWA Defense waste determination) into a fully operational transuranic (TRU) waste repository. During the course of this evolution, they have gained the WIPP-specific technical, regulatory, quality assurance, safety and operational experience necessary for the safe and efficient disposal of contact-handled (CH) and remote-handled (RH) TRU waste shipments at the WIPP. The inherent value of retaining staff with that kind of experience and historical knowledge is not only their expertise in the requirements and how they must be met, but their knowledge of the bases for the requirements. A not so obvious benefit becomes hugely apparent when operational efficiencies or other factors arise that require modifications to facilities or processes. And clearly, any and all familiarity and respect gained over the years with stakeholders and regulators is of benefit to CBFO.

It is worth restating that CTAC is not the owner or operator of the WIPP, but was created to provide an independent technical assistance contractor staffed by technical experts that could evaluate and confirm or refute information and ideas presented to CBFO by others, such as contractors, regulators, and the public. The remainder of this paper documents many of the WIPP accomplishments that WTAC/CTAC has supported since its inception, and looks to the future role of CTAC associated with the WIPP.

SAFETY AND OPERATIONS OVERSIGHT

The CBFO Safety Oversight program provides comprehensive oversight to assure safe and compliant operations at the WIPP and for operations conducted by CBFO contractors (WIPP participants). WIPP operations fall into three primary areas: disposal operations, facility projects, and disposal support activities. Disposal operations include underground panel mining; CH and RH TRU waste receipt, handling, and disposal; CH and RH waste disposal system/process modifications; and panel closure. Facility projects are activities necessary for design and construction of WIPP facilities including alterations, modifications, and major restorations of plant facilities, utilities, systems, pavements, grounds, and support equipment necessary for facility operations. Disposal support activities include safety, health, and authorization basis programs, hoisting, facility maintenance, security, and emergency management.

CTAC staff have extensive knowledge in nuclear facility operations and maintenance, radiological controls, nuclear safety, waste management, emergency preparedness, integrated safety management, mining, mechanical systems, electrical, and control systems, Occupational Safety and Health Administration requirements, Mine Safety and Health Administration requirements, NRC requirements, and DOE Orders and regulations pertaining to conduct of operations.

CTAC has contributed to many significant accomplishments over the years, with the most recent on December 29, 2009, when Dr. Dave Moody, CBFO Manager, was delegated Approval Authority from

Mr. Dae Chung, DOE EM-2, for 10 CFR 830 Subpart B – Safety Basis Requirements. Assisting the

CBFO Authorization Basis Senior Technical Advisor (ABSTA) in obtaining this authority had been a stated goal for the CTAC Safety and Operations Oversight support group since award of the contract in 2005.

Other long-term CTAC Safety and Operations Oversight staff efforts that resulted in significant accomplishments for the MOC and CBFO were the following activities, associated with the integration and upgrade of the WIPP Safety Basis:

- Nationally recognized CTAC safety basis experts were specifically selected and placed in the project organizations to assist the DOE Office of Environmental Management (EM) and the CBFO ABSTA in the development of DOE-STD-5506-2007, *Preparation of Safety Basis Documents for Transuranic (TRU) Waste Facilities*, which provided supplemental guidance to DOE-STD-3009-94, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analyses*, so as to standardize Documented Safety Analyses (DSAs) and Technical Safety Requirements (TSRs) across the DOE-EM complex related to the management of TRU waste.
- CTAC assisted CBFO and the EM Approval Authority in review and approval of the MOC's integration of the WIPP CH and RH TRU waste DSAs and TSRs and simultaneous upgrade to comply with DOE-STD-5506-2007 and DOE-STD-3009-94, as well as the conduct of and authorship of the Safety Evaluation Report of the Waste Isolation Pilot Plant for Page Change 001 for DOE WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis*, Revision 1, and DOE WIPP-07-3373, *Waste Isolation Pilot Plant Technical Safety Requirement*, Revision 1.
- CTAC assisted CBFO in the planning and execution of the Carlsbad Field Office Management Assessment (MA-09-09) to ensure activities necessary to properly implement the requirements of 10 CFR 830, Nuclear Safety Management, Subpart B, Safety Basis Requirements, DOE Standard 3009, and augmenting DOE Standard 5506, and to ensure DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis*, Revision 0, and DOE/WIPP-07-3373, *Waste Isolation Pilot Plant Technical Safety Requirements*, Revision 0, were completed and tested for effectiveness prior to declaring the safety basis implemented.
- CTAC prepared the WIPP Safety Basis Training text and presented the training course to CBFO staff, for whom attendance was deemed mandatory by CBFO management.
- CTAC coauthored a paper with the MOC and CBFO for the Waste Management Conference 2009 (WM09) entitled *Lessons-Learned When Integrating Remote Handled (RH) and Contact Handled (CH) Transuranic Waste into a Comprehensive Documented Safety Analysis (DSA) and Technical Safety Requirement (TSR)*. The paper described the entire arduous integration process.

Additional significant CTAC Safety and Operations Oversight Support accomplishments are summarized in Table I.

Table I. CTAC Safety and Operations Oversight Support, Federal Fiscal Year (FFY) 2006 – 2008 Major Accomplishments

FFY	Major Accomplishments
2006	<p>Finalized and transmitted to CBFO the annual Integrated Safety Management System Report.</p> <p>Completed 15 MOC Line Management Assessment (LMA) RH-TRU affidavits in preparation for the DOE/CBFO RH Operational Readiness Review (ORR).</p> <p>In support of the National TRU Program, supported the TRU Work-Off Team trip to Oak Ridge, TN, to evaluate Bechtel Jacobs company safety basis constraints for segregating TRU wastes from low-level wastes.</p>
2007	<p>A nationally recognized CTAC Industrial Hygienist participated as the only non-DOE expert in the DOE Headquarters ORR for RH waste handling at the WIPP.</p> <p>Verified completion of closure of the WIPP ORR RH waste handling post-start findings.</p> <p>Prepared a paper on the DOE-STD-5506-2007, <i>Preparation of Safety Basis Documents for Transuranic (TRU) Waste Facilities Nationally</i>, by the nationally recognized CTAC safety basis experts to support the WM07.</p>
2008	<p>Conducted reviews and provided comments/assistance related to:</p> <ul style="list-style-type: none"> ➤ Updated and newly developed DSAs supporting documents including the nuclear criticality safety evaluations (NCSEs), fire hazards analysis (FHA), MACCS2 application documents (dispersion modeling), fire models, analyzed events (hazards analysis (HA) and accident analysis (AA)), DSA Safety Management Program (SMP) chapters and TSRs ➤ Reviewed and provided comments/assistance related to multiple safety evaluation reports (SERs) for CBFO including the fire water supply system and fire suppression system-related justifications for continued operation (JCOs) with specific compensatory interim controls, and annual page changes to the CH DSA and TSRs (Revision 10) and RH DSAs and TSRs (Revision 0) ➤ CBFO Qualification Standards, Study Guides, and Examinations for CBFO Facility Representative (FR) and Safety Systems Oversight (SSO) candidates ➤ A path forward on the transition from a Standards Requirements Information Document (S/RID) system to a simplified set of Work Smart Standards and Contractor Requirements Documents <p>Assisted with the performance/attendance of the following:</p> <ul style="list-style-type: none"> ➤ Life Safety Code walk-downs of all WIPP surface and underground locations resulting in FHA issues requiring prioritization, resolution, and approval of proposed changes ➤ Project control and field construction of the WIPP site fire water supply and Waste Handling Building (WHB) CH Bay fire suppression system (FSS) repair, rework, and upgrades

AUDITS AND ASSESSMENTS SUPPORT

Key to the WIPP’s satisfactory demonstration of compliance with the myriad of requirements has been a comprehensive audit and assessment program directed by the CBFO. This audit and assessment program is staffed and administered by the CTAC and consists of a team of quality assurance (QA) personnel with unsurpassed experience in auditing to WIPP requirements, including:

- Performance of certification audits, surveillances, and assessments of TRU waste generating site activities for TRU waste characterization, certification, and transportation
- Oversight of WIPP site quality-related activities including but not limited to waste handling operations, WIPP site surface and underground operations, environmental monitoring activities, and the WIPP site QA program elements
- Oversight of national laboratory quality-related activities including but not limited to assessment of environmental and other laboratory activities and operations, and assessment of national laboratory support of WIPP performance assessment modeling and data collection
- Oversight of TRU waste transportation activities, including but not limited to assessments of transportation carriers and assessment and inspection of fabrication, operation, and maintenance of NRC-licensed nuclear shipping packages and related fleet equipment
- Oversight of CBFO internal quality-related activities

The QA requirements applicable to the WIPP are defined in the *CBFO Quality Assurance Program Document (QAPD)*, first issued in June 1994. The requirements of the CBFO QAPD apply to all “WIPP participants.” The CBFO and CTAC QA Programs are based on American Society of Mechanical Engineers (ASME) NQA-1-1989, ASME NQA-2-1990, Part 2.7, and ASME NQA-3-1989. Compliance to these standards is required by the WIPP Land Withdrawal Act, 40 CFR Parts 191 and 194, and by the WIPP Hazardous Waste Facility Permit (HWFP) issued by the NMED.

As of November 2009, the 10-year anniversary of the effective date of the HWFP, CBFO, with the assistance of CTAC, had performed 186 audits and 99 surveillances (see Table II).

Table II. Generator/Storage Site Audits Since 1999

Site	Years	Audits	Surveillances
Argonne National Laboratory (ANL)	2001-05	4	2
ANL / Central Characterization Project (CCP)	2004-09	6	0
Battelle Columbus Laboratory	1999-2005	2	1
General Electric Vallecitos Nuclear Center/CCP	2008	1	0
Hanford Site	1999-2009	17	11
Hanford Site/CCP	2003-09	4	2
Analytical Laboratories at Idaho National Engineering (INL) and Environmental Laboratory	2005-06	3	1
Analytical Laboratories at INL/CCP	2009	0	1
INL Advanced Mixed Waste Treatment Project (AMWTP)	2003-09	16	9
Idaho National Engineering and Environmental Laboratory (INEEL)	1999-2005	13	15
INL/CCP	2005-09	16	16
LANL	1998-2008	21	12
LANL/CCP	2004-09	9	1

Site	Years	Audits	Surveillances
Lawrence Livermore National Laboratory (LLNL)	1999	0	1
LLNL/CCP	2004-05	1	1
Nevada Test Site (NTS)	1998-99	2	0
NTS CCP	2002-05	8	2
Oak Ridge National Laboratory (ORNL)	2006	2	0
ORNL/CCP	2007-09	6	0
Rocky Flats Environmental Technology Site	1998-2005	25	10
Savannah River Site (SRS)	2000-09	8	4
SRS/CCP	2003-09	13	5
Washington TRU Solutions/CCP	2001-09	9	5
Number of sites = 23		186	99
Total			285

The scope of these audits and surveillances are not always the same, for example, there are initial Permit certification audits where the audit may not include all waste summary category groups (i.e., S3000 homogeneous solids, S4000 soils/gravel, and/or S5000 debris waste). If, for example, debris waste is not being analyzed by the site, then headspace gas sampling and analysis is not used and would not be part of the audit. If the facility were to add debris waste in the future, an initial certification audit for that waste summary category and corresponding equipment would be required. Similarly, not all recertification audits, transportation surveillances, QA audits, EPA audits or inspections need to be the same in terms of CH or RH waste streams for any given site.

Additional examples of major CTAC Audits and Assessments accomplishments and activities performed on an annual basis include:

- Performance of 55 to 70 assessments (approximately 25 to 30 QA audits, 25 to 30 QA surveillances, and 5 to 10 observations of EPA inspections).
- Regulator interfacing, e.g., preparation/testimony in the WIPP HWFP RH/311 Hearings, assisting in obtaining approval of INL/CCP to ship RH waste to the WIPP, obtaining approval of General Electric Vallecitos Nuclear Center (GEVNC)/CCP and ORNL/CCP to ship RH waste, participation in negotiations with the NMED to obtain approval of the Acceptable Knowledge Sufficiency Determinations that allowed LANL/CCP to ship 16 canisters of RH waste to the WIPP and authorized shipment of RH waste from the SRS.
- Changes/improvements to the CBFO QA program processes:
 - Revisions to certification audit processes to improve performance efficiency and lower cost, including transition to one QA audit of CCP per year
 - Recombined QA/EPA and HWFP-related audits to reduce impact on the TRU waste generator/storage sites
 - Revised CBFO QA program documents to respond to regulator, DOE/HQ, and internal needs including implementation of the RH/311 HWFP modification (i.e., QAPD and CBFO management procedures)
- Maintain routine QA organization functions including waste generating site document reviews, review of draft CBFO and DOE/HQ documents, and corrective action report (CAR) issuance, response evaluation, and corrective action verification.

ENVIRONMENTAL AND REGULATORY PROGRAM

CTAC provides technical and regulatory support to the CBFO Office of Regulatory Compliance, including reviews, analyses, recommendations, and evaluations. CTAC staff and subcontractors providing this support have a comprehensive knowledge of RCRA regulations, the HWFP, management and disposal standards for TRU waste (40 CFR Parts 191 and 194), the EPA's terms and conditions of WIPP Certification, and a sufficient knowledge of the WIPP authorization basis to identify how changes to the Permit and the EPA's terms and conditions of WIPP Certification might impact the WIPP authorization basis.

Significant CBFO accomplishments and/or on-going projects on which CTAC Environmental and Regulatory Program technical and regulatory experts have assisted include:

- The WIPP HWFP:
 - The WIPP HWFP (10-year) Renewal Application – assisted the Permittees (CBFO and the WIPP MOC) in the determination of the Renewal Application format, scope, content, and schedule. The Renewal Application was originally submitted to NMED on May, 28, 2009, and after a series of meetings with stakeholders and the NMED, was revised and resubmitted in September 2009.
 - WIPP HWFP permit modification requests (PMRs), the most significant of which include:
 - Class 3 PMR for “Section 311/RH waste receipt, storage and disposal at WIPP,” on which CTAC staff have provided expertise from the time of the earliest record of communication between DOE/CAO and NMED on May 12, 2000, through the October 16, 2006, NMED Secretary Ron Curry and New Mexico Governor Bill Richardson signing of the Secretary's Final Order Approving the Permit. CTAC staff participated in the drafting and submission of various PMRs, responses to Notices of Deficiency (NODs), comments on the Draft Permit, preparing and providing expert testimony in the Public Hearings (as previously described under the Audits and Assessments section), subsequent negotiations, issuance, ultimate implementation, and continued refinement.
 - Class 3 PMR that a No Further Action (NFA) Determination is appropriate related to investigation of 15 Solid Waste Management Units (SWMUs) and eight Areas of Concern (AOCs) at the WIPP – submitted September 4, 2007, and granted/approved on October 23, 2008.
 - Class 3 PMR to allow the construction of Panels 5, 6, 7, and 8, and to allow the use of Panels 4, 5, 6, and 7 for disposal of TRU waste during the remainder of the current term of the WIPP HWFP.
 - Multiple Class 2 PMRs including Waste Analysis Plan Clarification of Language Regarding Liquid, Visual Examination, and Nonconformances; Electronic Operating Record; Hydrogen/Methane Monitoring; Groundwater Notice of Violations Issues; Revise Training requirements for waste confirmation, preventative maintenance procedure frequencies, Incident Level II requirements, Emergency Operations Center staff requirements and the Contingency Plan; Procedure for Consideration of Tank Waste; Drum Age Criteria for New Approved Waste Containers and Allow the Use of Either Track or Non-Track Mounted Conveyance Cars; and LANL Sealed Sources.

- The WIPP Compliance Certification, Compliance Recertification Application – 2004 (CRA-2004), and CRA-2009:
 - Notifications of planned changes submitted to EPA associated with most of the Class 3 and Class 2 PMRs described above, the most important of which were the RH TRU Waste Characterization Plan and the RH TRU Waste Characterization Program Implementation Plan (WCPIP), the most recent of which are related to shielded containers and magnesium oxide.
 - Peer Reviews required in accordance with 40 CFR 194.27 to verify the findings of important and complex technical activities that impact WIPP performance assessment (e.g., WIPP Culebra Hydrology Conceptual Model Peer Review), and to qualify data that were not obtained under the requirements of an approved Quality Assurance Program Plan (e.g., LANL Remote Handled Waste Visual Examination (VE) Data Verification Peer Review). Peer reviews are conducted in accordance with CBFO Management Procedure (MP) 10.5, *Peer Review*, which was developed in accordance with and implements the guidance in NUREG-1297, Peer Review for High-Level Nuclear Waste Repositories.
 - A wide range of extremely complex projects in the areas of repository performance assessment, experimental programs, and actinide chemistry.
- The Conditions of Approval for Disposal of PCB Contaminated TRU and PCB/TRU Mixed Waste – played a crucial role in the development of the request that led to the WIPP being granted Toxic Substances Control Act (TSCA) Authorization. Assisted the CBFO Assistant Manager in presentations on the request and specific issues to EPA Region 6 in Dallas, TX, and DOE Headquarters in Washington, D.C. Also played a crucial support role to the CBFO Assistant Manager in obtaining the April 22, 2003, favorable determination from the Office of General Counsel and the EPA Federal Facilities Enforcement Office that DOE is not subject to the exception reporting requirements of 40 CFR Section 761.215(c), (d), and (e).
- Discharge Permit (DP-831) – assisted CBFO in modifications (December 2003 and December 2006) and renewal (September 9, 2008) whereby CBFO is permitted to discharge domestic effluent and nonhazardous industrial wastewater to the waste water treatment facility; discharge brine, purge waters and miscellaneous nonhazardous waste waters to various ponds; collect storm water runoff from the active and inactive salt piles; and collect mined salt. Under the permit, CBFO is required to perform a shallow subsurface water monitoring program.
- Other types of support include reviews of site monitoring reports such as the Annual Site Environmental Reports (ASERs), Bi-Annual Environmental Compliance Monitoring Reports (BECRs), Semi-Annual VOC Data, Semi-Annual Discharge Monitoring, Monthly Groundwater Level Measurements, Semi-Annual Groundwater, and DP-831 Piezometers Reports; expert support and review of the WIPP Integrated Hydrology Program for the shallow and deep groundwater programs; support to audits and surveillances of WIPP participants; CBFO or CTAC management assessments; assisting CBFO with delivery of the final revised Environmental Baseline Study (EBS) Report for the transfer of the WIPP water line to the City of Carlsbad.

PERFORMANCE DEMONSTRATION PROGRAM

The CTAC Performance Demonstration Program (PDP) is a unique and independent evaluation of specific capabilities of the various DOE sites that ship TRU waste to the WIPP to quantify concentrations of regulated volatile organic compounds in headspace gas (HSG); volatile and semi-volatile organic compounds and metals in solid waste matrices, and the capability of site nondestructive assay (NDA) systems to detect and quantify radionuclides. Site NDA systems, HSG systems, or laboratories doing

hazardous waste analysis are required to participate in the PDP in order to certify the applicable measurement data for waste being disposed of at the WIPP.

The CTAC manages the PDP for the DOE. Activities consist primarily of scheduling the PDP cycles, managing the sample preparation and shipment of samples, and scoring the data once the samples have been analyzed. The PDP is a quality-affecting activity and CTAC maintains a QA program that complies with the requirements of the CBFO QAPD. As appropriate, specific activities that have been consistently completed annually for the drum and box NDA, RCRA solid waste analysis, and HSG PDP cycles include scheduling and implementation of required primary and supplemental cycles; scoring, publishing, and distribution of the scoring reports; providing technical assistance to evaluate and close out corrective actions whenever a system failed a PDP, maintenance of the equipment (e.g., SUMMA[®] canisters, drums, boxes and sources); providing shipping support for NDA sources and other equipment; submittal of QA records including providing annual reviews and updated documentation; performance of a management assessments of the program; and a triennial audit of all suppliers for the program and an independent audit of the program itself.

CTAC PROGRAM MANAGEMENT SUPPORT

Highlights of program management support to the CBFO include the transfer of completed CBFO contract files to the WIPP Records Center, completed Records Identification and Disposition Schedules (RIDS) for all CBFO departments, complete scanning of all CBFO audits, surveillances, and corrective action report (CAR) records into the records database, conversion of EPA documents pertaining to site certification into electronic format, coordination of the 2009 New Mexico Mine Safety and Health Conference, and the reliable and consistent technical editing of CBFO and CTAC documents.

THE FUTURE OF CTAC IN SUPPORT OF THE CBFO

As it was in the early 1990's, the future of CTAC will be determined by the DOE, in particular the CBFO. Not surprisingly, the authors of this paper believe the contributions of the various CTAC contractors and their associated staff who have served the WIPP project are undeniable. CTAC was created to provide independent evaluation, verification, and validation of other WIPP Participant actions or ideas, and, when appropriate, to challenge them, and it has done so with integrity. Because CTAC is not the DOE (the owner of the WIPP), and is not the MOC (the contactor responsible for maintenance and operation of the WIPP), its success stands solely on the demonstration of its expertise and its credibility with regulators, the NMED, EPA, the NRC, and stakeholders. CTAC staff members are justifiably proud of their past contributions and their commitment to the success of the WIPP project, and look forward to meeting whatever challenges the future may hold, including but by no means limited to:

- Obtaining NMED and EPA approvals to manage, store, and dispose shielded containers in which RH TRU mixed waste is shielded in lead-lined 55-gallon containers that can be contact handled
- Obtaining NMED and EPA approval of a modification to the final panel closures
- Evaluating repository design options for disposal configurations in Panels 8, 9, and 10
- Ultimate closure of the current WIPP shafts