RAS 14495

Save the Valley (Pastorick) Ex. 3

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket No. 40-8838-MLA
U.S. ARMY	)	ASLBP No. 00-776-04-MLA
(Jefferson Proving Ground Site)	)	September 18, 2007

PREFILED REBUTTAL TESTIMONY OF

JAMES PASTORICK

IN SUPPORT OF CONTENTION B-1

OF INTERVENOR SAVE THE VALLEY, INC.

TEMPLATE = SECY-028

SECY-02

Q.1. Please state your name, professional position, and business address.

A.1. James Pastorick, President of UXO Pro, Inc. 811 Duke St., Alexandria, VA 22314.

Q.2. Are there any acronyms or abbreviations in your testimony that should be identified?

A.2. Yes. I identify the following acronyms and abbreviations:

- "MEC" refers to munitions and explosives of concern. This is an overall descriptive term for any explosive hazard downrange at the JPG DU area regardless of its condition.

- "UXO" refers to unexploded ordnance. This is a specific classification of MEC that is ordnance that has been prepared for deployment, has been deployed as designed, and failed to function as designed (failed to detonate). Many UXO are incapable of detonation because their fuzes are unable to function due to age and exposure to the weather. But, as a standard safety practice all UXO are considered to be shock sensitive until they can be otherwise positively identified.

- "EOD" refers to explosive ordnance disposal. This is a technical specialty in the military that is trained to deal with and dispose of MEC and UXO.

- "UXO specialist" refers to civilian personnel trained to detect, identify and dispose of MEC and UXO. UXO specialists are often former military EOD technicians.

Q.3. What are your job duties and responsibilities?

A.3. I am President of UXO Pro, Inc., a small company that provides technical consulting in MEC project planning, management and quality assurance. As the only employee of UXO Pro I provide all technical services offered by this company including:

- Reviewing technical documents (MEC project work plans and reports) and developing written comments;

- Participating in technical meetings to resolve technical comments;

- Performing site visits to MEC projects to determine if the approved work plans are being adequately implemented and whether or not project quality is adequate to meet the overall project quality goals and objectives.

UXO Pro's clients are almost exclusively State regulatory agencies who are responsible for performing technical oversight of Department of Defense MEC investigation and cleanup projects on property that is either part of a military base closure or a formerly used defense site with remaining MEC hazards. Frequently this MEC contaminated property is either already being reused for other purposes or will be reused following completion of the MEC investigation and cleanup.

Q.4. Please provide examples of the performance of your duties.

A.4. Most MEC projects must comply with national CERCLA guidelines. As such, they go through a process including a Preliminary Investigation, Site Assessment, Remedial Investigation, Feasibility Study, followed by a formal decision and Remedial Action. All of these phases must be planned and implemented in accordance with specific requirements developed by the EPA, the Department of Defense, the U.S. Army Corps of Engineers, the U.S. Air Force, or the U.S. Navy. The specific guidance followed depends on the regulatory status of the site and the jurisdiction of the Department of Defense component tasked with managing the project. Other MEC projects involve licensees of the Nuclear Regulatory Commission, which must comply with regulations of that agency.

It is my job to provide advice to my clients on the specific technical requirements that should be followed with respect to UXO and to evaluate the project plans and reports for compliance with those regulatory requirements. The goal is to end up with a project site that is suitable for a specific planned future use. This requires a comprehensive and

high quality program because the accidental detonation of MEC during reuse of the property is such a potentially catastrophic hazard.

In the performance of my duties I provide technical support to my clients by advising them on the regulatory and technical requirements of the project and then evaluating the project technical documents for compliance with those requirements. This requires me to review numerous MEC work plans and reports. I estimate that I have reviewed at least one MEC technical document per week during the over eight and one half years that my company has been in business. After I review a document I develop written technical comments on the documents and then participate in discussions with the DoD component and their contractors to resolve each comment.

Then, during the performance of the work, usually either some level of investigation or remediation of an MEC site, I visit the site to inspect the work and the work product to determine whether or not the project goal of property suitable for a specific future use is being achieved. Again, due to the potential catastrophic nature of an accidental detonation of MEC during reuse, the State regulators must develop a high level of confidence that the project goals are being achieved in order to accept that the MEC removal has been successful and no further work is needed. My job, in a nutshell, is to assist the State regulators in developing that high level of confidence to allow the project to be concluded and for the property to be put to new productive uses.

I am currently supporting the States of Alaska, Texas, Alabama, Arizona, Virginia, Michigan, New Jersey and the Commonwealth of Puerto Rico on MEC projects.

Q.5. Please provide your professional qualifications including education, training work experience and publications.

A.5. I have a bachelor's degree in journalism from the University of South Carolina. This is useful to me when I need to efficiently review documents and develop written comments. But, more important to this proceeding are my qualifications in the area of MEC. I am a former U.S. Navy EOD technician. I graduated from the U.S. Naval School of EOD in 1986. Following EOD School I served as an EOD officer in EOD Mobile Unit TWO and made several deployments leading small EOD teams.

I left the Navy in October 1989 and joined the staff of UXB International, Inc. as their Project Manager. UXB was the first civilian UXO company in the U.S. and 1989 was the year of their founding. Therefore, I was the first UXO Project Manager for the first UXO company. During this time I and others in the UXO industry developed the procedures that we still use today, with some modifications and improvements, to safely perform work in MEC contaminated environments.

In 1991 I moved to IT Corporation (later the IT Group) where I was their Senior UXO Project Manager. I was responsible for MEC projects throughout this large company providing MEC field services to the U.S. Army Corps of Engineers and the U.S Navy throughout the country.

After seven years at IT I left to start my own company on January 1, 1999. This company was originally a subsidiary of Geophex, Ltd., a specialty field geophysics company, and was known as Geophex UXO, Ltd. I changed the name to UXO Pro, Inc. when I separated from Geophex on January 1, 2005.

Since the founding of my company as Geophex UXO my focus for my clients has been the same. I no longer perform MEC field services and serve strictly as a consultant. I never work for the Department of Defense or the component military services which allows me to remain free of conflict of interest. This was an important consideration for STV when deciding whether or not to retain the services of UXO Pro.

In addition to my technical work for UXO Pro I also support several organizations by providing technical services on a pro bono basis. For example, I have served on six committees of the National Research Council investigating safe and efficient methods and procedures for the disposal of Non-Stockpile Chemical Warfare Materiel (CWM). CWM is MEC that is filled with toxic chemical agents and its disposal presents some difficult regulatory and technical challenges. Each of the committees on which I served developed technical reports that are available through the National Academy Press.

I am also a long-standing and active member of the Interstate Technology Regulatory Council (ITRC) UXO Team. The ITRC UXO team is comprised of representatives from State regulators, EPA, DoD, the U.S. Army Corps of Engineers, the U.S. Army, the U.S. Air Force, the U.S. Navy, and MEC contractors. This team develops and presents training for in-person and Internet presentation and also develops "technical and regulatory" documents. These documents serve to establish a common set of guidelines on a specific technical topic that are reviewed and accepted by the various member agencies of ITRC and can be applied on a national level. To date I have assisted the ITRC UXO Team in the development of technical documents on "Munitions Response Historical Records Reviews", "Planning and Performing Geophysical Prove-outs on Munitions Response Sites", and we are currently working on a document

covering "Quality Assurance and Quality Control on Munitions Response Sites". I have also assisted the Team in developing and presenting training on "Basic UXO Training", "Munitions Response Historical Records Reviews", "Geophysical Prove-outs on Munitions Response Sites", "Site Investigation and Site Remediaton for Munitions Response Sites", and "MEC Technology Overview". My work with ITRC has been recognized for the past two years with a commendation for achievement.

I am also a Certified Quality Manager certified by the American Society for Quality. This certification demonstrates that I am qualified to develop and implement quality assurance and quality control programs.

My complete resume is attached to my testimony as Exhibit 1.

Q.6. Please describe your involvement in this proceeding on behalf of Save the Valley (STV).

A.6. STV retained UXO Pro to provide technical expertise in the area of MEC. There was concern on the part of STV that MEC contamination in the DU area may be incorrectly used as a reason to alter the sampling plan or the eventual cleanup of the DU contamination. STV determined that technical knowledge in this area would be helpful in establishing how the MEC contamination in the DU Area should appropriately affect future environmental sampling and remediation programs. I provide my expertise in MEC projects and procedures to STV.

Q.7. Did you rely on specific documents regarding UXO in the preparation of your testimony?

A.7. Yes. The "bible" for conducting environmental sampling in areas contaminated with MEC is Engineering Pamphlet (EP) 75-1-2, *Unexploded Ordnance (UXO) Support*

During Hazardous, Toxic, and Radioactive Waste (HTRW) and Construction Activities, (August 1, 2004, available at: www.usace.army.mil/publications/eng-pamphlets/ep75-1-2/toc.htm). This guidance document, previously entered into the record for this proceeding, lists specific procedures for performing various types of environmental sampling in areas contaminated with MEC. For example, procedures are provided for performing exploratory trenching, well and bore hole drilling, direct push sampling, geophysical surveys and general safety escort support in areas contaminated with MEC. This document also describes how to determine the level of hazard presented by MEC and, based on this hazard determination, what level of planning and staffing is required to provide the MEC support necessary to safely perform the desired environmental sampling.

Q.8. Did you review the testimony of STV witness Charles Norris and the responsive testimony filed by the Army and the Staff?

A.8. Yes.

Q.9. Have you reviewed any other documents relevant to the preparation of your testimony?

A.9. Yes, I have reviewed numerous other documents, including the Army's Field Sampling Plan (FSP), as amended by various addenda, and the Army's Health and Safety Plan (HSP). I have also reviewed all of the STV filings in this matter, including all of STV's Contentions and Bases, both those admitted and those not admitted by the Board.

Q.10. Within your area of expertise regarding UXO, do you have technical disagreements with the testimony of other witnesses?

A.10. Yes. Mssrs. Skibinski, Peckenpaugh, Snyder and Eaby all make statements concerning the safety of field technicians and scientists performing environmental field data collection in areas contaminated with UXO with which I at least partially disagree.

Q.11. Please elaborate on theses technical disagreements.

A.11. First, none of these witnesses claim to be formally trained in UXO safety, yet they all make statements regarding UXO safety and how considerations for UXO safety altered the Field Sampling Plan. For brevity, and in an attempt to avoid repetition, I will discuss in detail statements from Mssrs. Skibinski and Mr. Peckenpaugh as examples for my rebuttal and only cite a few statements from Mssrs. Eaby and Snyder. However, the following testimony concerning the statements of Mssrs. Skibinski and Peckenpaugh also applies to the statements of Mr. Eaby in replies to Q27 (page 20), Q29 (page 22), Q30 (page 24), and Q35 (page 29) and the statements of Mr. Snyder in Q25 (page 16), Q38 (page 24), Q42 (page 26), Q46 (page 29), Q48 (page 31), Q58 (page 45) and Q60 (page 48).

In his testimony Mr. Skibinski evaluates a specific technology referenced in the testimony of STV witness Charles Norris and makes the following statement in his response to Q7 at the beginning of the last paragraph on Page 5:

> "Furthermore, the additional characterization recommended by STV (through the testimonies of Ms. Henshel and Mr. Norris) may result in "net public or environmental hard" as described in 10 CFR § 20.1403(a) due to the significant safety hazards posed by numerous unexploded ordnance (UXO) remaining throughout the DU Impact Area. The testimony of Mr. Norris in A024 (page 16 first bullet) indicates that for the Fracture Trace Analysis (FTA), all technology should be considered and the best method selected for the task and conditions. Among the technology he cites is ground penetrating radar (GPR). However, Mr. Norris has either not evaluated or does not understand the capability and limitations of this technologies [sic] in light of the site conditions at JPG, which includes an area laden with UXO. Had he evaluated GPR carefully,

> he would have realized this technology is not appropriate for JPG, since this active energy source could unintentionally detonate certain types of UXO. Therefore, this technology was ruled out immediately. The citation of technologies that are not applicable to the site conditions calls in question the credibility of this testimony on this question. In fact, SAIC considered a wide variety of approaches and opted for the stereo-paired aerial photographs based on factors such as safety, technology status, complexity, relevance and cost. SAIC eliminated GPR from the candidate list very early in the evaluation process based on potential safety concerns."

Mr. Skibinski's testimony is correct that any use of GPR for site characterization at JPG would require evaluation of the UXO risk. However, Mr. Skibinski misinterprets Mr. Norris' reference to GPR as a technology which should be evaluated to suggest that Mr. Norris recommended GPR without such an evaluation. He also uses the UXO risk associated with GPR to eliminate the application of any geophysical sensor on the site. This sets up the "strawman" argument: 1) GPR was noted to be applicable to this site, 2) GPR is not applicable because electromagnetic radiation associated with GPR may initiate electrically initiated UXO, therefore 3) the use of all geophysical sensors is inappropriate at the site and "stereo-paired aerial photographs" are the only acceptable solution.

Application of the guidance contained in EP 75-1-2 indicates otherwise. Through the application of this guidance it is possible to thoroughly evaluate the UXO hazard at the DU Area and determine whether or not other geophysical sensors can be safely deployed. This will include an analysis of the types of ordnance that were fired into the area and a determination of whether or not electrically initiated fuzing was used. If it was, then an appropriate response would be to use geophysics that emits no or low amounts of electromagnetic radiation or to use a geophysical system that can be deployed remotely, thereby removing the personnel from the UXO hazard.

Similar statements on specific technologies worthy of this same rebuttal are made by Mr. Eaby in his answers to questions 27, 29, 30, and 35 and by Mr. Snyder in his answers to questions 38, 60, and 46.

I would also like to discuss two statements made by Mr. Eaby that highlight the lack of comprehensive planning for UXO safety that has occurred on this project. In his response to Q30 on page 24 Mr. Eaby says:

"Undue safety hazards were identified with using the originally proposed drilling method due to the presence of UXO and the possibility of causing of an accidental detonation due to uncontrollable vibration and potential disturbance to the subsurface. This uncontrollable danger associated with using the original drilling method was realized following additional consideration that occurred after the submission of the original FSP."

This statement documents that the planning for the original Field Sampling Plan was deficient as was claimed by STV. It documents that the plan needed to be changed because the presence of UXO was not adequately considered in the original plan. While it is unlikely that any complex field sampling plan can be developed and implemented without undergoing some changes, these changes are usually the result of the discovery of changed field conditions. In this case there are no changed field conditions. UXO has always been known to be present in the DU Area and the sudden discovery of this hazard and the resulting change to the Field Sampling Plan are an acknowledgement that the planning requirements of EP 75-1-2 have not been implemented. And the fact that witnesses are still noting why these changes need to be made to the Field Sampling Plan is an indication that the technical reasons for selecting specific UXO safety procedures have not been adequately documented in the planning documents.

Mr. Eaby makes another important statement in response to Q35 on page 29 when he notes that the change in the drilling method, made, according to his response, solely

due to the realization that UXO were present in the DU Area. "... does provide additional opportunities to observe soil and rock cores further reducing any suggested "need" for borehole geophysics."

With this testimony Mr. Eaby is making the point that UXO safety decisions are driving the field sampling program. But, in a happy coincidence, this UXO safety-driven decision to change the drilling method has resulted in scientific technical advantages for the project. I have advised STV to approach such claims of improved scientific performance resulting from the application of UXO safety procedures with skepticism. The proper application of EP 75-1-2 will result in a field sampling program that is as close as possible to the ideal program from a scientific perspective. If a change to a scientific sampling method is made as a result of a determination that the original sampling method could not be safely implemented and this change results in improved data collection, then it is likely that the planning of the original field sampling plan was inadequate from a scientific standpoint.

Q.12. You have explained some of the deficiencies in the UXO planning that you believe have taken place on this project. Can you provide examples of how UXO planning, in accordance with EP 75-1-2, can be used to optimize the field sampling program?

A.12. Yes. I will examine some of Mr. Peckenpaugh's testimony to make this point. Mr. Peckenpaugh states on Page 18 starting on Line 12:

"The EI survey proposed in the FSP is capable of providing useful data for siting wells and supporting effective decommissioning. While an EI survey developed in a grid as described by Mr. Norris (Norris Testimony at 18) would provide a greater characterization of resistivity, it is unnecessary. The Army's proposal is sufficient. The grid STV desired involved performing an EI survey off road. The Army's actual EI patterns and instrumentation were limited to the existing roads because of the risk of

unexploded ordnance in the areas off of the roads. However, this limitation does not affect adequate site characterization."

This statement is in reference to the placement of electrical imaging (EI) grids. Mr. Norris recommends ideal placement of the EI grids to optimize the quality of the data. This optimized placement of the grids requires implementation of additional UXO safety support to avoid UXO hazards in the area. The current FSP compromises the placement EI grids by placing them along roads to avoid contacting UXO. Mr. Peckenpaugh's testimony says this EI grid placement is adequate and that there is no need to accept any additional risk from UXO because the increased quality of the EI data advocated by Mr. Norris is not needed.

Mr. Peckenpaugh essentially makes a cost/benefit argument. He says that the cost of the ideal EI grid placement advocated by Mr. Norris isn't worth the cost in exposure to UXO hazards. Mr. Norris, on the other hand, believes that the improved quality in the EI data is required to support future decision making.

Both Mr. Peckenpaugh and Mr. Norris are making cost/benefit analyses of the same additional data and coming to different conclusions. From a UXO safety standpoint, I agree with Mr. Peckenpaugh that there is increased risk associated with Mr. Norris' ideal placement of the EI grids. However, this increased risk can be adequately managed using the routine Army Corps of Engineers established procedures in EP 75-1-2. The application of EP 75-1-2 requires that the merits of the various sampling methods and locations be evaluated and decided without consideration of UXO hazards. If the additional data quality is needed to support future decision making, then Mr. Norris is correct and the placement of EI grids should be maximized with appropriate UXO safety support. If, however, Mr. Peckenpaugh is correct and the maximized EI data is not

needed to support future decision making, then he is correct that any additional risk from UXO is not necessary and should be avoided.

The second mention of UXO in Mr. Peckenpaugh's testimony is on Page 21 starting on Line 17:

"Second, Mr. Norris feels that locating the stream gauging stations at bridges and culverts under roads is inappropriate. I feel these are correct locations. This is common practice in locating stream gauges by the U.S. Geological Survey. These locations provide some additional protection for the gauges from ice and tree trunk jams that occur in the winter and for the Army's contractors from unexploded ordnance during their monthly service of the equipment and measurement of stream discharge."

In this statement, Mr. Peckenpaugh uses the monthly servicing of stream gauging stations as a reason to compromise the placement of the stations to areas near roads and culverts to avoid exposing field technicians to MEC hazards. He reasons that since technicians are required to visit the stations on a monthly basis that this repeated exposure to MEC hazards is unacceptable.

Again, I disagree with his reasoning for subordinating the optimization of the field sampling plan to his perceived analysis of the risk of MEC at the site. In this case, the MEC safety procedures that should be implemented in accordance with EP 75-1-2 involve finding and marking a path from the nearest road departure point to the sampling station location. This path should be permanently marked on both sides with stakes or posts connected by lines. Once this pathway is established as "free of MEC hazards" and adequately marked, the field technicians will be able to return to the station using the established and marked path without additional UXO support and with no exposure to UXO hazards. Therefore, his claim of repeated monthly exposure to UXO hazards is not supportable.

Again, the basic issue is a cost/benefit analysis on which Mr. Norris and Mr. Peckenpaugh disagree. If the data from the stream gauging stations needs to be optimized to support future decision making then the additional UXO hazards encountered are easily managed and controlled to allow this optimized data to be collected. However, if Mr. Peckenpaugh is correct and the optimized data is not needed, then he is correct that any additional exposure to UXO hazards is neither necessary nor appropriate.

In summary, my recommendation is that field sampling technical issues should be decided based on the technical requirements of the environmental data that needs to be collected. If the required data quality can be achieved without exposure to UXO hazards then this approach should be implemented. On the other hand, if the data requirements can only be achieved by entering the DU Area then routine UXO safety support procedures should be implemented to allow the optimized placement of data collection activities while managing the UXO hazard to which field technicians are exposed. Additional discussion of a proposed approach, which is in compliance with the requirements of EP 75-1-2, is presented in my answer to Question 14.

Q.13. In your opinion, is it be unsafe for Army contractor personnel to enter the DU area off the roads in order to perform sampling activities to characterize the site?

A.13. No. Several of the referenced witness responses indicate a general concern for UXO safety including Mr. Snyder's response to Q25 (page 16), Q42 (page 26), Q48 (page 31) and Q58 (page 45). Certainly, these comments are not claiming that it is not possible to safely enter the DU Area off the roads since it has been conclusively

established that it is possible to safely enter and work off the roads in the DU Area. The *Archive Search Report for Ordnance and Explosive Waste and Chemical Warfare Materiel, Jefferson Proving Ground, Volume I* (June 1995) documents that 100-kg. of DU has been manually removed from this site without incident clearly demonstrating that it is possible to enter and work inside the DU Area off the roads. Prior site characterization and environmental monitoring activities, including well-drilling and cave exploration have also taken place off the roads.

Furthermore, Mr. Skibinski himself notes in his testimony in the second paragraph of Page 3 that he has safely entered and performed work off the roads in the DU Area when he says, "I have visited the JPG Depleted Uranium (DU) Impact Area on two occasions and have personally examined a DU penetrator embedded in shallow surface soil in the DU Impact Area during the electrical imaging (EI) survey." This statement documents that Mr. Skibinski has – with the necessary UXO precautions, I am sure – entered the DU Area off the roads without incident on at least one of the two occasions he has visited JPG.

It, therefore, should be established beyond dispute that it is possible to safely perform some level of entry and activity off the roads in the DU Area. The specific conditions of this entry and the specific activities that can be performed, including geophysical surveys, remains to be determined because the analysis required by EP 75-1-2 has not been completed by the Army. Please see my response to Question 14 for a technically appropriate method for determining the types of activities that can be performed in the DU Area that is consistent with the guidance provided in EP 75-1-2.

Q.14. Based on your experience and knowledge of MEC, is it possible to determine the specific type of entry and activities that can be performed safely in the DU Area and to provide adequate MEC safety support for those activities?

A.14. Yes. EP-75-1-2 requires an analysis of the hazard including the probability that MEC is present and the specific characteristics of that hazard. Following this analysis it is possible to determine if the preferred sampling program can be safely implemented on the site. Please note that this process doesn't restrict the analysis and determination of the preferred sampling methods. This process sees the MEC safety program as support to the environmental sampling program. The MEC safety procedures will be developed in collaboration with the environmental scientists to achieve the best sampling program possible as designed by the environmental scientists.

Mr. Snyder provides an example of this type of UXO safety analysis and planning when he says in response to Q46 on page 29: "These dangers [UXO] were minimized/avoided during the EO survey at JPG because we took advantage of cleared corridors and used a delayed start to collect data while personnel retreated to a safe area." This is an example of using UXO procedures (cleared corridors and remote initiation of the sampling event) to allow the desired field sampling plan to be implemented. If this type of planning were performed and documented througout the Field Sampling Plan there would be little for anyone to criticize concerning the approach to UXO safety on the project.

Under this approach, supported by EP 75-1-2, the environmental scientists develop their preferred sampling plan. This is presented to the project UXO specialists who will evaluate the impact of UXO safety on the preferred sampling plan. It may be

possible to implement the preferred sampling plan or it may be necessary to make modifications to it for the purposes of maintaining adequate UXO safety. For example, inspection of the site by UXO specialists may demonstrate that implementation of the preferred sampling plan is possible in some areas but not possible in others due to a specific MEC hazard that is observed. Or, it may be possible to perform some small area "footprint UXO clearance" to allow the preferred sampling plan to be implemented.

However, the important point is that the environmental sampling plan should not be driven by some perceived insurmountable restriction caused by MEC. It is not an optimal solution for the environmental scientists to assume that certain sampling methods cannot be implemented in the DU Area. The application of standard procedures contained in EP 75-1-2 may allow for a specific desired sampling method to be used, or it may be able to be used in specific areas or under specific conditions. This can only be determined through the analysis required by EP 75-1-2, which should be documented in the Field Sampling Plan. In the case of the Field Sampling Plan for the JPG DU Area, this analysis has not been documented in the Field Sampling Plan.

Development of the sampling plan should be achieved by first developing the preferred sampling methods and locations. Then, the UXO specialists, in collaboration with the environmental scientists, will be able to evaluate whether or not the preferred plan can be implemented. It is likely that some modifications will need to be made to the preferred sampling plan to accommodate MEC safety. But through the application of EP 75-1-2, in collaboration with the environmental scientists, it is likely that a modified sampling plan can be developed that is much closer to the preferred sampling plan recommended by Mr. Norris than is the current Field Sampling Plan.

Q.15. Does this conclude your testimony?

A.15. Yes, it does.

I affirm, under the penalty of perjury, that the foregoing testimony is true to the best of my knowledge, information and belief.

James Pastorick

Exhibit 1
Resume for James Pastorick

UXOPro

James P. Pastorick, CQM
Professional Qualifications

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E-mail: jim@uxopro.com

Jim Pastorick is an Unexploded Ordnance (UXO) Technician with over twenty years of active Explosive Ordnance Disposal (EOD) and UXO experience. He has served in various missions as an officer in U.S. armed forces EOD including Officer-in-Charge of an EOD unit deployed in the Mediterranean Sea and tasked with providing emergency EOD response to the Sixth Fleet. Since leaving the military he has continued his EOD activities as Senior UXO Project Manager for UXB International, Inc. and IT Corporation and as President of the specialty UXO consulting companies Geophex UXO, Ltd. and UXO Pro, Inc.

Mr. Pastorick has served on the National Research Council Committee on Disposal of Non-Stockpile Chemical Warfare Material (CWM). This important committee investigated methods to safely handle and dispose of UXO containing CWM in an efficient manner to allow cost-effective cleanup of non-stockpile CWM burial sites. He is also a member of the Interstate Technology Regulatory Council (ITRC) UXO Team where he develops and presents UXO training courses and assists in the development of technical guidance documents related to UXO technical issues of interest to state regulators.

Education

B.A., Journalism, The University of South Carolina, Columbia, South Carolina; 1980

Additional Training:

EOD Technician, U.S. Naval School of EOD, Indian Head, Maryland; 1986
U.S. Navy Diver and Salvage Officer, Naval Diving and Salvage Training Center, Panama City, Florida; 1982
40-Hour OSHA Hazardous Waste Operator Training (with annual refreshers)
8-Hour OSHA Hazardous Waste Supervisor Health and Safety Training
Department of Energy Radiation Worker II
CPR

Registrations/Certifications

Certified Surface Blaster, State of Virginia; 1990
EOD Technician, U.S. Navy, 1986
Deep Sea Diver, U.S. Navy, 1982
Certified Quality Manager (CQM) #8236, 2004, American Society for Quality

Experience and Background

1999 - Present

President, Geophex UXO, Ltd. and UXO Pro, Inc.., Alexandria, Virginia

Mr. Pastorick is President of this UXO consulting company that assists private sector clients and state governments in the planning, management, and quality assurance (QA) of UXO investigation and cleanup projects. Specifically, Mr. Pastorick reviews and develops written comments on MEC-related technical documents, attends technical and public meetings to provide technical support to state regulator Project Managers, and performs site visits to ensure that work is being performed in accordance with the approved work plan.

Mr. Pastorick is currently serving as the UXO technical consultant to the State of Alaska Department of Environmental Conservation (ADEC) on the cleanup of the former **U.S. Naval Base on Adak Island**, the former **Fort Glenn on Umnak Island** and the former World War II facility on **Amchitka Island**. Previous projects for ADEC have included the former **Gerstle River Expansion Area**, near Delta Junction, and former Department of Defense facilities on **St. Lawrence Island, Kodiak Island**, and at **Dutch Harbor**. The **Adak UXO cleanup** has recently reached a milestone with the transfer of property from the U.S. Navy to a Native American corporation. This land transfer required the completion and signing of the first Record of Decision (ROD) for a Superfund UXO site.

He is also providing technical support to the Environmental Quality Board (EQB) of Puerto Rico on the cleanup of **Vieques Island, Culebra Island, and Pineros Island,** all former bombing or military training facilities. The former **Vieques Naval Bombing Range and former Naval Ammunition Support Detachment and the Culebra Island Training Area** are closed bombing and ordnance training ranges that are currently being investigated and remediated, Vieques is a base closure and EPA Superfund site, while Culebra is a Formerly Used Defense Site. **Pineros Island** was a former training area used by Navy Special Warfare personnel and is being investigated under the base closure of the Roosevelt Roads Naval Station. On these projects Mr. Pastorick provides technical consulting services (document reviews, meeting attendance, resolution of technical issues, field quality assurance inspections) directed toward achieving an adequate investigation and cleanup of the islands to permit the planned end use of the property by Puerto Rico and the Municipalities of Vieques, Culebra and Ceiba, where the sites are located.

Mr. Pastorick provides technical support (document reviews, meeting attendance, resolution of technical issues, quality assurance inspections) to the Arizona Department of Environmental Quality (ADEQ) on the characterization and cleanup of **Camp Navajo**. This active Arizona National Guard site has closed its ordnance disposal ranges and is performing MEC investigation and remediation to convert this property to other training uses.

Mr. Pastorick completed providing UXO technical support to Laing/Village LLC on the cleanup of a portion of the **former Lowry Bombing and Gunnery Range** in Aurora, Colorado. On this project he supervised another Geophex UXO employee in working

with the client, the contractor and Colorado State regulators in devising and implementing a UXO removal project which would allow the property to be used for residential development. This work resulted in the successful issuance of a letter from the Colorado State regulators certifying that the work done is adequate for reuse of the property for residential development.

He has also provided extensive UXO technical support to a legal team working for **Panama** to assess the cleanup of UXO in the former **Canal Zone and on San Jose Island**. In Panama Mr. Pastorick provided technical support to lawyers retained by Panama to help them evaluate the condition of property formerly used by the DoD. This evaluation consisted of conventional UXO contamination in the Canal Zone Ranges and chemical weapons contamination on San Jose Island. He investigated and documented the ordnance contamination at both locations and presented the findings to high-ranking delegations from the U.S., Panama, and the United Nations.

UXO Pro provides UXO technical support to the Alabama Department of Environmental Management (ADEM) and the Texas Commission on Environmental Quality (TCEQ). Since beginning the ADEM support work in March 2005 Mr. Pastorick has been providing technical consulting to ADEM Project Managers on the base closure and site reuse project at **Fort McClellan,** the active facility MEC cleanup at **Redstone Arsenal,** and on the non-stockpile chemical ordnance live-fire area at the **Camp Sibert Formerly Used Defense Site.**

For the Texas state regulators he has provided similar technical consulting services for the **Pantex, Camp Bowie, Camp Fannin, Cabaniss Naval Auxiliary Landing Field, Camp Swift and Camp Maxey Formerly Used Defense Sites.**

In support of the New Jersey Department of Environmental Protection (NJDEP), Jim Pastorick is providing document review and project oversight on the investigation of the **former Millville Bombing Range** which is planned for reuse as an auto race track and entertainment complex.

In addition, Jim Pastorick has provided training in MEC projects to the Michigan Department of Environmental Quality (MDEQ) and the Virginia Department of Environmental Quality (VDEQ).

1991 - 1998
Senior UXO Project Manager, IT Corporation, Pittsburgh, Pennsylvania
Responsible for management and supervision of projects concerning investigation and remediation of sites contaminated with explosives and UXO for federal government and industrial clients. Specific experience includes the following:

UXO Technical manager for the base closure environmental restoration of **Fort Ord, California** performed under the USACOE Sacramento District Total Environmental Restoration Contract (TERC). UXO was encountered routinely during the environmental restoration work at Fort Ord and Mr. Pastorick was responsible for ensuring the safe

detection, removal and disposal of UXO interfering with the restoration work. UXO was encountered and handled safely during site investigations, fence and pipeline installations, and landfill excavations. Mr. Pastorick worked closely with USACOE and California Department of Toxic Substances Control (DTSC) as he developed the Fort Ord UXO Program Management Plan and individual Site Specific UXO Plans.

UXO Technical Manager for the environmental restoration field activities performed under the USACOE Southeast Division TERC at **Redstone Arsenal** and **Fort McClellan, Alabama**. This work required the development of an overall UXO Program Plan and Site Specific Plans, including procedures for handling UXO containing CWM, and periodic monitoring of site workers to ensure compliance with the plans. UXO was routinely encountered on these sites during intrusive operations including well drilling, cutting access roads through wooded areas, and while excavating.

UXO Technical Manager during environmental restoration activities on **Wake Island**. This work, performed for the U.S. Navy NAVFAC Pacific Division, required the development of UXO safety plans for the live U.S. and Japanese ordnance expected to be encountered on this World War II battle site. U.S. 5-in. projectiles, U.S. bombs and U.S. anti-aircraft rounds were discovered and marked for later disposal. Mr. Pastorick also developed and supervised a diving plan for the underwater inspection of the **Peacock Point debris pile**. This required planning and implementing the work for a five-person SCUBA team to perform an underwater inspection of the trash pile and to document the inspection with still and video cameras. The documentation of the inspection is being used to determine whether or not the debris pile should be removed as part of the environmental restoration of Wake Island.

UXO Technical Manager for the remediation of various U.S. Army World War II encampments in the vicinity of **Nome, Alaska** for USACOE. This project required developing an overall UXO Safety Plan to allow work to safely be conducted at these remote sites. UXO Specialists were provided, under Mr. Pastorick's supervision, to inspect each site prior to work being performed to determine if UXO was a potential hazard. The UXO Specialists then provided UXO safety support to those sites determined to potentially contain UXO to ensure the safety of the field workers.

Project Manager for the thermal decontamination of an explosively contaminated building and its associated external wastewater sump for USACOE at the **U.S. Army Depot Activity, Umatilla, Oregon**. This former TNT process building had been dismantled and gross decontaminated by water washing. Mr. Pastorick directed a team of UXO Specialists in the restacking and open burning of the building and components in accordance with the Scope of Work requirements. The same team built a remote excavation apparatus, designed by Mr. Pastorick, and used it to remotely excavate the TNT contaminated sludge from the wastewater sump. Approximately 500-lb. of removed explosive sludge was transported to the facility burn area and burned. The contaminated sump was then loaded with charcoal and an air injection system, designed by Mr. Pastorick, and in accordance with the Scope of Work requirements, and was burned to decontaminate it for removal and disposal

Project Manager and onsite supervisor of the geophysical site survey and the removal and disposal of landmines at the USACOE **Fort Belvoir Engineer Proving Ground, Virginia**.

Project Manager for the base closure UXO survey of **Fort George G. Meade, Maryland**. Duties included the development of all project plans and coordinating the survey, location, removal, and disposal of UXO from 1,400 acres of this former tank training area in support of the DOD Base Closure and Realignment Program. Mr. Pastorick supervised all phases of this large UXO remediation project including site mapping using Global Positioning System (GPS) interfaced with Autocad and a computerized database.

Project Manager for the UXO survey of a 50-acre area of the former **Fort Sheridan, Illinois** in support of the USACOE under the DoD Base Realignment and Closure Program.

Project Manager for the explosives investigation at the former **Chemical Insecticide Corporation in Edison, New Jersey**. This USACOE project required development of field sampling and analysis methods to identify buried deposits of black powder, which had previously caused two accidental detonations during drilling by another contractor. The sampling and analysis methods developed by Mr. Pastorick were successfully implemented and the construction of a landfill cap and venting system were successfully completed.

UXO Technical Manager for the UXO removal and disposal of a surface-dumping site at the **U.S. Naval Weapons Station, Yorktown, Virginia**. This site was used for the disposal of mixed scrap and UXO and over 4,300 UXO, including 743 large naval mines, were recovered and disposed of.

UXO Technical Manager for the UXO removal and disposal of six surface disposal pits at the **U.S. Department of Energy's (DOE) Tonopah Test Range in Nevada**. UXO and debris were removed and disposed of from the six pits. UXO including more than 20,700 antipersonnel bomblets, 2,000-lb., 1,000-lb., and 500-lb. bombs, large artillery projectiles, and missile components were disposed of by detonation or explosive cutting. Demilitarized UXO and large amounts of decontaminated scrap were sold by the DOE to a local scrap dealer for recycling.

1989 - 1991
Senior UXO Project Manager, UXB International, Inc., Chantilly, VA
Responsible for management and supervision of UXO and explosive-related projects for prime contractors working under U.S. Department of Defense (DOD) contracts. Specific project experience includes the following:

Managing USACOE explosive waste and UXO remediation projects at the **former Naval Ammunition Depot, Hastings, Nebraska** and the former **Temecula Practice Bombing Range, Orange County, California**. Specific duties performed include conducting site

visits, project cost estimating and accounting, work plan and safety plan development, monitoring field activities to ensure compliance with requirements, and development of project final reports.

Managing investigations to determine the amount and type of UXO contamination remaining at the USACOE projects at the **former Kingsbury Ordnance Plant, LaPorte, Indiana**; the former **Pantex Ammunition Plant, Amarillo, Texas**; and the former **Sioux Ammunition Depot, Sidney, Nebraska**.

Managing UXO site clearance and safety escort services during soil sampling and well drilling operations at USACOE UXO projects at **Umatilla Army Depot Activity, Oregon**; **Fort Sheridan, Illinois**; **Savanna Army Depot Activity, Illinois**; **Milan Army Ammunition Plant, Tennessee**; **Cornhusker Army Ammunition Plant, Nebraska**; **Fort Jackson, South Carolina**; and **Sierra Army Depot, California**.

Managing and supervising field operations on USACOE projects involving hazardous and toxic materials and requiring Level "B" personal protective equipment including the decanting and removal of explosive Lead Azide Sludge from 55 gallon storage drums at the **Savanna Army Depot Activity, Illinois** and testing for toxic military chemical agents at **Umatilla Army Depot Activity, Oregon**; **Aberdeen Proving Ground, Maryland**, and **Fort Sheridan, Illinois**.

Conducting an underwater live firing range clearance at **Tuno Knob, Denmark**. Mr. Pastorick provided planning, management, and supervision of eight UXO Specialist/Divers performing the location, identification, and disposal of UXO at this former target area. The removal and disposal of over 500 UXO and the removal and salvaging of two former Danish Navy warships that were used as targets was accomplished.

1981 - 1989
Naval Officer and EOD Technician/Diver, U.S. Navy, Various Commands
Responsibilities and achievements include managing, directing and supervising personnel assigned to a variety of units from five-person EOD teams to fifty-person shipboard divisions, and maintaining all equipment assigned including specialized EOD tools and diving life-support systems. Completed two Western Pacific deployments and one Mediterranean deployment as Diving Officer and EOD Team Officer-In-Charge. Conducted frequent EOD training and operational deployments, and advanced to final rank of Lieutenant Commander.

1978 - 1981
Photojournalist, The Columbia Record, Columbia, South Carolina
Responsibilities and achievements include reporting on news, sports, and feature stories for a daily newspaper using photographs supplemented by written articles. 1980 South Carolina Photojournalist of the Year. Developed exceptional writing skills under deadline pressure.

1972 - 1976
Enlisted Service, U.S. Navy Seabees, Various Commands.

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