

STATE OF NEW MEXICO
NEW MEXICO ENVIRONMENTAL IMPROVEMENT BOARD



**IN THE MATTER OF PROPOSED
AMENDMENTS TO HAZARDOUS
WASTE PERMIT AND CORRECTIVE
ACTION REGULATIONS AND ANNUAL
HAZARDOUS WASTE FEES
20.4.2 AND 20.4.3 NMAC**

EIB 19-35 (R)

**NOTICE OF INTENT TO PRESENT TECHNICAL TESTIMONY ON BEHALF OF
THE DEPARTMENT OF DEFENSE**

Pursuant to 20.1.1.302 NMAC, the Department of Defense hereby submits this Notice of Intent to Present Technical Testimony on behalf of the Department of Defense for the hearing in this matter currently scheduled for December 20, 2019.

1. Identify the person for whom the witness(es) will testify:

Dr. Mahalingam Ravichandran will testify for the DoD.

2. Identify each technical witness the person intends to present and state the qualifications of that witness including a description of their educational and work background:

Mahalingam Ravichandran is a technical witness who will testify regarding the economic impact of the proposed regulations on the Department of Defense (hereby "DoD"). Dr. Ravichandran has served as the DoD Regional Environmental Coordinator (hereby "REC") for United States Environmental Protection Agency (hereby "USEPA") Region 6, and as the Air Force (hereby "AF") REC for USEPA Region 5 from February 2018 to the present. In this capacity, Dr. Ravichandran monitors and reviews proposed regulations and legislative proposals, determines the impact to the DoD and AF operations, coordinates with other DoD serve components, and develops and communicates DoD positions. Prior to this, Dr. Ravichandran

served: as the Division Chief, Mission Support Division, Director of Staff, Air Force Civil Engineer Center, San Antonio, Texas (hereby “AFCEC”) (2015 – 2018); Deputy Director of Staff, AFCEC (2016); Program Manager Team Lead, AFCEC (2009 – 2015); Subject Matter Specialist, Air Force Center for Engineer and Environment, Restoration Technical Division, San Antonio, Texas (2008 – 2009); Chief of Restoration, 37th Civil Engineering Squadron, Lackland Air Force Base, Texas (2005 – 2008); Senior Environmental Engineer, AMEC Earth & Environmental and ENTRIX, Atlanta, Georgia (2000 – 2005); Research Associate, National Research Council (1999 – 2000); and Hydrogeologist, Guajarat Water Supply Board, India (1990 – 1991). Dr. Ravichandran earned his PhD in Environmental Engineering from The University of Colorado (1999), his MS in Chemical Oceanography from Texas A&M (1994), and his MSc from the University of Baroda, India (1990).

3. Summarize, or include a copy of, the direct testimony each technical witness:

A copy of the technical witnesses direct testimony is attached, as well as his resume, and the proposed amendments to 20.4.2 and 20.4.3 NMAC. Dr. Ravichandran provide testimony that will last approximately one hour, depending on the duration of cross-examination and any response to rebuttal testimony.

4. List of exhibits:

DoD submits the following exhibits:

- | | |
|---------------|--|
| DoD Exhibit 1 | Written Testimony of Dr. Mahalingam Ravichandran and his Proposed Reasons for Amendments to 20.4.2 and 20.4.3 NMAC |
| DoD Exhibit 2 | Resume of Dr. Mahalingam Ravichandran |

5. Reservation of Rights

The Department of Defense reserves the right to call any other person to present original and/or rebuttal testimony in response to another notice of intent, testimony, exhibit or public comment filed in this matter or to any testimony or exhibit offered at the public hearing.

WHEREFORE, DoD respectfully requests that the Environmental Improvement Board accept this Notice of Intent to Present Technical Testimony of behalf of the Department of Defense.

DATED this 2nd day of December, 2019.

Respectfully submitted,



Jodi M. Velasco, Major, USAF
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CERTIFICATE OF SERVICE

I hereby certify that on December 2, 2019, a true and correct copy of the foregoing “Notice of Intent to Present Technical Testimony” along with DoD Exhibits 1 -2 were served to the following:

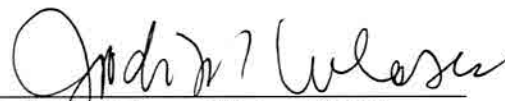
Via Federal Express and electronic mail:

Mr. Cody Barnes*
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Administrator, Environmental Improvement Board
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Via electronic mail:

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Counsel for New Mexico Environment Department

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Jodi M. Velasco, Major, USAF
Regional Counsel
AFLOA/JACE-ER

**STATE OF NEW MEXICO
BEFORE THE ENVIRONMENTAL IMPROVEMENT BOARD**

**IN THE MATTER OF PROPOSED
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EIB 19-35 (R)

DEPARTMENT OF DEFENSE

WRITTEN DIRECT TESTIMONY OF MAHALINGAM RAVICHANDRAN

1 My name is Mahalingam Ravichandran. I am the Department of Defense Regional
2 Environmental Coordinator (REC) for United States Environmental Protection Agency (USEPA)
3 Region 6, Environmental Legislative and Regulatory Engagement Division of the United States
4 Air Force Civil Engineer Center, San Antonio, Texas. I am presenting this written testimony on
5 behalf of the Department of Defense (DoD). As the DoD REC, I am responsible for, among
6 other things, monitoring and reviewing proposed regulations and regulatory proposals to
7 determine the impact to DoD operations and coordinating with DoD components to develop and
8 communicate DoD positions to regulatory agencies on behalf of DoD. I received a Doctorate in
9 Environmental Engineering from the University of Colorado in 1999, a Master of Science in
10 Chemical Oceanography from Texas A&M University in 1994, a Master of Science in Applied
11 Geology from MS University of Baroda in 1990, and a Bachelor of Science in Geology from
12 Presidency College in 1986. My experience, duties and responsibilities are outlined in my
13 resume, which is attached to my testimony as DoD Exhibit 2. As demonstrated in my resume, I
14 have worked in the environmental field my entire career, nearly thirty (30) years. My resume
15 also identifies my specialized training, licenses/certificates, professional associations, awards,
16 honors, and accomplishments, as well as my duties representing the Air Force and DoD
17 throughout my career. My testimony will comment on Petitioner's proposed amendments to the
18 Hazardous Waste Permit and Corrective Action and Annual Hazardous Waste Fees Regulations.
19 Petitioner proposes to revise the Hazardous Waste Permit and Corrective Action Fees
20 at Section 20.4.2 NMAC and the Annual Hazardous Waste Fees at Section 20.4.3 NMAC. As
21 proposed, New Mexico Environment Department's (NMED) changes include 1) an increase in
22 certain fees for treatment, storage, and disposal of hazardous or corrective action; 2) addition of

1 new documents for review; and 3) increase in review times for documents submitted to NMED's
2 Hazardous Waste Bureau (HWB) for review.

3 Department of Defense has several facilities in New Mexico with hazardous waste
4 permits and ongoing corrective actions that will be impacted by the proposed changes in
5 regulations. These include: Cannon Air Force Base, Fort Bliss, Fort Wingate Depot Activity,
6 Holloman Air Force Base, Kirtland Air Force Base, Melrose Air Force Range, and White Sands
7 Missile Range. Currently DoD pays several million dollars in fees each year to the hazardous
8 waste program, and the net impact for DoD installations from proposed changes is estimated at
9 approximately \$2-3M additional cost each year.

10 Department of Defense sincerely appreciates NMED's efforts to actively engage the
11 regulated community in the rule-making process through multiple conference calls, emails, and
12 public meetings from February 2019 until August 2019. In addition, we acknowledge and
13 appreciate the fact that NMED has addressed some of DoD's comments submitted in April 2019,
14 and made some clarifications in the revised regulations.

15 As stated in 20.4.2.6 NMAC, the required fees are to "*meet necessary expenses in the*
16 *administration and operation of the state hazardous waste program.*" DoD fully supports paying
17 reasonable fees for the services provided. Fee regulations were last updated in August 2006, and
18 DoD understands the necessity to update fee structure to account for cost increases since 2006.
19 However, DoD is concerned with the justification provided for the magnitude of increase of fees
20 (300-400% increase in some cases), and proposed increase in review times for some documents
21 by as much as 1-2 years.

22 NMED discussed some of the changes in regulations as well as the basis for
23 calculating revised fee during a webinar on May 15, 2019, and explained that the fee changes

1 were calculated based on ten-year unit cost history that NMED has been tracking. However,
2 they did not provide detailed justification for each changes in regulations, detailed basis of how
3 the hourly rate was calculated, or detailed records of review times by site until November 20,
4 2019, as part of NMED's Notice of Intent to Present Technical Testimony. In other words,
5 NMED provided their supporting documentation for the changes just six (6) working days before
6 the technical testimony from interested parties is due to the Board on December 2, 2019.
7 Therefore, DoD did not have adequate time to review hundreds of pages of supporting
8 information provided by NMED in order to respond fully at this time. Thus, DoD's position and
9 this testimony is based only a preliminary review of the NMED-provided data. After DoD has
10 had adequate time to perform a detailed review of NMED's supporting documentation and had
11 the opportunity to discuss such information with the State and others, we will likely need to
12 amend our testimony and positions in this proceeding. If proper review and communications are
13 not possible within the time before the hearing, DoD may need to request the hearing be delayed.

14 Based on our preliminary review, it is our understanding that the fee changes were
15 calculated based on ten-year unit cost history that NMED has been tracking, and new fees were
16 calculated by multiplying hourly rate by the average number of hours it took to review
17 documents. The hourly rate of \$94.44/hr is based on total operating cost for the Bureau divided
18 by the number of Full Time Equivalents (FTEs) in the Bureau. As mentioned previously, DoD
19 did not have sufficient time to evaluate the "Hourly Rate Cost Basis" provided by NMED in their
20 Notice of Intent on November 20, 2019, and did not have an opportunity to seek clarification
21 from NMED. However, a preliminary review of publicly available information indicates that the
22 average hourly salary for a mid-level environmental scientist in NMED is in the range of \$25-
23 30/hr, which suggest that the indirect cost is between 215-277% of base salary (to arrive at the

1 \$94.44/hr), which seems excessive. Once DoD has an opportunity to review the “Hourly Rate
2 Cost Basis” data provided by NMED in their NOI, DoD may request additional data or
3 clarification from NMED.

4 The second factor that affects the fees is the average review times (labor hours) used in
5 fee calculations. NMED has stated that revised fees were calculated based on the actual time it
6 took staff to review documents, tracked over 11-year time period (July 2007 through June 2018).
7 We believe the overall approach may be reasonable, and appreciates NMED’s efforts in tracking
8 and using the data. However, our preliminary review reveals that based on our experience, some
9 of the past labor hours are excessive, and the proposed changes that would be promulgated as a
10 result of this proposed rule change are thus based on what may be objectively considered
11 excessive labor times. For example, it took an average of 1,069.12 hours (>6 months of full time
12 effort) for a “Class 3” permit modification, average of 418.2 hours (>2 months of full time effort)
13 for a “Class 3 Petition for Corrective Action Complete Review/Petition for No Further Action”,
14 and an average of 610 hours (nearly 4 months of full time effort) for reviewing a “Corrective
15 Measures Study Report/CM Evaluation”. In one case, the Class 3 Petition for No Further Action
16 took 1,920.75 hrs (more than one full year of a staff’s time). These are just few examples
17 presented here to illustrate our concerns. While DoD is unable to verify the accuracy of these
18 data or the reasons for such a long review times, they seem highly unreasonable. Based on the
19 experience of our professional staff who also review documents before submitting to regulatory
20 agencies, as well as our regulatory partners in other States who review similar documents, review
21 periods for these types of documents are typically in the range of 40-80 hours, and perhaps 160
22 hours at complicated sites. Further information supporting our position will be submitted later in
23 the proceeding.

1 We find that the current review times in 20.4.2. NMAC are already some of the
2 longest in any of the States and delays the protection of the environment. For example, where
3 DoD has entered into Federal Facility Agreement (FFA) with EPA and other States, the review
4 period for the equivalent of “Corrective Measures Study Report” or “Corrective Measures Study
5 Report with Risk Assessment” (Table 5) is 60 days each, compared to 480 days in New Mexico.
6 In fact, where there is an FFA, the documents in Table 5 of 20.4.2 NMAC have no more than a
7 60-day review period. Similar review periods of 30 days – 60 days are typical in other States as
8 well. NMED has now proposed to increase review periods even further. For example, review
9 times for “Land Disposal” documents has increased from 360 days to 1080 days (3 yrs); post
10 closure documents from 360 days to 720 days (2 yrs); Subpart X permits from 360 days to 720
11 days (2 yrs); and, Class 3 Permit Modification from 360 days to 540 days (1.5 years). So, instead
12 of improving review times, these proposed changes include a massive expansion under these
13 proposed rules. NMED may claim that actual review times may be less than the review times in
14 the proposed changes. But, in our experience working with regulators, government review rarely
15 is completed before stated deadlines.

16 DoD is concerned that increasing the review times by as much as 1-2 years for first
17 draft, and potentially additional 1-2 years for subsequent revisions, will further delay the
18 environmental cleanup and our efforts to protect human health and the environment. In addition,
19 these excessively long review times also significantly affect DoD’s ability to get funding, and
20 execute the work under a single contract. For example, 10 USC §2304a requires that any
21 contract awarded in current fiscal year be completed within 5 years from award date. When
22 there are multiple documents needing regulatory review and approval before cleanup at a site can
23 begin, taking 1-2 yrs for obtaining a single permit, or 6 months to a year for a single approved

1 work plan or a report delays cleanup of the environment, and prevents DoD from achieving
2 cleanup goals mandated by Congress. As stated in our earlier letter, DoD believes that additional
3 funds from fee increase should allow the State to hire additional staff leading to reduced, and not
4 increased, review times for documents.

5 We encourage NMED to make the document review process more efficient. This can
6 include: changing rules so that facilities can submit fees concurrently with the submittal of
7 documents for review (currently, NMED has up to 60 days from receipt of documents to invoice,
8 and review period doesn't start until after the payment is received); conducting "on-board"
9 review of work plans and reports with NMED staff that can expedite review of documents;
10 having recurring partnering meetings with major facilities to discuss status and priority for
11 document review; entering into Defense State Memorandum of Agreement (DSMOA) with all
12 DoD facilities (as 43 States currently have) that funds expedited review of documents; and
13 streamlining permitting processes similar to neighboring states such as Texas.

14 Thank you for your consideration. This concludes my written testimony.

Mahalingam Ravichandran

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 San Antonio, TX 78258
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 Work Fax: 210-395-1994
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 2261 Hughes Ave., Ste. 155
 Lackland AFB, TX 78236
 (210) 395-8783; DSN 969-8783
 mahalingam.ravichandran@us.af.mil

EXPERIENCE/WORK HISTORY

DoD Regional Environmental Coordinator, Environmental Directorate (Feb 2018 – Present)
 Air Force Civil Engineer Center, San Antonio, TX, 40 hrs/week GS-0801-14

Supervisor: Mr. Roger Wilkson, Chief, Legislative and Regulatory Engagement Division,
 AFCEC/CZP, DSN 969-8019, Roger.Wilkson@us.af.mil

- Designated by SAF/IEE as the DoD Regional Environmental Coordinator (REC) for USEPA Region 6 (+5 States), and Air Force REC for Region 5 (+6 States) per DoDI 4715.02
- Monitored/reviewed new regulations and legislations, determined impact to DoD/AF missions, coordinated with DoD components, developed/communicated DoD positions
- Established new and grew existing relationships with State and Federal regulatory agencies. Educated/informed DoD/AF positions to Senior Leadership at State & Federal agencies on controversial and high visibility issues and challenges
- Initiated, facilitated several partnering meetings at State and Regional level, and opened opportunities for collaboration between DoD Installations and regulatory agencies, and orchestrated training events to Installation personnel on new/changes in regulations
- Articulated AF/DoD positions to regulatory partners on emerging contaminants (e.g., PFAS)
- Co-chaired Texas Environmental Partnership (TXEP) meetings with Texas regulators and EPA6, and assisted with permit renewals, Notice of Violation, and negotiation of fines
- Reviewed/advocated legislations in Texas, Oklahoma, New Mexico, and other States and partnered with Texas Military Preparedness Commission, and other similar organizations to minimize impact to Air Force training mission (e.g., wind mills, encroachment)
- Assisted DoD installations to reduce the number of enforcement actions, and fines/penalties
- Informed stakeholders (OSD, SAF/IEE, AFCEC, Installations, Service Components) on changes in regional and State regulations and legislations

Division Chief, Mission Support Division, Director of Staff (DSM) (Nov 2015 – Feb 2018)
 Air Force Civil Engineer Center, San Antonio, TX, 40 hrs/week GS-0801-13

Supervisor: Mr. Robert Backlund, Deputy Director, Director of Staff, AFCEC/DS
 DSN 969-8001, Robert.Backlund@us.af.mil

- Supervised a team of nine (9) civilians and eight (8) contractor personnel. Managed diverse Mission Support functions for a 1,900-person organization, directly supporting Tier II SES Director. Responsibilities include: Strategic Planning, Corporate Board/Governance, Workflow, Awards, Training, Facility and Space Management, Protocol, FOIA/Knowledge

- Operations, Support Agreements, AF Civil Engineer/AFCEC/HQ AFIMSC History, Commanders Inspection program (MICT), Continuous Process Improvement, and AFSO21
- Initiated and led hiring actions for six (6) new employees for Mission Support Division, including re-classification, Core Personnel Document (CPD) revision, scoring of resumes, conducting interviews, and in-processing and orientation of new employees. Led Quarterly Newcomers Orientation for all newly arriving AFCEC employees at JBSA
 - Developed performance standards, provided interim feedback, and completed annual appraisals for employees. Resolved employee complaints, administered minor disciplinary actions, mentored employees in career development, and recognized performance w/ awards
 - Supported AFCEC Directors in the Human Capital Management Board (HCMB)
 - Represented Director of Staff (DS) on Financial Management Board (FMB). Developed annual requirements, spend plan, tracking, execution, and contract action for Training, Facilities, IT Support, and A&AS Support. Provided budget guidance for DS personnel
 - Assisted AFCEC/CL on matters related to Equal Employment Opportunity (EEO) office discrimination investigations and disciplinary actions
 - Led business-process reengineering (BPR) teams to eliminate redundancies, realign resources and remove barriers to efficiency during the integration of AFCEC into HQ AFIMSC. Recommended and implemented key process improvements in work flow management, facility & space management, and Awards program
 - Supported Director's organizational transformation initiatives, including AFCEC 2.0, AFIMSC 2.0, PAD 14-04 P-Plan, Primary Subordinate Unit (PSU) Functional Analysis etc. Participated in Corporate Boards. Identified high risk areas for mission failure due to lack of manpower and resources, and supported Integrated Project Teams (IPTs) to develop solutions
 - Awarded and managed Advisory & Assistance Services (A&AS) contracts and Strategic Advisory Group (SAG) support contract comprising of retired SES/GO-level experts. As Primary Approving Official (AO) on six (6) Government Purchase Cards (GPC), enabled Civilian training and facility repairs
 - Provided oversight for the Workflow cell, facilitated timely/accurate completion of hundreds TMT/SOCCER tasks to internal and external stakeholders including HQ AFIMSC, AFMC, HAF/SAF, OSD, and Congress. Assisted Director w/ review/staffing of support agreements
 - As Research Panel Chair for AFCEC-sponsored research with AFIT, US Air Force Academy (USAFA), and Air Force Civil Engineer (A4C), identified, prioritized, and advocated topics for research that benefited students while leveraging their capability to advance research conducted by the AFCEC Subject Matter Experts (SMEs)
 - Facility Engineering – Addressed facility repairs/upgrades for AFCEC JBSA and Tyndall. Led a team to address critical occupational health and safety concerns with host agencies (JBSA 502nd CE and Port San Antonio). Chaired cross-functional teams, identified alternate facilities, presented options to Senior Leadership at AFCEC and HQ AFIMSC. Ensured the facility repairs and hundreds of customer complaints on facilities were resolved satisfactorily.
 - Emergency Management – Coordinated/facilitated emergency response for AFCEC-JBSA facilities. Commanding Officer Representative for personnel accountability and provided 100% accountability for natural disasters – both exercise scenarios and real world situations

Deputy Director of Staff (Temporary Promotion 120 days)
Air Force Civil Engineer Center, San Antonio, TX, 40 hrs/week

(May 2016-Sep 2016)
GS-0301-14

Supervisor: Mr. Robert Backlund, Acting Director, Director of Staff, AFCEC/DS
DSN 969-8001, Robert.Backlund@us.af.mil

- In addition to the duties performed above as “Chief of Mission Support Division”, assisted the Director of Staff (DS) with public affairs, human resources management, and IT support. Provided “front-office support” to all Directors (GS-15s and Colonels)
- Led AFCEC’s Civilian Development Education (CDE) for AY17 and AY18, assisted the interim board in review, stratification, and Senior Leader (SES) endorsement of packages

Program Manager (Team Lead), AFCEC
Environmental Restoration Division, San Antonio, TX

(Dec 2009 – Oct 2015)
GS-0801-13

Supervisor: Mr. James Gonzales, Branch Chief, Restoration Division, AFCEC/CZRE
James.Gonzales@us.af.mil

- Led a team of 5 Civilians, 5 on-site contractors, and ~20 environ. cleanup contractors
- Hand-picked by AF Senior Leadership to lead one of the most contested and politically-sensitive environmental cleanup program in the AF, with OSD & SECAF-level involvement and congressional/GAO visibility
- Successfully negotiated an interagency agreement with EPA following 5+ years of intense negotiations; provided strategic support to a cross-functional team of AF (SAF/IEE, A7C, AFCEC/CL, AFLOA, and AF/GCN), OSD, EPA and State of Florida
- Directly briefed sensitive issues to all levels of AF and DOD leadership, including Deputy under Secretary of Defense (DUSD/I&E); articulated complex issues to SAF/IE, A4/7, and A7C that required minimal changes during coordination process
- Prepared sound technical rebuttal and alternate language that substantially improved the final report from Government Accountability Office (GAO) that was highly critical of AF & DOD for the cleanup of lead in closed ranges, leading to high-level interest/scrutiny from Congress
- Developed overall strategy, programming and execution of two large (\$65M) Performance Based Remediation (PBR) contracts for Tyndall AFB....one of the first of its kind for AF
- In addition to PM duties, was selected by AF Management as the Remedial Project Manager (RPM) for the high-visible Tyndall restoration program. In this role, facilitated negotiations between regulators and PBR contractors, and articulated AF position on controversial technical issues (e.g., lead pellets ingestion by children at Tyndall Elementary School) that could affect similar sites across AF/DOD and drive cost
- As the Team Lead on annual Program Requirements Development (PRD) for multiple installations across several MAJCOMs, developed audit-ready DoD’s End to End (E2E) lifecycle cost. Responsible for Planning, Programming, Budgeting, and Execution (PPBE) of restoration program at Tyndall AFB, Hurlburt Field and Eglin AFB. As the Eastern Branch (CZRE) lead on FY16 PRD Team, provided strategic support and coordination on programming for all Eastern Region installations
- Averted contractor lawsuit and premature termination of PBR contract due to FFA-driven changes and regulatory delays, by successfully negotiating a contract modification while improving contractor deliverables. Provided assistance to other at-risk PBRs; recognized by SAF/IE for outstanding contribution to AF-wide PBR efforts

- Developed and supervised Partnering and Strategic Risk Communication project supporting over 25 teams. Fostered team building and collaboration between the AF managers and Federal and State regulatory agencies that advanced AF interests across multiple MAJCOMs

Subject Matter Specialist (SMS), AF Center for Eng. and Environment (Jun 08 – Dec 09)
Restoration Tech. Division (AFCEE/TDV), San Antonio, TX GS-0801-13

- AF Lead on DOD Panel - advocated AF research needs in the DOD-funded Environmental Technical Committee (ETC) R&D programs ESTCP and SERDP; reviewed hundreds of proposals, and leveraged \$32M in additional funding for projects that are technically sound
- Co-lead on the AF Technology Transfer Program - Selected and implemented innovative and sustainable technology demonstration projects to address emerging contaminants such as perfluorinated compounds (PFOA/PFOS); presented results in international conferences
- As the AF Military Munitions Response Program (MMRP) SMS, led peer review team for several installations and identified innovative cost saving approach of soil reuse as the selected remedy, saving nearly \$1M
- Provided Technical Assistance Visit that prevented delay on a critical Privatized Housing project, and developed recommendations for optimization for a cost savings of \$5.8M
- As the Asst. Director and Chair of Technical Sessions for the 2009 Air Force ESOH training symposium, worked effectively with five MAJCOMs, facilitated 70 technical presentations, and developed a curriculum that aligned with AF transformation initiatives and priorities

Chief of Restoration, Restoration/NEPA Program Manager (Sep 05 – Jun 08)
37th Civil Engineering Squadron, Lackland AFB, TX GS-0819/1301-13

- Chief of Restoration program and Remedial Project Manager (RPM). Led a team of seven project managers during a time of high turn-over and transition; accelerated cleanup of env. sites at Lackland through fence-to-fence contracts at >\$25M
- Saved \$1.8 million on a skeet range cleanup project by reusing the treated soil to build safety berms at active firing ranges instead of off-base disposal, which advanced AF mission and readiness - recognized by the Installation Commander and AF-wide IDEA Cash Award, and nominated for the “Innovator of the Year” award
- Diffused media crisis – Tactfully addressed community and media concerns on potential impact to Leon creek from leaking wastes at landfill sites. Prepared fact sheets; proposed, organized, and conducted tour of cleanup sites to media personnel, and interviewed on several San Antonio TV stations/newspapers; resulted in positive media coverage of the story
- As NEPA program manager (Sep 2015 – Sep 2016), provided program oversight and execution for a number of high-visibility National Environmental Policy Act (NEPA) projects, including Military Working Dogs Expansion, Family Housing, and Joint Forces Training at Camp Bullis. Addressed public concerns with noise impacts from C-5 Aircraft missions at Lackland AFB

Senior Environmental Engineer, AMEC Earth & Environmental (Aug 00 – Aug 05)
and ENTRIX, Atlanta, GA

- Supervisor and field team leader for nine (9) staff - organized, planned and executed the field sampling effort in adverse weather conditions in Mississippi River, for flawless completion

- Environmental Consultant - directed the cradle-to-grave completion of ecological and human health risk assessment of a Superfund site near St Louis, MO
- Conducted computer modeling of migration of toxic metals and radioisotopes in soil, groundwater and surface water at Massachusetts Military Reservation (MMR)
- Authored and published guidance documents on Clean Water Act regulations for mercury and PCBs. Provided Engineering consultation services for Power companies including NPDES Permit support, and negotiations with USEPA
- Tracked, assessed and communicated emerging regulatory requirements and impact to clients, and successfully negotiated industry position with USEPA and States

Research Associate, National Research Council (NRC) (Feb 99 – Aug 00)
 US Environmental Protection Agency, Athens, GA

- Initiated innovative basic research to decipher the role of sunlight on the fate of mercury in surface water bodies, and presented results at international scientific meetings

Hydrogeologist, Gujarat Water Supply Board, India (April 90-Aug 91)

- Identified suitable sites for groundwater well installation for potable water supply using geological and geophysical surveys. Conducted pump tests and collected groundwater samples for the analysis of water quality parameters. Monitored and mapped groundwater quality on a regional basis. Responded to state-level concerns on drinking water supply, quality and availability. Supervised drilling crew and support staff on the team

EDUCATION

- | | | | |
|--|------------|---------------------------|--------|
| • University of Colorado, Boulder, CO | PhD | Environmental Engineering | (1999) |
| • Texas A&M Univ., College Station, TX | MS | Chemical Oceanography | (1994) |
| • MS University of Baroda, India | MSc | Applied Geology | (1990) |
| • Presidency College, India | BSc | Geology | (1986) |

PROFESSIONAL MILITARY EDUCATION

- | | |
|---|----------------|
| • Air Command and Staff College (Distance Learning) | 2013 |
| • Air War College (Distance Learning) in progress | (ECD Dec 2020) |

CERTIFICATION

- | | |
|--|------|
| • Qualified Environmental Professional (QEP)
(Institute of Professional Environmental Practice) | 2009 |
|--|------|

DEFENSE/GOVERNMENT SPONSORED TRAINING

- | | |
|---|----------|
| • DoD Executive Leadership Development Program (ELDP) – 2019 Cohort | Jun 2019 |
| • Air Force Organizational Leadership, OPM (Potomac, MD) | Nov 2017 |
| • Transformational Journey from Gettysburg - Leadership Training | Sep 2017 |
| • USAF Supervisors Course | Feb 2016 |

- Civilian Personnel Management Course Feb 2016
- Alamo Federal Executive Board Leadership Training 2014-2015
- Collaborative Leadership – OPM (MDC, West VA) Jun 2012
- Contracting Officer Representative (COR) – DAU Jul 2014

AWARDS, HONORS, ACCOMPLISHMENTS

- USAF Meritorious Civilian Service Award - 2018
- Finalist – 2012 “USAF Chief of Staff Team Excellence Award” for PBR efforts as member of the “Integrated Performance Based Remediation Team”
- SAF/IE Award for “Outstanding Contribution to the PBR Effort” – Dec 2011
- USAF “IDEA” Suggestion Cash Award (\$10,000) – Dec 2008
- AETC nominee for the “Innovator of the Year Award”, IDEA Program – Jan 2009
- National Research Council Postdoctoral Fellowship, USEPA, 1999-2000
- Outstanding Contribution Award, Volunteer for Science, US Geol. Survey – 1998
- Outstanding Student Paper Award, American Chemical Society – 1998
- Published ten (10) peer-reviewed journal articles in prestigious international journals such as Environmental Science & Technology, with some of the highest citations in field. Presented dozens of oral/poster presentations in National and International Conferences

VOLUNTEER ACTIVITIES

- Volunteer – Kairos Inside Team (2019)
- Volunteered as one of three AF SMEs on a DOD Functional Community Competency Modeling Initiative for Physical Science Technician competency model (1311 series). Provided major input that shaped the development and validation of future needs of DOD in 1311 series (Jul 2015)
- Panelist on the DOD General Thomas D White Award nomination panel (2011)
- Volunteered as a judge for the nomination packages for the 2015 Federal Recognition Awards of the Alamo Federal Executive Board (Jun 2015)
- Texas Science & Engin. Fair – volunteered as a Judge, encouraged and motivated Middle and High School students to pursue science & engineering careers (Mar 2015, Mar 2017)
- Volunteer at local Elementary School as “Watch DOGS” (Dads of Great Students), 2017