October 21, 2016

Lexington Fayette Urban County Government
200 E Main Street
Lexington, KY 40507

RE: MT2 SOLE SOURCE JUSTIFICATION FIRING RANGE LEAD MAINTENANCE
LEXINGTON FIREARMS TRAINING FACILITY

To Whom It May Concern:

This letter provides a sole source justification for contracting MT2, LLC to support the Lexington Police Department (Department) by performing firing range lead maintenance services at the Lexington Firearms Training Facility Firing Range located at 4300 Airport Road in Lexington, Kentucky. MT2's project objectives are to provide the Department with firing range lead maintenance services that will support mitigating potential physical, occupational, and environmental hazards associated with high concentrations of lead in the backstop berms at the range. MT2 will accomplish the required tasks in compliance with OSHA, USEPA, state, and NRA recommended environmental Best Management Practices (BMPs).

MT2's proven record of performance has demonstrated our expertise implementing environmental firing range services at over 1,000 firing ranges nationwide including over 300 law enforcement ranges such as NYPD Rodman's Neck, Orange County Sheriff's Department (FL), and Richmond Police Department (VA). MT2 will provide unique, one of a kind additional value as a Sole Source contractor based on the following exclusive factors:

- ✓ **MT2 is recognized as the nation's leading provider of firing range lead recovery/recycling services**. MT2 has performed lead removal and recycling at over 1,000 ranges nationwide using a variety of unique and MT2 proprietary lead separation and pneumatic finishing technologies to remove and recycle over 12,000,000 lbs. of lead; crediting over $4,000,000 to range owners from lead recycling. **MT2 maintains exclusive contracts with lead recyclers nationwide to ensure top dollar is returned for recycled lead**. Recent lead recovery projects include the removal of over 620,000 lbs at NYPD Rodman's Neck, 270,000 lbs at the Mississippi Law Enforcement Officer Training Academy Range, and 1,200,000 lbs at the Markham Park Target Range (FL).
- ✓ **MT2's Liability Defender Compliance & Performance Promise:** Your choice of a lead reclamation contractor could expose your range to EPA hazardous waste fines up to $10,000 per day and potential criminal charges. A range owner ALWAYS retains responsibility for ALL lead waste and materials derived from their range even if their chosen contractor is chosen entity that improperly handles, improperly transports, or improperly disposes of the lead waste.

MT2 has never received an EPA violation, penalty or fine, and we have never left a project uncompleted. ***Our unique promise to you***: MT2 is committed to stand with you and defend your firing range from the liability of lead hazards. We maintain substantial net worth and $9,000,000 environmental and pollution liability coverage to protect range owners from claims or occurrences of lead hazard violations, penalties and cleanup expenses.

- ✓ MT2 utilizes patented and proprietary ECOBOND® technology to treat lead-impacted soils. ECOBOND® has been previously approved by both the US EPA and state regulatory agencies nationwide. ***MT2 is the exclusive provider of ECOBOND® lead and metals stabilization reagent***. ECOBOND® is proprietary and patented to permanently reduce hazards due to leaching of toxic metals in the environment and dramatically reduce disposal costs of metals-contaminated soils and other materials. MT2 has effectively treated over 10,000,000 tons of lead/metals contaminated soils at over 1,300 sites nationwide. At each, lead/metals leachability was dramatically reduced and treated soils were rendered "non-hazardous" per EPA Toxicity Characteristic Leaching Procedure (TCLP) regulatory levels. Additionally, ECOBOND® also meets and exceeds all regulatory requirements for Synthetic Precipitation Leaching Procedure (SPLP) and USEPA Multiple Extraction Procedure (MEP) Method 1320.

  ECOBOND® chemically converts the lead in soils and has be shown to be highly durable at police training ranges such as NYPD Rodman's Neck, North Las Vegas Police Department, and Seattle Police Department, among many others. ECOBOND®'s demonstrated success includes:

  - ECOBOND® treated soil remains soil-like, in original condition; other additives such as Portland Cement create cement-like soils that can cause drainage and other issues
  - ECOBOND® has a low add rate (typically 0.5% - 2%) that will not significantly change the range soil-like characteristics for re-use of processed soils in maintaining proper berm configuration and grade
  - ECOBOND® treated soils contain extremely stable compounds that virtually eliminate the leaching of lead to the environment

MT2 has been contracted under sole source contracting by numerous Federal, State and Municipal Government Agencies (see previously submitted Sole Source Documentation). By contracting MT2 sole source, the Department receives the proven, experienced MT2 team and the exclusive technology provider of ECOBOND®.

Please contact me to discuss this submittal or your project in further detail at 303-456- 6977 or E-mail: jbarthel@mt2.com.

Sincerely Yours,

James M Barthel; President and CEO

Attachments: Overview of ECOBOND® Technologies

MT2 maintains a broad portfolio of patented and proprietary chemical metals stabilization processes; known as ECOBOND® that provide permanent stabilization of all heavy metals. The MT2 processes are previously approved by the US EPA and are non-hazardous. The resulting treated soils contain extremely stable metal compounds that virtually eliminate the leaching of metals to the environment. The strength and effectiveness of the stabilization has been verified using the EPA's TCLP test parameters and Multiple Extraction Procedure (MEP) tests.

MT2 ECOBOND® ADVANTAGE

- **Lower Cost**: Typically 30%-50% lower cost
- **Reduction of Environmental Liability**: Significantly reduces potential of long-term liabilities
- **Proven Technology**: Technology previously approved by EPA and state regulators with guaranteed, field validated reliability
- **Best Available Technology**: Permanent and irreversible chemical process, strength and durability to 1,000 years verified by EPA approved testing

Advantages of ECOBOND® chemical stabilization also include its robust capability and ease of application. The technology can be applied in a wet or dry form and can be used to stabilize metals in- situ or ex-situ. These varied applications make it ideal for use at a wide range of metals contaminated sites. At some sites the technology can be surface applied and mixed into soil in its dry form. At other sites the technology can be sprayed in its wet form onto the contaminated material in a topical fashion. In addition to the technical and application advantages, the cost of utilizing chemical stabilization to treat heavy metals contamination is attractive. By being able to treat metals contamination to EPA RCRA or Universal Treatment Standards (UTS), stabilized waste can often be left on-site rather than transported off-site to a hazardous landfill. The disposal cost savings for stabilized metals can often be measured in the hundreds of dollars per ton.

Table 1 MT2 Metals Treatment Results (TCLP)

		Pre Treatment TCLP	Post-Treatment TCLP	Regulatory Standards	
Waste Stream	Metals	(ppm)	(ppm)	RCRA (ppm)	UTS (ppm)
Mill Tailing	As	2,200.0	1.030	5.0	5.000
Sludge	Cd	160.0	0.100	1.0	0.110
Mill Tailing	Cr	14.0	<0.050	5.0	0.650
Industrial Site	Ba	249.0	0.030	100.0	210.0
Industrial Site	Pb	980.0	0.250	5.0	0.750
Firing Range	Pb	977.0	0.180	5.0	0.750
Mine Tailing	Zn	108.0	2.000	NA	4.300
Mill Tailing	Se	190.0	0.890	1.0	5.700
Chemical Waste	Hg	500.0	0.070	0.2	0.025

TCLP = Toxicity Chemical Leaching Procedure

Table 2 MT2 Lead (Pb) Treatment Results (SPLP)

Project Location	Metal	Pre Treatment SPLP (mg/L)	Post-Treatment SPLP (mg/L)	Regulatory Standards RCRA (ppm)	UTS (ppm)
Florida Soils/Sediment					
Sample 1	Pb	0.17	0.0140	5.0	0.750
Sample 2	Pb	0.11	BDL	5.0	0.750
Sample 3	Pb	4.70	0.0130	5.0	0.750
Massachusetts Inland Soils/Sediment					
Sample 1	Pb	3.30	0.0530	5.0	0.750
Sample 2	Pb	3.30	0.0550	5.0	0.750
Sample 3	Pb	3.30	0.1400	5.0	0.750
Utah Soils					
Sample 1	Pb	3.79	0.0800	5.0	0.750
Sample 2	Pb	2.17	0.0900	5.0	0.750
New York Soils/Sediments					
Sample 1	Pb	1,040	0.0184	5.0	0.750
Sample 2	Pb	1,090	0.0330	5.0	0.750
Sample 3	Pb	2,220	0.0104	5.0	0.750

SPLP = Synthetic Precipitate Leaching Procedure

Heavy metals contamination can be found associated with spent battery recycling sites, electroplating facilities, process sludge, military sites, firing ranges, brownfields redevelopment, lead based paint coated buildings and structures, and associated with mining activities. Our services and technologies have been applied to project work for the following types of commercial, industrial and government clients:

Commercial and Industry Applications: mining and smelting operations, battery recycle and disposal sites, military and private firing ranges, brownfields/real estate development, process wastes and sludge, and electric arc steel manufactures.

Government Agencies and Programs: Environmental Protection Agency, Department of Energy, Department of Defense, Bureau of Reclamation, U.S. Army Corps of Engineers and State Environmental and Health Agencies.

MT2's ECOBOND® process utilizes a combination of proprietary materials that are nature's best stabilizers of leachable metals. ECOBOND® compounds have extremely low Ksp (solubility potential) values indicating that it is virtually impossible to dissolve these metal complexes (Table 3). This technique has been used to stabilize heavy metals for a number of years and have proven superior to cementation and other methods that rely on increasing the alkalinity of the matrix to immobilize the metals. Unlike many stabilizing compounds, the MT2's reagents bond directly with metals and are not subject to long-term pH related deterioration.

Table 3 - Ksp (Solubility Potential) of Various Lead-Phosphate Minerals

Lead Species / Mineral Name	Formula	Log Ksp
Salt	NaCl	0.0*
Quartz	SiO_2	-4.0
Anglesite	$PbSO_4$	-7.7
Cerussite	$PbCO_3$	-12.8
Galena	PbS	-27.5
Fluoropyromorphite	$Pb_5(PO_4)_3F$	-71.6
Hydroxypyromorphite	$Pb_3(PO_4)_3OH$	-76.8
Plumbogummite	$PbAl_3(PO_4)_2(OH)_5H_2O$	-99.3
Corkite	$PbFe_3(PO_4)(SO_4)(OH)_6$	-112.6

**For comparison purposes*

The EPA's TCLP is one measure of the long-term stability of a treated waste because it simulates the leaching effect of water or acid that may come into contact with stabilized metals. To simulate a longer period of environmental exposure, the Multiple Extraction Procedure (MEP) test has been developed. The MEP test consists of multiple acid extractions and pH adjustments that are similar to the TCLP test. However, different leachates are used for each of ten separate extractions. It is estimated that each TCLP extraction simulates 100 years of stability and after ten MEP extractions, 1,000 years of metals stability are simulated. The durability of similar treated materials has been tested by numerous MEP tests and has been evaluated in the EPA's Superfund Innovative Technology Evaluation (SITE) program. The MEP test is just one of the tests that have been conducted to establish the long-term stability of chemically stabilized waste. See Table 4.

Table 4 - Example of Treatment Results using MEP Testing of MT2 Stabilized Lead Contaminated Soil

	Crooksville Lead Superfund Site	Crooksville Lead Superfund Site	Lead Paint Sand Blast Grit	Lead Paint Sand Blast Grit	Lead Paint Sand Blast Grit
Pre Treatment Lead TCLP	32	980	26	34	49
MEP Extraction Post Treatment					
#1 – 100 years	0.08	<0.05	<0.05	<0.05	<0.05
#2 – 200 years	0.14	0.13	<0.05	<0.05	<0.05
#3 – 300 years	0.21	0.05	<0.05	<0.05	<0.05
#4 – 400 years	0.13	0.06	0.13	0.23	0.08
#5 – 500 years	0.14	0.08	0.31	0.12	0.07
#6 – 600 years	<0.05	0.15	0.15	0.06	0.06
#7 – 700 years	0.16	<0.05	0.19	0.03	0.04
#8 – 800 years	0.25	0.18	0.19	0.05	0.06
#9 – 900 years	0.26	0.53	0.18	0.06	<0.05
#10–1,000 years	0.23	0.33	0.14	<0.05	<0.05
Average MEP Extraction	0.165	0.161	0.14	0.075	0.056

In summary, MT2's proprietary ECOBOND® technology has previously been approved by the U.S. Environmental Protection Agency as well as state regulators. ECOBOND® provides an advanced in situ and ex situ treatment for a wide variety of metals utilizing innovative methods with standard

equipment, converting RCRA hazardous waste into non-hazardous material. MT2's state-of-the-art technologies and experienced personnel provide clients with technical and field services producing substantial cost savings. MT2's ECOBOND® technologies are broadly applicable for chemical conversion and stabilization for:

- Soils, Silts and Sediments
- Process Waste and Sludges
- Firing Ranges/Shooting Ranges
- Lead Paint and Glass
- Mine/Smelter Sites
- Former Disposal Locations
- Brownfields Sites
- Battery Recycling Site

The advantages of ECOBOND® technologies and MT2 services include:

- Lower Cost: Typically 30%-50% lower cost than other alternatives
- Reduction of Environmental Liability: Significantly reduced potential of long-term liabilities through improved best management practices
- Eliminates Generation of Hazardous Wastes: No hazardous waste manifesting, substantial disposal cost reduction and reduced liability
- Proven Technology: Technology previously approved by EPA and state regulators in over seven (7) years of operations with guaranteed, field validated reliability
- Best Available Technology: Permanent and irreversible chemical process, strength and durability to 1,000 years verified by EPA approved testing.