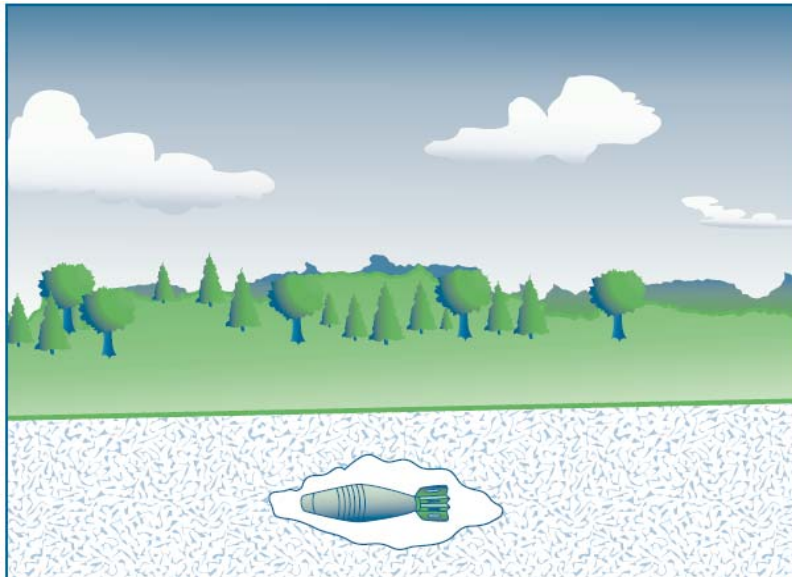


## **Project Implementation Report**

# **Quality Considerations for Munitions Response Projects (UXO-5)**



**December 2010**

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## 1. INTRODUCTION

This Project Implementation Report summarizes the actions taken by the Interstate Technology & Regulatory Council (ITRC) Unexploded Ordnance (UXO) Team to ensure that its technical/regulatory guidance document, *Quality Considerations for Munitions Response Projects (UXO-5)*, reaches its target audience. Specifically, this Report provides a summary of:

- Guidance document contents,
- Marketing strategy/opportunities, and
- How the strategy was implemented.

Its appendices include:

- Profiles of conferences/symposia where UXO-5 was promoted,
- Summaries of the “reach” of the companion internet-based training (IBT),
- Highlights of IBT feedback, and
- Statistics on document distribution and Website use.

The contributing authors of UXO-5 are members of the UXO Team, which consist of state regulators, stakeholders, and subject matter experts (SMEs) from industry and the federal government.

*Quality Considerations for Munitions Response Projects (UXO-5)* is the penultimate release in a sequence of documents produced by the UXO Team. Other documents produced by the team are:

- *Breaking Barriers to the Use of Innovative Technologies: State Regulatory Role in Unexploded Ordnance Detection and Characterization Technology Selection* (December 2000) UXO-1;
- *Munitions Response Historical Records Review* (November 2003) UXO-2;
- *Geophysical Prove-Outs for Munitions Response Projects* (November 2004) UXO-3;
- *Survey of Munitions Response Technologies* (June 2006) UXO-4 (with ESTCP and SERDP); and
- *Frequently Asked Questions about Wide Area Assessment for Munitions Response Projects* (May 2010) UXO-6 (with ESTCP and SERDP)

## 2. TECHNICAL/REGULATORY GUIDELINE SUMMARY

In UXO-5, the ITRC UXO Team provides guidance to environmental regulators on how to define quality, how to systematically plan for and achieve quality results, and how to apply these concepts to processes common to a munitions response (MR) project. The document also provides real-world examples to illustrate how the proper or improper application of the quality concepts presented in UXO-5 affect the “quality” of MR projects. UXO-5 addresses the detection, removal, treatment, and disposal of UXO and discarded military munitions (DMM).

In UXO-5, quality is defined as “conformance to requirements.” To manage quality, the quality requirements of the project must first be understood. Requirements must be precisely stated and clearly understood by everyone involved. A plan is then put in place to meet those requirements.

The UXO Team emphasizes taking a whole-system approach to designing and managing an MR project to optimize quality. Whole-system design means optimizing not just parts, but the entire system (in this case the MR). Practically speaking, the UXO Team views MR as a system made of processes, subprocesses, and tasks. Therefore, a process approach to planning and managing MR projects is recommended.

An MR plan properly developed using the process approach will contain quality control (QC) and quality assurance (QA) activities that need to be performed. QC activities are focused on the deliverable itself. QA activities are focused on the process used to create the deliverable. QA and QC are both powerful techniques, and both must be performed to ensure that the deliverables meet the customer's quality requirements.

Through the proper application of a process approach to plan and manage an MR project, the MR project should produce results of verifiable quality with sufficient QA and QC documentation for defensible decision making.

The quality concepts presented in UXO-5 are intended to be applicable to all U.S. Department of Defense (DOD) component programs (U.S. Army, U.S. Navy, etc.) and federal and state regulatory agencies. UXO-5 follows requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP), including the CERCLA response process. Though UXO-5 discusses certain aspects of quality systems and quality management plans, it also assumes a level of familiarity with basic quality concepts and a rudimentary understanding of Munitions Response.

UXO-5 is also consistent with guidance provided in *Uniform Federal Policy for Quality Assurance Project Plans* (UFP-QAPP, EPA/DOD/DOE 2005a, b, c). The UFP-QAPP is the product of an extensive collaborative effort by management- and working-level U.S. Environmental Protection Agency (EPA), DOD, and U.S. Department of Energy (DOE) personnel. It was created to address the real and perceived inconsistencies and deficiencies in data quality that result in greater costs, time delays, and the potential for response actions that result in unaddressed risk. DOD has requested that all DOD components implement the UFP-QAPP for all DOD environmental projects, including MR. Therefore, state regulators are encouraged to become familiar with the requirements of these documents and understand how they can impact their MR projects.

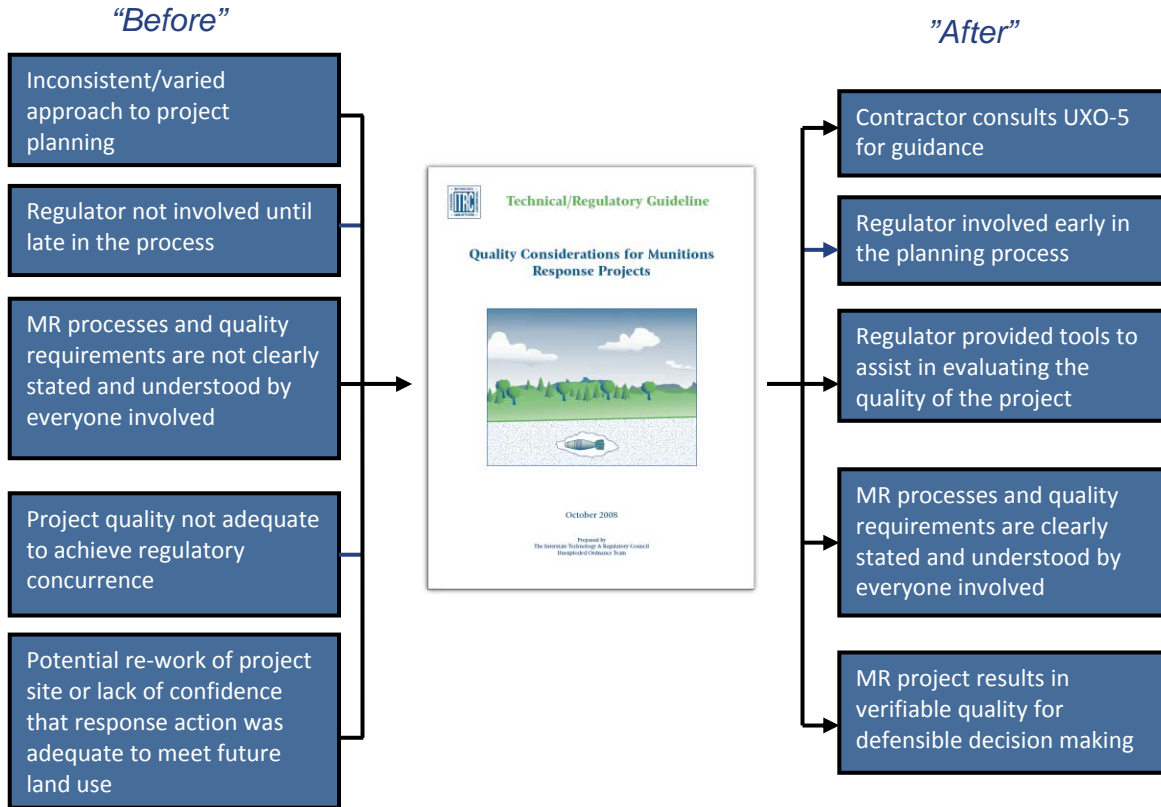
### 3. MARKET OPPORTUNITY AND CUSTOMER CONTEXT

The UXO Team met for its Project Closure Meeting in October 2008. At that meeting, the UXO Team collaborated with state POCs to identify market opportunities for UXO-5 and its companion IBT. A summary of the UXO-5 products' expected customer groups, as compiled by the UXO Team at its Project Closure Meeting, is provided in Table 1-1 below. Figure 1-1 provides a hypothetical case study of results of implementation of the procedures described in UXO-5.

In addition to expected user groups, the UXO Team also collected contact information for potential individual and organization users of UXO-5. These constituents were targeted specifically for the IBT opportunities offered by the UXO Team.

**Table 1-1.** Anticipated Technical/Regulatory Impact by User Group

Expected User Group	Intended Use	Benefit to be Received by Others
State and Federal Regulators	Tool to help evaluate MR work plans and final project documentation	Expedited regulatory review and greater confidence in finished product. Approach is consistent with UFP-QAPP
DoD Component Services	Consistent approach to quality across projects	Cost savings, regulatory approval, and greater confidence in finished product
Stakeholders	Inform them of quality procedures	Build confidence that consistent QA/QC procedures are applied
Contractors	Consistent approach for developing planning document	Expedited regulatory review and approval



**Figure 1-1.** Hypothetical Case Study of Technical/Regulatory Guideline Use

### 3.1 Marketing Guidelines

To promote and assess product use, the UXO Team took the following actions:

- Tracked document distribution (i.e., website download activity and shipment) to evaluate success and communication efforts.
- Targeted and attended meetings and conferences and registered for poster sessions and talks at pertinent conferences based on participant feedback from Implementation Session (e.g., UXO Forum, SERDP/ESTCP Symposium, etc.)
- Leveraged Team Webpage
- Targeted potential receivers of IBT based on participant feedback from Project Closure Meeting

### 3.2 Marketing Materials

To ensure successful marketing, the UXO Team developed an outreach/communications package to empower members to conduct technology transfer activities autonomously. The package contains :

- Adaptable PowerPoint briefing modules
- Fact sheet and Information Sheets
- Conference Poster
- Public Team Webpage

Samples of these are provided as Appendix F to this Report.

### 3.3 Key Contacts (see Appendix E for full list)

Key contacts for the Implementation Phase include:

- Bill Harmon, Michigan Dept. of Environmental Quality
- Guy Warren, Alaska Dept. of Environmental Conservation

## 4. SUMMARY OF OUTCOMES

During Implementation Phase I and II, the UXO team conducted ongoing tracking of its product distribution and reach. This includes all components of the product's implementation work including document distribution, outreach, and internet-based training.

The successes of these various components are detailed in Appendices B-D, and are summarized in this section.

### 4.1 Document Distribution/Website Activity

As of the release of this Report, all print copies of the initial press run of UXO-5 (**500** copies) have been distributed. **470** CDs have been distributed via the Team's website and at conferences.

In addition to physical distribution, the UXO Team tracked traffic on its website. Since the October, 2008 online debut of UXO-5, the website has recorded **2,276** downloads of the document (as of the release of this Report). The UXO Team public website itself has received **3,045** visits since the release of UXO-5.

### 4.2 Conference/Symposium Presence

Since the beginning of Implementation Phase I of the UXO-5 project, representatives of the UXO Team have targeted and attended **15** conferences and symposia. Events were identified by state POCs, federal partners, and members of the industry at the team's Implementation Session, evaluated for relevance, and selected based on value to the UXO Team and ITRC.

Whenever possible, the UXO Team has taken a more active outreach role rather than staffing the UXO Team poster or ITRC Exhibit as appropriate. UXO Team members directly reached out to an additional **919** individuals through formal talks and briefings at the below events.

The conferences/symposia attended are as follows:

1. National Association of OEW Contractors (NAOC) Conference 2008
2. U.S. Army Corps of Engineers (USACE) Annual OE Stand-Down 2008
3. Alaska Forum on the Environment 2009
4. Association of State and Territorial Solid Waste Management Officials (ASTSWMO) Meeting 2009
5. Native American Lands Environmental Mitigation Program (NALEMP) Annual Meeting 2009
6. USACE SAD Environmental Council 2009
7. Joint Air Force/Army Environmental Restoration Summit 2009
8. Environmental Managers Executive Committee-Navy, July 21, 2009
9. UXO Forum 2009
10. SERDP/ESTCP Symposium 2009
11. ASTSWMO Federal Facilities Managers Symposium 2010

12. National Association of Remediation Project Managers (NARPM) Annual Training Program 2010
13. Remediation Innovative Technology Seminar (RITS) 2010
14. SERDP/ESTCP Symposium 2010
15. M<sup>2</sup>S<sup>2</sup> (formerly Stand-Down) 2010

### 4.3 Internet-based Training Attendance

The companion internet-based training (IBT) to UXO-5 has received sustained high attendance and exceptional participant evaluations/feedback. In 10 offerings, one the dry-run and two “live” offerings, the IBT has reached a recorded **804** individuals. Actual attendance is likely higher as it is not uncommon for multiple individuals to participate on a single phone line or simulcast. In addition, analysis of the attendance shows that the IBT has reached individuals in **44** U.S. states and territories, as well as locations overseas. This is discussed further in Appendix C of this Report.

• November 19, 2008 (Dry-run)	<b>24</b>
• December 18, 2008 (Live IBT) <sup>1</sup>	<b>12</b>
• January 15, 2009	<b>190</b>
• July 14, 2009	<b>116</b>
• November 3, 2009	<b>105</b>
• January 28, 2010	<b>99</b>
• April 13, 2010	<b>61</b>
• July 27, 2010	<b>92</b>
• November 4, 2010	<b>72</b>
• December 8, 2010 (Live IBT) <sup>1</sup>	<b>33</b>

<sup>1</sup>“Live” offering of IBT at ACE Stand-down (also known as M<sup>2</sup>S<sup>2</sup>)

### 4.4 Summary and Conclusions

The following is copied from the UXO Team’s Technology/Methodology Status Report, developed in December, 2010.

#### 4.4.1 Status of the Methodology

Based on the feedback from several IBT and MR conference participants, the MR community and regulators involved with MR projects have overwhelmingly accepted the methodology described in this document and, moreover, have shown a willingness to use it on MR projects. The methodology is not new or emerging; however, implementation of the methodology is becoming standard practice or at least discussed by parties involved.

#### 4.4.2 Evolution of the Technology/Methodology

Issues regarding “quality” MR processes are common talk among regulators and the MR community. Users of this document are more apt to use quality tools such as UFP QAPP endorsed by UXO Team through this document. Development by DoD and EPA of a UFP QAPP specific to MEC is a direct outcome attributable to the widespread use of the methodology promoted in this documents.

#### *4.4.3 Condition of the Guidance*

The document is current with general principles of quality management and is applicable to DoD, EPA and MR contractor quality management plans. This document provides regulators with a basic understanding of quality principles and how they are applied to MR projects. The document assists regulators in understanding the need to define processes and quality requirements before a product is realized; and how to achieve and document quality results using basic process planning and control tools.

#### *4.4.4 Recommendation*

The UXO Team feels the guidance is still accurate. Therefore, no recommendation for update is provided.

## **APPENDIX A: KEY DEFINITIONS**

**Quality System:** a structured and documented management system describing policies, objectives, principles, organizational authority, responsibilities, accountability, and an implementation plan of an organization for ensuring quality in its work process and products.

**Quality Management Plan (QMP):** a formal document describing an organization’s quality system in terms of the organizational structure; policy and procedures; functional responsibilities of management and staff; lines of authority; and needed interfaces for those planning, implementing, documenting, and assessing all activities conducted.

**Quality Assurance (QA):** an integrated system of policies and procedures for planning, implementation, documentation, assessment, reporting, and quality improvement to ensure that a process, item, or activity is of the type and quality required for a process and products.

**Quality Control (QC):** the overall system of technical activities that measures the attributes and performance of a process, item, or activity against defined standards to verify that it meets the stated specifications. QC involves the action of testing, measuring, and evaluating the effectiveness of the program or activity. Examples include duplicate sampling, calibration checks, audits, reviews, assessments, peer reviews, and management oversight activities.

**Quality Assurance Project Plan (QAPP):** a formal document that describes, in comprehensive detail, the necessary QA/QC and other technical activities that must be implemented to ensure that the results of the work performed will satisfy predetermined performance requirements.

## APPENDIX B: TARGETED CONFERENCES AND SYMPOSIA

Since the document’s initial release in October, 2008, the UXO Team has presented the project and document at 15 conferences and symposia. The following tables summarize meetings and conferences that have been identified and attended as venues with high potential for product promotion.

### 1. NAOC Conference 2008

	<b>National Association of OEW Contractors (NAOC) Conference October 30, 2008</b>
Conference Details:	NAOC was established in 1995 as a non-profit organization. NAOC's objective is to act as a unified industry voice representing the issues facing its membership in the rapidly expanding business of military munitions response services. The association promotes the interests of its members and the public in the domain of Munitions and Explosives of Concern (MEC) related work, including safety, environmental protection, pollution prevention, land use, communications, standardization, technology development, quality, and public relations.
Membership on-site:	Guy Warren
Membership traveled:	No membership traveled.
Outcome Summary:	<ul style="list-style-type: none"> <li>• Provided PowerPoint presentation on ITRC UXO Team and UXO-5.</li> </ul>

### 2. USACE Annual OE Stand-Down 2008

	<b>U.S. Army Corps of Engineers (USACE) Annual OE Stand-Down 2008 Huntsville, AL December 17-18, 2008</b>
Conference Details:	Over the years, the interest in the exchange of information between Huntsville Center and other Corps agencies on OE subject matter has grown. The Stand Down now serves as a forum for the Corps and its DoD partners and customers to discuss project and programmatic issues that affect the execution of its OE work.
Membership on-site:	Jim Pastorick, Bill Veith
Membership traveled:	Guy Warren, Bill Harmon
Outcome Summary:	<ul style="list-style-type: none"> <li>• Provided <i>Quality</i> IBT presentation to 12 attendees</li> <li>• Distributed 10 paper copies of UXO-5.</li> <li>• Distributed 38 CDs of UXO-5.</li> </ul>

### 3. Alaska Forum on the Environment 2009

	<b>Alaska Forum on the Environment Anchorage, AK February 2-6, 2009</b>
Conference Details:	The Alaska Forum, Inc. was initially formed to support an annual education event, the Alaska Forum on the Environment, which celebrates its 11th year in 2009. This widely recognized event began in 1990 as the Alaska Federal Facility Environmental Roundtable; an annual conference focused on contaminants, hazardous waste cleanup, hazardous materials management, pollution prevention, etc. at federal facilities.
Membership on-site:	Guy Warren
Membership traveled:	No membership traveled.
Outcome Summary:	<ul style="list-style-type: none"> <li>• Provided PowerPoint presentation during two sessions.</li> <li>• Presentations were attended by approximately 35 people each.</li> <li>• The first was a general overview of the MMRP which included a 10-minute discussion of ITRC, the UXO team, and its documents and training.</li> <li>• The second session was focused on Quality Assurance on Adak and parts of the UXO-5 IBT were incorporated into the presentation. The ITRC website was provided as a resource for additional training.</li> </ul>

#### 4. ASTSWMO Munitions Training 2009

Conference Details:	<p><b>The Association of State and Territorial Solid Waste Management Officials (ASTSWMO) 2009 Meeting</b>  <b>San Antonio, TX</b>  <b>March 4-5, 2009</b></p> <p>Sponsored by ASTSWMO Federal Facilities State Federal Coordination Group, the purpose of this meeting is to provide a forum on major issues and elements associated with munitions response programs, to provide an opportunity to address procedural and policy areas demonstrated to be challenges at munitions response sites, to highlight and share program innovations and success stories, and to train State/Territorial regulatory staff on new policies and developments that affect State programs.</p>
Membership on-site:	Jim Pastorick, Ken Vogler
Membership traveled:	No membership traveled.
Outcome Summary:	<ul style="list-style-type: none"> <li>• Provided PowerPoint presentation about the use of UXO-5 to an audience of approximately 100.</li> <li>• Distributed 53 UXO-5 CDs and 18 fact sheets.</li> </ul>

#### 5. NALEMP Annual Meeting 2009

Conference Details:	<p><b>Native American Lands Environmental Mitigation Program (NALEMP) Annual Meeting</b>  <b>Anchorage, AK</b>  <b>April 30, 2009</b></p> <p>The U.S. Department of Defense (DoD) created the Native American Lands Environmental Mitigation Program (NALEMP) to address environmental impacts from former DoD activities on Indian lands and Alaska Native Claims Settlement Act-conveyed properties.</p>
Membership on-site:	Guy Warren
Membership traveled:	No membership traveled.
Outcome Summary:	<ul style="list-style-type: none"> <li>• Presented general MMRP overview and ITRC-specific PowerPoint briefing.</li> <li>• Discussed the purpose and mission of ITRC, Tech/Reg documents and internet-based training, opportunities for tribal participation in the individual teams, and a brief presentation about UXO-5.</li> <li>• Attended by 50-60 people.</li> <li>• Distributed 5 paper copies and 25 CDs of UXO-5.</li> </ul>

#### 6. USACE SAD Environmental Council 2009

Conference Details:	<p><b>U.S. Army Corps of Engineers (USACE) South Atlantic Division Environmental Council</b>  <b>Jacksonville, FL</b>  <b>June, 2009</b></p>
Membership on-site:	Anna Butler, Bill Veith
Membership traveled:	No membership traveled.
Outcome Summary:	<ul style="list-style-type: none"> <li>• Provided PowerPoint presentation including information on UXO-5 processes for MMRP.</li> <li>• Distributed 50 CDs of UXO-5.</li> </ul>

## 7. Joint Air Force Army Environmental Restoration Summit 2009

Conference Details:	<b>Joint Air Force Army Environmental Restoration Summit Santa Fe, NM May 19-21, 2009</b>
Membership on-site:	Bill Harmon, Anna Willet
Membership traveled:	No membership traveled
Outcome Summary:	<ul style="list-style-type: none"> <li>• Provided UXO-5 PowerPoint presentation to approximately 40 attendees</li> </ul>

## 8. Environmental Managers Executive Committee 2009

Conference Details:	<b>Environmental Managers Executive Committee San Francisco, CA July 21, 2009</b>
	Attendees included Navy management, EPA, and states from Region 10.
Membership on-site:	Guy Warren
Membership traveled:	No membership traveled.
Outcome Summary:	<ul style="list-style-type: none"> <li>• Presented PowerPoint briefing discussing UXO-5 to an audience of approximately 25 individuals.</li> </ul>

## 9. UXO Forum 2009

Conference Details:	<b>Unexploded Ordnance (UXO) Forum 2009 Orlando, FL August 24-27, 2009</b>
	Hosted by the Department of Defense Unexploded Ordnance (UXO) Center of Excellence – with support from other Federal organizations – the UXO/Countermining/Range Forum™ 2009 is the DoD's Preeminent Conference on Technology, Programs and Partnerships®.
Membership on-site:	Gavin Fielding, Anna Butler, Jim Pastorick, Tim Deignan, Michelle Caruso, Herb Nelson
Membership traveled:	Bill Harmon, Ken Vogler, Daniel Ruedy
Outcome Summary:	<ul style="list-style-type: none"> <li>• Presented UXO-5 PowerPoint briefing to an audience of approximately 40 individuals.</li> <li>• Presented PowerPoint briefing discussing UXO-5 and need for ITRC as a national level technical group to approximately 45 individuals.</li> <li>• Distributed 61 UXO-5 CDs, 41 GPO CDs, and 37 Survey CDs.</li> </ul>

## 10. SERDP/ESTCP Symposium 2009

Conference Details:	<b>Strategic Environmental Research and Development Program (SERDP)/Environmental Technology Certification Program (ESTCP) Partners in Environmental Technology Symposium 2009. Washington, D.C. December 1-3, 2009</b>
Membership on-site:	Jim Pastorick, Anna Butler, Daniel Ruedy
Membership traveled:	Bill Harmon, Guy Warren,
Outcome Summary:	<ul style="list-style-type: none"> <li>• Presented UXO-5 project poster during poster sessions.</li> <li>• Distributed 28 CDs of UXO-5.</li> </ul>

**11. ASTSWMO Federal Facilities Managers Symposium 2010**

<b>The Association of State and Territorial Solid Waste Management Officials (ASTSWMO) Meeting Jacksonville, FL March 10-11, 2010</b>	
Conference Details:	Sponsored by ASTSWMO Federal Facilities State Federal Coordination Group, the purpose of this meeting is to provide a forum on major issues and elements associated with munitions response programs, to provide an opportunity to address procedural and policy areas demonstrated to be challenges at munitions response sites, to highlight and share program innovations and success stories, and to train State/Territorial regulatory staff on new policies and developments that affect State programs.
Membership on-site:	Guy Warren, Bill Harmon
Membership traveled:	No membership traveled.
Outcome Summary:	<ul style="list-style-type: none"> <li>• Provided PowerPoint presentation about the use of UXO-5 to approximately 100 attendees.</li> <li>• Distributed 53 CDs of UXO-5 and 18 fact sheets.</li> </ul>

**12. NARPM 2010**

<b>National Association of Remedial Project Managers 2010 Crystal City, VA May 24-28, 2010</b>	
Conference Details:	The National Association of Remedial Project Managers (NARPM) promotes the exchange of information between RPMs from all regional offices, provides a forums where RPMs discuss regional and national issues of concern, and identifies ways that RPMs respond to those issues.
Membership on-site:	Herb Nelson, Daniel Ruedy
Membership traveled:	No membership traveled
Outcome Summary:	Provided presentation including quality concepts and introduction to UXO-5 to a total of 17 attendees.

**13. RITS 2010**

<b>Remediation Innovative Technology Seminar Various Locations May-June, 2010</b>	
Conference Details:	The Remediation Innovative Technology Seminar (RITS) offers a day of presentations twice a year for Navy Remedial Project Managers (RPMs). RPMs get the latest information on technologies, methodologies, and guidance to carry out their responsibilities in the Navy Environmental Restoration Program. Other Department of Defense (DoD) personnel, Navy environmental restoration contractors, and federal/state environmental regulators are welcome to attend. Our goal is to achieve site restorations more efficiently and cost effectively. The session of interest to the UXO Team is "Seeds of Success: Improving Munitions Response Project Quality"
Membership on-site:	Herb Nelson
Membership traveled:	No membership traveled
Outcome Summary:	<ul style="list-style-type: none"> <li>• Provided presentation including quality concepts and introduction to UXO-5 to a total of 177 attendees across the multiple locations.</li> </ul>

**14. SERDP/ESTCP Symposium 2010**

Conference Details:	<b>Strategic Environmental Research and Development Program (SERDP)/Environmental Technology Certification Program (ESTCP) Partners in Environmental Technology Symposium 2010. Washington, D.C. November 30-December 2, 2010</b>
Membership on-site:	None
Membership traveled:	Bill Harmon, Guy Warren
Outcome Summary:	Presented UXO-5 during poster session on Wednesday, December 1, 2010. Distributed 27 copies of UXO-5 fact sheet.

**15. M<sup>2</sup>S<sup>2</sup> (Formerly Stand-down) 2010**

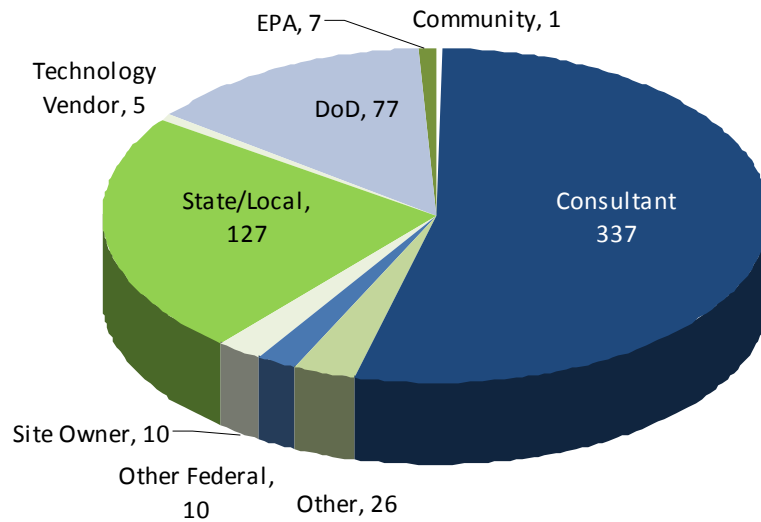
Conference Details:	<b>Military Munitions Support Services (Formerly Stand-down) Huntsville, AL December 8, 2010</b>  The 2010 Military Munitions Support Services (M2S2) Workshop in Huntsville, AL is the annual meeting place for the country's most urgent munitions cleanup issues. Sponsored by Headquarters, U.S. Army Corps of Engineers, and organized by the Corps' Environmental and Munitions Center of Expertise, it brings together experts, practitioners, decision makers and leaders from around the country to exchange ideas, foster new thinking and develop solutions.
Membership on-site:	Guy Warren, Bill Harmon, Jim Pastorick
Membership traveled:	No membership traveled.
Outcome Summary:	Provided Quality IBT to 33 attendees. Bill Harmon also gave a presentation to the Plenary (approximately 200 attendees) session regarding the State regulatory perspective of the MMRP Program.

### APPENDIX C: UXO-5 INTERNET-BASED TRAINING ATTENDANCE

As stated in the main body, the UXO Team’s IBT has reached at least **804** participants since its Dry-Run offering in November, 2008. Figure C-1 provides a glimpse of the IBT’s reach as participation by state, and Figure C-2 illustrates participant distribution by organization.



**Figure C-1.** States with participation in UXO-5 IBT as of June, 2010. **44** states and territories have participated in the training. Not represented in the map are participants from District of Columbia, Hawaii, Guam, and Puerto Rico.



**Figure C-2.** Distribution of IBT attendees by organization as of June, 2010.

**APPENDIX D: SAMPLE FEEDBACK ON THE UXO-5 INTERNET-BASED TRAINING**

*“You guys are doing a great job. I appreciate the efforts of Guy, Jim, and Bill. It's a service to the contractor and regulatory community.”*

— Consultant

*“This was my first experience with the ITRC website and I will definitely use and recommend it in the future.”*

— Consultant

*“Thanks for offering these particular courses. We have several military installations that we inspect and it helps to understand the processes and concepts for conformance.”*

— State Regulator

*“This was actually the best ITRC presentation I have watched. the presenters were knowledgeable and conveyed their meanings using real examples which were easy to understand.”*

— State Regulator

*“Thank you again for a great course. I ALWAYS pick up things that wouldn't've occurred to me.”*

— Federal Agency Representative



## APPENDIX E: DOCUMENT CONTRIBUTORS

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## APPENDIX F: OUTREACH PACKAGE

Figure F-1. Outreach Fact Sheet (Side 1)



Spring 2010

Interstate Technology & Regulatory Council

<http://www.itrcweb.org/>

### Introduction

The Interstate Technology & Regulatory Council (ITRC) is devoted to reducing barriers to implementing better, more cost-effective, and innovative environmental techniques.

Since its inception in 1999, the ITRC Unexploded Ordnance (UXO) Team has built a partnership of state regulators, federal partners, stakeholders, and industry to address complex technical challenges associated with munitions response through team meetings, classroom training, guidance document development, and outreach. The team has produced several products since its formation – four documents as well as both classroom and Internet-based training. In its 9th year, the team focused on developing a technical/regulatory guidance document to address issues of quality assurance (QA) and quality control (QC) programs for munitions response (MR) projects. The document, *Quality Considerations for Munitions Response Projects (UXO-5)*, was released in July 2008.



Operators carrying a "man portable" survey platform during an MR project

### Document Overview

The UXO Team produced the guidance document in response to increasing regulator involvement with oversight on MR projects. Although most regulators are familiar with QA and QC practices for environmental cleanup, few have experience in or knowledge of how these practices are applied to MR projects and their associated specialized processes.

The stakeholders of an MR project must be confident that cleared land is safe for its intended reuse. Identifying performance requirements and metrics is a recommended method for controlling the quality of the multi-process systems that are used on MR projects. UXO-5 concentrates on explaining these processes and methods for controlling and measuring them.



A 60mm mortar removed from an MR site

Go to  
[www.itrcweb.org](http://www.itrcweb.org) to find out more

INTERSTATE TECHNOLOGY & REGULATORY COUNCIL  
*Regulatory Acceptance for New Solutions*

**Figure F-2.** Outreach Fact Sheet (Side 2)

UXO-5 complements previously published ITRC UXO Team documents and training, and the quality concepts presented in it are intended to be applicable to all Department of Defense (DoD) component programs, and federal and state regulatory agencies. The document is consistent with the Comprehensive Environmental Response, Cleanup, and Liability Act (CERCLA) and the CERCLA response process. The document is also consistent with guidance provided in Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP) and focuses primarily on ensuring the quality of the specialized processes of an MR project.

### Document Availability

Released in July 2008, *Quality Considerations for Munitions Response Projects (UXO-5)* is available online at:



[www.itrcweb.org](http://www.itrcweb.org)

A limited number of print copies and CDs of the document are available upon request.



### Internet-based Training Course on Quality Considerations for Munitions Response Projects

To complement this Technical & Regulatory Guidance Document, the UXO Team also developed an Internet-based training course, hosted on USEPA Technology Innovation Program servers.

This training will introduce regulators, cleanup contractors, site owners/operators, and technology providers to the document and related topics.

More information on this training opportunity can be found at:

<http://www.cluin.org/confitrc>



### Other Products from the ITRC UXO Team

Other products from the UXO Team include: *Breaking Barriers to the Use of Innovative Technologies: State Regulatory Role in Unexploded Ordnance Detection and Characterization Technology Selection* (December 2000); *Munitions Response Historical Records Review* (November 2003); *Geophysical Prove-Outs for Munitions Response Projects* (November 2004); *Survey of Munitions Response Technologies* (June 2006)(with ESTCP and SERDP); and *Frequently Asked Questions About Wide Area Assessment for Munitions Response Projects* (in development) (with SERDP). These documents, as well as more information on the UXO Technical Team, its products, and the ITRC, are available from the UXO Team's Web site at:

[http://www.itrcweb.org/teampublic\\_UXO.asp](http://www.itrcweb.org/teampublic_UXO.asp)





These documents, as well as more information on the UXO Technical Team, its products, and the ITRC, are available from the UXO Team's website at: [http://www.itrcweb.org/teampublic\\_UXO.asp](http://www.itrcweb.org/teampublic_UXO.asp)

Go to [www.itrcweb.org](http://www.itrcweb.org) to find out more

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Regulatory Acceptance for New Solutions

Figure F-3. Team Outreach Poster

# ITRC Unexploded Ordnance (UXO) Technical Team: Quality Considerations for Munitions Response Projects

**Team Mission Statement**

Since its inception in 1999, the ITRC Unexploded Ordnance (UXO) Team has built a partnership of state regulators, federal partners, stakeholders, and industry to address complex technical challenges associated with munitions response (MR). The team has produced several products since its formation – five documents as well as both classroom and Internet-based training (IBT). In its 9<sup>th</sup> year, the team focused on developing a technical/regulatory guideline document to address issues of quality assurance (QA) and quality control (QC) programs for MR projects – Quality Considerations for Munitions Response Projects

**Scope of the Problem**

Recent estimates indicate that over 10 million acres in the United States may contain unexploded ordnance (UXO), at about 3,500 different sites.

- State regulators nationwide are increasingly providing oversight at MR projects.
- Proper application of a process approach to MR should produce results of verifiable quality for defensible decision making.
- Although most regulators are familiar with quality management practices for environmental cleanups, few have experience or knowledge of how these practices are applied to MR projects.

**Document Content**

The document provides guidance to environmental regulators on how to systematically plan for and achieve quality results, and how to apply these concepts to processes common to an MR project.

- The document emphasizes taking a whole-system process approach to managing an MR to optimize quality.
- Whole-system design means optimizing not just the parts, but the entire system.
- Practically speaking, the UXO Team views MR as a system made up of processes, sub-processes, and tasks.
- Through the proper application of a whole-system process approach to plan and manage an MR project, the MR project should produce results of verifiable quality with sufficient QA and QC documentation for defensible decision-making.
- Provides a description of the individual process, the tasks that are typically performed, key factors to consider when planning each MR process, and QA/QC checks to monitor MR processes.

**Applicability and Benefits**

The quality concepts presented in this document are applicable to all U.S. DoD component programs and federal and state regulatory agencies. Regulators are encouraged to use the document to ensure quality in MR projects. Proper application of its concepts can lead to:

- Cost savings
- High confidence in project results
- Defensible decision making

For more information, visit us on the web at:

[www.itrcweb.org](http://www.itrcweb.org)


**Training Opportunities**

ITRC has developed a FREE Internet-based training (IBT) course for this guidance document. The training starts with a background of basic quality concepts; then applies them to MR project processes; and illustrates the consequences of adequate and inadequate process approaches in three case studies.

Live offerings of the IBT are not yet scheduled for 2011. However, archived versions are available from EPA's Clu-In website. Please visit <http://www.itrcweb.org/ibt.asp> for more information

**Other Products from the UXO Team**

- Breaking Barriers to the Use of Innovative Technologies: State Regulatory Role in Unexploded Ordnance Detection and Characterization Technology Selection, UXO-1, 2000
- Munitions Response Historical Records Review, UXO-2, 2003
- Geophysical Prove-Outs for Munitions Response Projects UXO-3, 2004
- Survey of Munitions Response Technologies, UXO-4, 2006
- Frequently Asked Questions: Wide Area Assessment, UXO-6, 2010



State regulators nationwide are increasingly providing oversight at MR projects.