APPENDIX G
CASE SUMMARIES OF MGP SITE REMEDIATION

Case Summaries of Manufactured Gas Plant Site Remediation

Site	Study Type	Treatment Technology	Contaminants	Technology Performance					Waste Volume/ Type	Contaminant Source	Treatment Duration	Mngmt On- or Off-site
				Before (1)	After (2)	% Reduced	10x UTS	Meets LDR				
Peoples Natural Gas (PNG) Dubuque, IA	Full-scale	Co-burning in utility boiler	Carcin. PAHs Total PAHs	Varied: from near coal tar to cleanup standards	NA	>99.99 >99.99	NA	Yes Yes	14,170 Tons soils	Coal tars	3 Years	Off-site
Key City Gas Light Company Dubuque, IA	Full-scale	Co-burning in utility boiler, bioremediation	Carcin. PAHs Total PAHs	Same as PNG site	NA	>99.99 >99.99	NA	Yes Yes	2,100 Tons soil	Coal tars & gasoline	NA	Off-site
Waterloo Coal Gasification Waterloo, IA	Full-scale	Co-burning in utility boiler	Carcin. PAHs Total PAHs	Same as PNG site	NA	>99.99	NA	Yes	8,350 Tons soil	Coal ash & slag	NA	Off-site
Owego MGP Owego, NY	Full-scale	Co-burning in utility boiler	Benzene Total PAHs	=<1,000 ppm =<45,000ppm	NA	>99.99 >99.99	100 NA	Yes Yes	13,160 Tons soil	Coal tar	NA	Company boiler
Rochester Gas & Electric West Station Rochester, NY	Pilot-scale	Co-burning in utility boiler	<u>Soils</u> BTEX-mostly xylenes BTEX+styrene & 1,2,4-trimethylbenzene PAHs <u>Tars</u> BTX PAHs BTEX+styrene & 1,2,4-trimethylbenzene	35 ppm 55 ppm 5,850 ppm 1,220 ppm 96,000 ppm 2,000 ppm	NA	>99.5 for volatiles >99.5 for volatiles >99.9 >99.9 >99.9 >99.9	NA	Yes Yes Yes Yes Yes Yes	15,000 Tons soil; 3,000 tons pure tars	Tars, coke breeze, ash	NA	Company boiler
Broad Street MGP Greenville, SC	Pilot-scale	Co-burning in utility boiler	PAH BTEX	50-2,500 ppm 0.07-68 ppm	NA	>99.99 >99.99	NA	Yes Yes	Initial 1,500 tons	MGP residuals	1 Month	Company boiler
Niagara Mohawk Power Corporation Harbor Point, NY	Bench-scale	Thermal desorption	BTEX PAHs Ferricyanide compounds Arsenic Lead	320 4,420 1,120-Total cyanide 60 320	NA	99.7 98.6 97.5 NA NA	NA NA 5,900 500* 7.5*	Yes Yes Yes NA NA	8,100 Tons soil & sediment	MGP residuals	1-3 Months	On-site
Unnamed site Union, NJ	Bench-scale Pilot-scale	Slurry-phase bioremediation	Total PAHs Carc. PAHs	1,014 231	44.8 14.7	95.6 93.4	NA	Yes Yes	NA-soil	MGP residuals	34 Days, 14 Days	Off-site
Unnamed site Columbus, GA	Full-scale	In situ stabilization	VOCs PAHs Oil & grease	260 2,400 5,500	(3) (3) NA	>90 (3) >90 (3) NA	NA	Yes (3) Yes (3) NA	>82,000 Cy soil	MGP residuals	20 Weeks	On-site

NOTES:

* Units = mg/L TCLP

1. Before treatment concentrations are presented as total constituent concentrations, except footnoted concentrations which are TCLP results.
2. After concentrations are presented as TCLP results, except footnoted concentrations which are total constituent concentrations.
3. The post-remediation groundwater sampling results were used to verify treatment. Well concentrations were reported as not detected. Although detection limits were not specified, it is likely that there was a 90% reduction in soil concentrations.

Source: Edison Electric Institute. April 30, 1996. Memo to EPA. MGP Site Remediation Case Studies and Technology Description Summary Sheets.