



## **Waste Treatment:**

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### **It's a Journey, not a destination**

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## **A JOURNEY BEGINS WITH ONE STEP**

Circa 1992

### **The Permitting Process**

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- In 1992, MEI began its journey toward a waste treatment facility by filing for our first industrial discharge permit.
- 1994 Local discharge permit received. Valid for 5 years.

### **The Permitting Process**

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- 1994-1998 the zoning & building/excavation permit process.
- These were our first steps on the journey to waste treatment.

### **The Permitting Process**

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- Industrial Discharge Permit allows us to discharge up to 80,000 gallons/day.
- Original idea was to process primarily septic/sewage waste from the available 400 + million gallons.
- PENNVEST helped fund the facility.

## Next Step:

### SITE PREPARATION

1998-Excavated 480,000 cubic yards of dirt to make way for treatment facility construction.

Circa 1998

## Earthmoving



## Earthmoving



## Earthmoving



## Construction

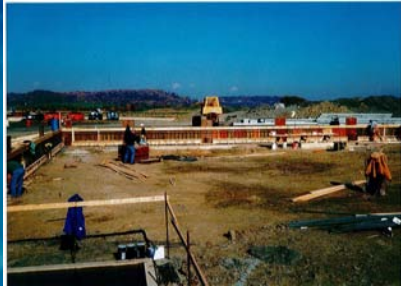
- October 1999-Building construction begins.



## Construction



## Secondary Containment



## Structure



## Taking Shape



## New Toys



## NEXT STEP: OPEN FOR BUSINESS

Circa 2001

## We're Open! - Almost

- Winter 2000, building construction complete.



## We're Open! - Almost



- Accepting waste is put on hold as we await our DEP Solid Waste Permit.

## First Load

- Jan. 2001-Industrial Discharge permit renewed.
- Feb. 2001-DEP Solid Waste Permit received.
- The first load is received into the facility.

## Got Waste?

- MEI now accepts septic waste, grease trap waste, solids, liquids, semi-solids and oil & water mixes.
- The PA DEP categorizes these as municipal and residual wastes.

## Liquid Waste Unloading Area



## Treatment Tanks



## Elevated Plate & Frame Filter Press





## NEXT STEP: SEEING A NEED

Circa 2002

### Transfer Station

- 2002-MEI answered a community need by modifying our DEP Solid Waste Permit to open a transfer station.
- 2002- Construction on the Transfer Station (Discard Depot) begins.
- The Discard Depot accepts: C&D , Scrap metals, & wood.

## Transfer Station

- Remember, it is a journey, not a destination.
- Additional permits for DEP Tire Handler & EPA E-Scrap allow us to accept these waste streams.
- 2003-Discard Depot opens to the public.

## Discard Depot



Door 19 Chute    Door 20  
Walking Floor Trailer Staging Area

## Discard Depot



Door # 23 Unloading Area

## NEXT STEP:

# RAD PLAN

Circa 2003

## RAD Plan

- 2003-Radiation Plan created, adopted and regulated.
- MEI installs radiation meter at facility scale to ensure no loads entering facility contain dangerous radiation levels.
- ALL LOADS entering our facility pass by the radiation detectors.

## Radiation Detectors



Radiation Detectors and Scale

## **NEXT STEP:**

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# **EPA RULES**

**Circa 2005**

- ## **The EPA Rules**
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- 2005- Our 3<sup>rd</sup> Industrial Discharge Permit is received.
  - EPA promulgates regulations categorizing our facility as a "CWT" Centralized Waste Treatment facility.

- ## **The EPA Rules**
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- 4methylphenol is prevalent in septic tank & sewage sludge. To be in compliance as a "CWT," we must remove it.
  - Additional neutralization, metals clarification and organic removal is added to our treatment process, a project costing \$100,000+.

- ## **2005 Continued**
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- A 24 hour flow proportionate composite sampler was added to ensure we remain in EPA compliance.
  - Rain is our friend. Leachate water becomes our new waste stream.
  - The journey continues...

## **Next step:**

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# **SOLIDIFICATION CHANGES**

**Circa 2005**

- ## **Additional Materials**
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- 2005- minor permit modification to use solidification agents other than cement kiln dust.
  - Our waste streams for solidification had changed, and we needed to adapt.

## New Materials

- Modified our permit to use other forms of solidification agents such as: virgin powder products from commercial or industry sources, and our own by-products (MEI filtercake).

## NEXT STEP:

# 24/7 OPERATION

Circa 2006

## 24/7/365

- 2006-Hurricane Ivan opens a new door for us. Rain is REALLY our friend.
- 24/7 operation is needed to keep us committed our motto: we'll be there when you need us.
- This improves our facility performance for clients in many industries.
- Now we can discharge up to 180,000 gallons per day!

## NEXT STEP:

# ENERGY IS # 1

2010-Present

## Oil & Gas Waters

- 2011- DEP Solid Waste Permit is renewed until 2/16/2021.
- March 2011-Permit modified allowing MEI to add additional equipment to the oil & gas waters reuse treatment process.
- April 2011-Governor & DEP send out edict to producers to stop delivering waters to permitted facilities.

## O & G Unload & Reload





## O & G Receiving Tanks



## O & G Treatment



## O & G Treated Water



## O & G Transfer Pumps



## Mobile Clarifiers



## Top Of Clarifiers



## Clarifier & Weir



Solids Removal

## NEXT STEP:

## SOLIDIFICATION UPGRADES

Circa 2013

## Waste Reduction

- Pit capacity was expanded.
- A Rotary Press was added to the process to separate the liquids and reduce the amount of product needed to solidify waste.
- Our carbon footprint decreased as using less solidifying agent means less waste to the landfill.

## More Is Better



## Solidification Upgrades



## Solidification Upgrades



## Solidification Upgrades



## Solidification Upgrades



## Rotary Press



## Rotary Press



## Conditioning



## NEXT STEP: CONSTANT ADAPTATION

Future Developments

## Adapting to the times

- Waste treatment is a journey filled with peaks and valleys.
- Adapting to the needs of our customers is our number 1 priority.
- “Protecting our environment for tomorrow’s generations”

# Questions?

