Former Manufactured Gas Plant Remediation Update

October 2008

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Outline

- Historic Depot Building Relocation
- Additional Soil Sampling & Analyses Results
- Thermal Treatment Modeling Results
- Updated Disposal Alternatives
- Staff Recommendation

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Historic Depot Building Relocation

September – October 2008

Depot Building Relocation

- Allows access to contaminated soil underneath it
- Temporarily relocated to SW corner of site
- Will be permanently located 30’ south to accommodate widening of Depot Avenue and restored

Additional Soil Sampling & Analyses

PURPOSE:

- To determine if June 2008 test burn results were representative of entire site
- To refine treatment/disposal alternatives cost and schedule estimates
- To reduce risk of cost and schedule increases due to unknown site conditions

Sampling Plan

- Site divided into a grid of 40’ squares
- Grid squares grouped into 10 zones
- 25 sample points distributed over site
- Each zone assigned a fraction of the total site soil volume*
- Soil sampling results averaged for each zone

*Weighted as a fraction by feet of excavation in each cell

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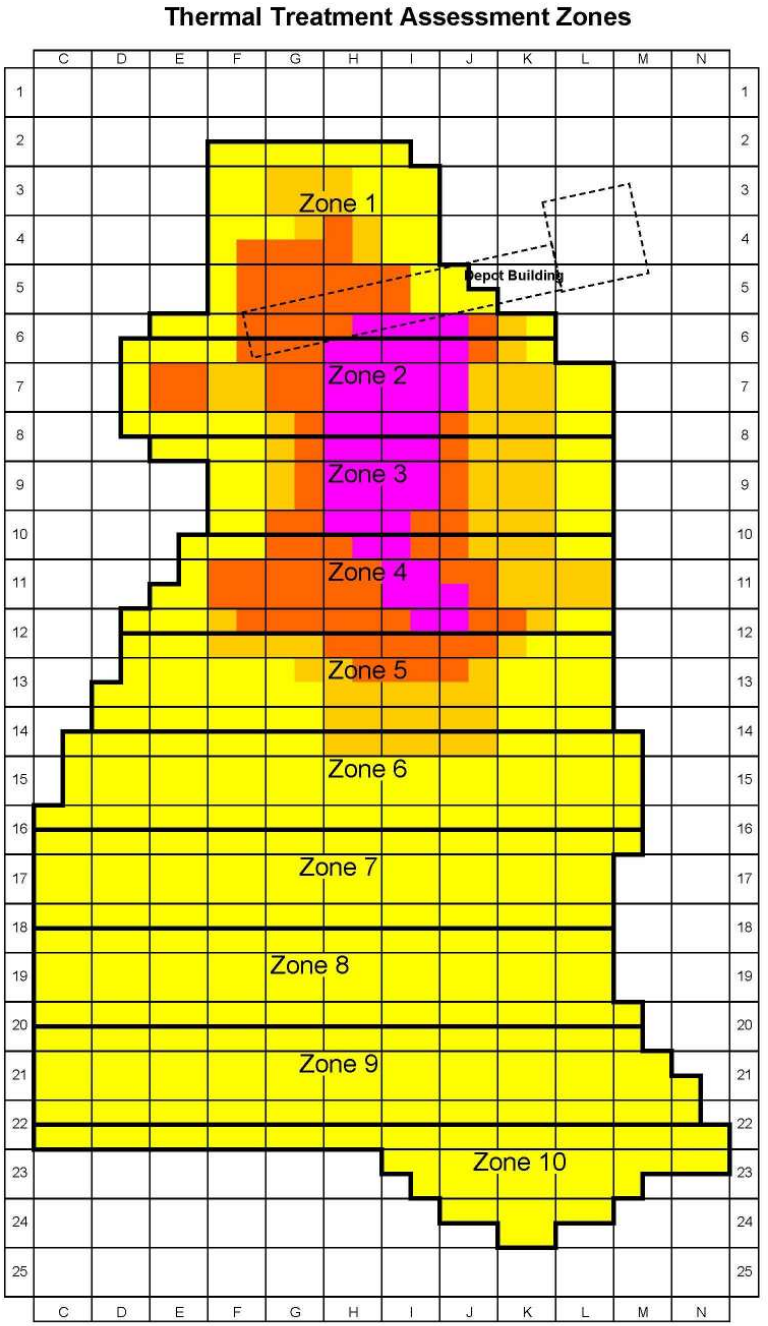
Site Grid Map



Depth Legend

- 0 - 10 ft
- >10 - 20 ft
- >20 - 30 ft
- >30 - 40 ft

Soil Volume by Zone

Test Burn Zone	Soil Quantity (tons)
1	22,000
2	20,000
3	19,200
4	24,200
5	14,200
6	10,700
7	11,500
8	9,200
9	11,200
10	6,100
Total	148,300

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Key Thermal Treatment Parameters

Each sample was analyzed for the key thermal treatment parameters:

- **Moisture Content** (% as received)
- **BTU/lb** (dry basis)
- **Organic Carbon** (% dry basis)

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Analytical Results

- Wide range of values for critical parameters per zone:
  - Btu/lb ranged from <50 to over 6,000
  - Moisture ranged from 19% to 36%
  - TOC ranged from <1% to 39%
- Statistical analyses performed to determine what values to use in computer modeling

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Summary of Analytical Data from Additional Sampling

Zone	Moisture Content (wt%)	Heat Content (Btu/lb)	Total Organic Carbon (wt%)
Initial Test Burn	18.8	716	6.67
1	19.2	170	1.50
2	25.2	50	0.60
3	23.7	397	2.07
4	28.4	1,633	3.63
5	25.1	991	5.13
6	18.5	415	2.61
7	22.4	539	4.05
8	26.0	1,454	6.94
9	35.9	6,059	38.83
10	32.5	1,537	11.35

Process Treatment Modeling

- Estimated theoretical thermal treatment throughput rate computer modeled and adjusted for actual test burn results
- Model runs for each of the 10 zones
- Weighted average throughput and unit treatment cost calculated per zone

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Conclusions from Modeling Results

- Approximately 50,000 tons of the soil has high heat content and TOC which would cause excessive heat release
- This soil is not suitable for thermal treatment without either significant blending with cleaner soil, re-burning, or both
- Thermal treatment not practical for this material

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Alternatives

- Offsite Thermal Treatment
  - not practical due to high Btu and TOC in soil
- Combination Off-site Thermal Treatment & Landfill
- Landfill Disposal

Alternative 1
Combination Off-site Thermal Treatment & Landfill

- Off-site treatment facility located in Mulberry, FL
- Treated soil that meets residential clean-up standards is issued a “Certificate of Thermal Destruction”
- Soil not meeting residential standards would have to be re-treated or could come back to site if it met the site cleanup standards
- Excess soil not returned to site will be disposed of by the thermal treatment facility

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Alternative 2
Landfill

- Chesser Island Landfill - Located in Charlton County, GA (35 miles NW of Jacksonville, FL)
- Composite lining
  - 2’ low permeability clay,
  - bentonite sealant and
  - 60 mil HDPE membrane above recompacted subgrade
- Active leachate collection and leakage detection systems
- Groundwater and Air Quality Monitoring

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Alternative 2
Landfill (cont.)

- On-site certified Landfill Manager
- Will provide written indemnity to GRU
- Already received MGP waste from GRU site (approximately 7,000 tons Nov. 2005 – Jan. 2006)

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Alternatives Cost & Schedule Results

Alternative	Total Cost*	Schedule
1. Combination LF & Thermal	$ 22.2 M	23 Months
2. Landfill Only	$ 13.3 M	14 Months
Difference	$ 8.9 M	9 Months

*Includes site mobilization, dewatering, air monitoring & construction oversight

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Recommended Alternative

Landfill

- Least Cost
- Fastest Schedule
- Greater Cost Certainty (no re-treatment)
- Acceptable Long-term Risk (disposal location known)
- Was used at the other MGP sites in FDEP NE District including St. Augustine, Palatka, and Jacksonville Gas

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Manufactured Gas Plant Site
Gainesville - circa 1897