



ENVIRONMENTAL
MONITORING AND
TECHNOLOGIES, INC.



EMT: Focused on Quality Dedicated to Customer Service

Providing economic, independent,
accredited analysis in a timely manner, for
electronic products .

September 16, 2003

environmental laboratory and testing services

water | soil | air | product | waste



- EMT is a large Environmental Laboratory, located in Morton Grove, Illinois.
- Analyze a variety of matrices by EPA Methodologies.
- Our analytical and quality systems are designed to withstand regulatory scrutiny.
- EMT has been analyzing samples for disposal suitability and characterization for over 15 years.



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- EMT is accredited to the standards set by the National Environmental Laboratory Accreditation Conference (NELAC). This is the only active national program that provides a defensible standard for quality systems and procedures. The NELAC standards are based on ISO/IEC Guide 17025, (formerly Guide 25) "General Requirements for the Competence of Calibration and Testing Laboratories", and contain the requirements of that standard along with additional environmental program requirements.

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- All methods used at EMT have gone through a validation process. This process, developed jointly with Motorola, is the only validated procedure to analyze electronic products for these purposes.
- EMT is regularly audited by the states of Illinois and Wisconsin, and has been certified by the US Army Corps of Engineers and USEPA for specific projects.



Independent Environmental laboratories vs. in-house R&D, or production laboratories.

- Our documentation procedures are designed to be legally defensible, and are regularly reviewed by environmental regulatory agencies.
- Independent 3rd Party analysis eliminates any perception of conflicts of interest.



- Over 20% of the samples analyzed in our laboratory are Quality Assurance samples. This includes blind and double blind samples, blanks, spikes, and duplicate samples.
- Samples submitted to EMT follow formal Chain of Custody procedures in shipment.



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EMT Chain of Custody Form



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8100 North Austin Avenue
Morton Grove, Illinois 60053-3203

Chain of Custody Record

847-967-6666
FAX: 847-967-6735
www.emt.com

Due Date: _____ COC #: _____

TURNAROUND TIME:
 RUSH
 _____ day turnaround
 ROUTINE

Company: _____ Address: _____ Phone #: (____) _____ - _____ Fax #: (____) _____ - _____ P.O. #: _____ Proj. #: _____ Client Contact: _____ Project ID / Location: _____		Sample Type: 1. Waste Water 4. Sludge 7. Groundwater (filtered) 2. Drinking Water 5. Oil 8. Other 3. Soil 6. Groundwater		Container Type: P - Plastic V - VOC Vial O - Other G - Glass B - Tedia Bag		Preservative: 1. None 4. NaOH 7. Zn Ace 2. H ₂ SO ₄ 5. HCl 8. Other 3. HNO ₃ 6. MeOH		Analyses  EMT USE ONLY EMT WORKORDER # _____					
Sample ID.	Sample Type	Container			Sampling					Preservation			
		Size	Type	No.	By	Date	Time	pH	Temp.	Field	Lab		
Relinquished By:	Date: - - Time: :	Received By:			Date: - - Time: :	EMT USE ONLY		Client Code:		<input type="checkbox"/> SAMPLE RECEIVED ON ICE <input type="checkbox"/> TEMPERATURE (Must be recorded if sampling was greater than 6 hrs. prior to sample receipt)			
Relinquished By:	Date: - - Time: :	Received By:			Date: - - Time: :	EMT Project ID.		Jar Lot No.		EMT SAMPLE RETURN POLICY ON BACK			
Relinquished By:	Date: - - Time: :	Received For Lab By:			Date: - - Time: :								

SPECIAL INSTRUCTIONS:

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How was the procedure developed?

- EMT originally approached by Motorola staff after review of other environmental laboratories.
- Motorola staff explained their best practice concept and we began a joint development process.
- EMT purchased equipment for preparatory procedure and devoted space and staff
- EMT tested hundreds of samples in the validation process, during which we developed expertise and problem solving capabilities in determining elemental material content.



Common analytical issues

- High levels of some elements (Al, Cu) cause interferences.
- Grinding process can be prone to contamination issues.
- Low level detections of some elements are of great concern.
- Decontamination and cleaning in between analytical runs.
- Disbelief of suppliers when levels of elements are not as expected.



How is the process structured?

- Motorola has published the procedure and contact information for EMT on its websites
- Suppliers contact EMT for pricing, scheduling, and sample shipment.
- Chain of Custodies available via internet
- After sample receipt and analysis, results are sent to supplier.
- Motorola does not have to be involved at all in this portion of process.



What are typical analytes?

After multi-stage sample reduction and homogenization procedure analysis includes, but is not limited to:

Metals including:

- Antimony
- Arsenic
- Barium
- Beryllium
- Cadmium
- Chromium (total & IV)
- Copper
- Gold
- Lead
- Nickel
- Phosphorus
- Selenium
- Silver
- Thallium
- Tin
- Titanium
- Zinc

Anions

- Chloride
- Bromide



- EMT and Motorola have developed a variation of this procedure to look specifically for lead in cables and cords in relation to the Proposition 65 settlement.
- We have also have routinely looked for other substances such as tantalum, Polychlorinated biphenyls (PCBs), and others.
- Currently beginning development of procedures for detection of Poly-brominated diphenyl ethers (PBDEs), and Polybrominated biphenyl's (PBBs),
- EMT can create customized reports and data packages to suit any program. These reports can be faxed or emailed.



What is Next?

- We are building our internal technical expertise in order to better serve Motorola's suppliers
- Looking for other manufacturers to work with to develop similar programs.



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www.emt.com

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