

**PermaFix**<sup>®</sup>

environmental services



# A Nuclear Services and Waste Management Company

## Perma-Fix's Transition of M&EC Capabilities

Waste Management 2017  
Wednesday, March 8, 2017

Tammy Monday, Sales and Business Development



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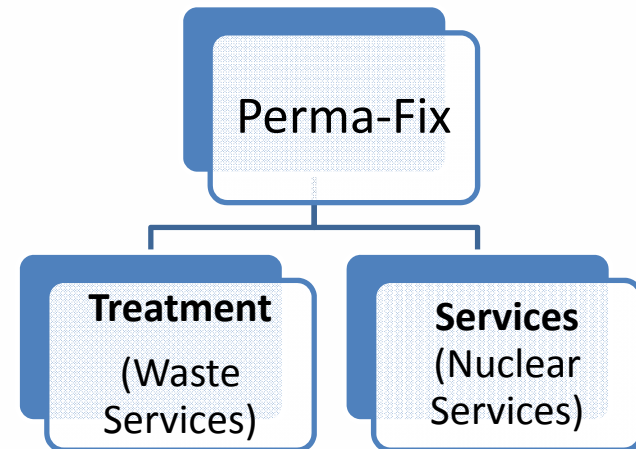
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# Corporate Overview

- Lou Centofanti, CEO, founded Perma-Fix as Hazardous Waste management company in 1991;
- Publicly traded (NASDAQ: PESI) headquartered in Atlanta, GA;
- Certified small business under NAICS Code 562910, Environmental Remediation;
- Own/operate 4 licensed and permitted waste treatment facilities (LLW, MLLW, TRU, Hazardous) serving DOE, DOD and commercial generators around North America;
- Purchased Safety and Ecology Corporation in 2011, to provide turnkey, front-end to back-end environmental restoration, D&D, radiological survey and assessment, and waste management/disposal
- Collectively have completed over \$2 billion in waste, environmental and nuclear projects;
- International offices in Canada and the UK.



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# Nuclear Services Expertise

Perma-Fix is an industry leader in providing planning, characterization, remediation, and radiological control support to the nuclear industry:

- Certified Health Physicists that develop, manage, and implement radiological control programs, provide expert witness testimony, and support regulatory standards development;
- Decontamination and Demolition experience dealing with a large variety of radiological and chemical constituents;
- 23 years experience conducting radiological and chemical surveys in accordance with MARSSIM and MARSAME;
- Environmental restoration of radiologically and chemically contaminated land, surface and groundwater, and sensitive ecosystems;
- Supported termination of NRC radioactive material licenses at 35 facilities, completed > 300 MARSSIM final status surveys, executed > 20,000 open land and structural surveys



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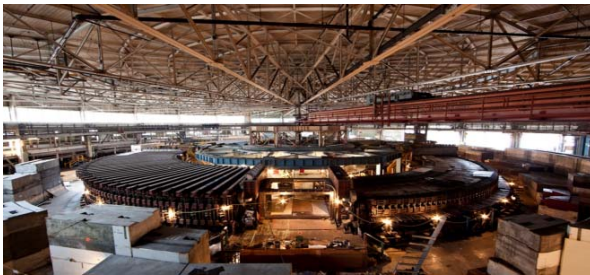
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# Characterization Capabilities

- Perma-Fix offers advanced technologies supporting site characterizations including:
- Large Area Gamma Survey technology:
  - Array of radiation detectors and spectrometers
  - Global positioning
  - Electronic data collection
  - In-Situ Non-Destructive Assay
- Experts in MARSSIM, final status surveys, and unrestricted “free” release;
- Large complex characterizations (e.g., Bevatron accelerator);
- Instrument repair and calibration facility.



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# Waste Services Capabilities

- Recognized leader in radioactive and non-radioactive waste treatment:
  - Low-Level Waste (LLW)
  - Mixed Low-Level Waste (MLLW)
  - Transuranic Waste (TRU)
  - Hazardous Waste
  
- Research & Development Lab
  - Treatment recipe development
  - Medical isotope production
  
- M&EC Facility capabilities being moved to accommodate DOE reindustrialization mission at ETTP



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# Materials and Energy Corporation (M&EC)

Perma-Fix's M&EC facility is fully licensed and permitted and operates under a radioactive materials license and RCRA Part B permit issued by the State of Tennessee. The M&EC facility is located at the U.S. Department of Energy's Heritage Center (formerly K-25 site) in Oak Ridge, Tennessee.



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# Perma-Fix/M&EC – DOE’s Reindustrialization Mission

- Perma-Fix’s M&EC facility is physically located at the East Tennessee Technology Park (Heritage Center) K-1200 building complex
- The facility is subleased from the Heritage Center
- The Heritage Center was established as part of the Department of Energy (DOE) reindustrialization efforts at its East Tennessee Technology Park (ETTP) in Oak Ridge
- Based upon current site demolition and reindustrialization plans, DOE was unable to extend the Heritage Center lease and the M&EC sublease
- June 2016, Perma-Fix was notified that our lease will expire on January 21, 2018



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# Perma-Fix/M&EC – Ensuring Minimal to NO Impacts to our Customers

- Perma-Fix is unique since we have 3 other facilities that maintain RCRA permits and Radioactive Materials Licenses equivalent to M&EC's license and permits.
- No disruption, to date, to waste receipts for any of our customers.
- Still currently receiving waste at our M&EC facility on a case by case basis and will continue until the M&EC facility is in full RCRA closure.
- All waste currently in inventory at M&EC will be treated and disposed of in accordance with the current contract and/or task order(s).
- Although, physical location will be returned to DOE, the M&EC entity will remain.



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# M&EC's Capabilities/Technologies



1. Stabilization
2. Neutralization
3. Amalgamation
4. Macroencapsulation
5. Reactives
6. VTD
7. Classified
8. High H-3 Enclosure
9. NNS Program
10. Footprint/Capacity



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# Perma-Fix's Treatment Capabilities

## ➤ Stabilization

- DSSI, PFF and PFNW equipped and permitted for Stabilization – currently treating waste

## ➤ Neutralization

- DSSI, PFF and PFNW equipped and permitted for Neutralization - currently treating waste

## ➤ Amalgamation

- PFF equipped and permitted for Amalgamation – currently treating small volumes
- Evaluating if unit from M&EC will be moved to one of our other treatment facilities to treat larger volumes
- DSSI has permit modification submitted to State.



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# Perma-Fix's Treatment Capabilities

## ➤ Reactives

- DSSI, PFF and PFNW equipped and permitted for Deactivation
- Evaluating customer needs for larger volumes of Reactive waste streams
- Determining if expansion of facility is needed

## ➤ Macroencapsulation

- PFF and PFNW equipped and permitted for Macroencapsulation
- DSSI has permit modification submitted to State

## ➤ Vacuum Thermal Desorption

- M&EC is currently our only facility with this technology
- DSSI has liquefaction for semi-solids that can be solubilized for combustion
- Evaluating customers needs
- PFF is permitted for thermal treatment of solids
- Determining if new VTD will be installed



# Perma-Fix's Treatment Capabilities

## ➤ Classified

- M&EC is currently our only facility with this capability
- Evaluating customers needs
- Depending on evaluation, each facility is a viable option

## ➤ High H-3 Enclosure

- This system was specifically designed to safely manage a small population but problematic high tritiated waste streams within the DOE complex
- Determining if expansion of facility is needed

## ➤ NNSS Program

- Program managed through M&EC Entity
- Working with NNSS to determine most appropriate path forward
- Program will be managed through M&EC Entity or be moved to one of our treatment facilities



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# Perma-Fix's Treatment Capabilities

- Footprint/Capacity
  - The M&EC facility occupies approximately 110,000 ft<sup>2</sup>
  - Treatment capacity

M&EC	Capacity	Unit
Macro-encapsulation	7,181	gallons/day
Stabilization	3,286	gallons/day
Vacuum assisted thermal desorption	22,000	gallons/day
Solvent Extraction	5,744	gallons/day

- Radioactive Materials License
- Storage Capacity



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# In Closing

- **Customers waste will be treated and disposed in a timely and compliant manner**
- **All capabilities/technologies are operational at existing Perma-Fix facilities**
- **Maintaining NNSS Program for DOE Clients**
- **Customers feedback is imperative**



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# Questions?

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