LANTEC

Date: June 4, 2007

Customer: Alltrust

Project Name: 80,000 Nm3/hr RTO

Heat Recovery in 2-Canister RTO (with fixed burner air flow)
With Lantec MLM-180

TER 95.0%

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Design Conditions

Inlet Air Flow:	50,723	scfm
Inlet Air Temperature:	122	°F
Combustion Temperature:	1,508	°F
Canister Cross Section:	200	ft^2
Depth Of MLM (per canister):	4.674	ft
½-Cycle Time (heating or cooling):	2.00	min
Burner Air / Inlet Air Ratio:	0	scfm/scfm

System Parameters

Bulk Density of Lantec MLM-180:	58.5	lb/ft^3
Heat-Transfer Coefficient of Media:	17.9	$Btu/min{\cdot}ft^3{}^oF$
Heating Value of Fuel Gas:	1,075	Btu/scf

ver. 03-24-05 OTP

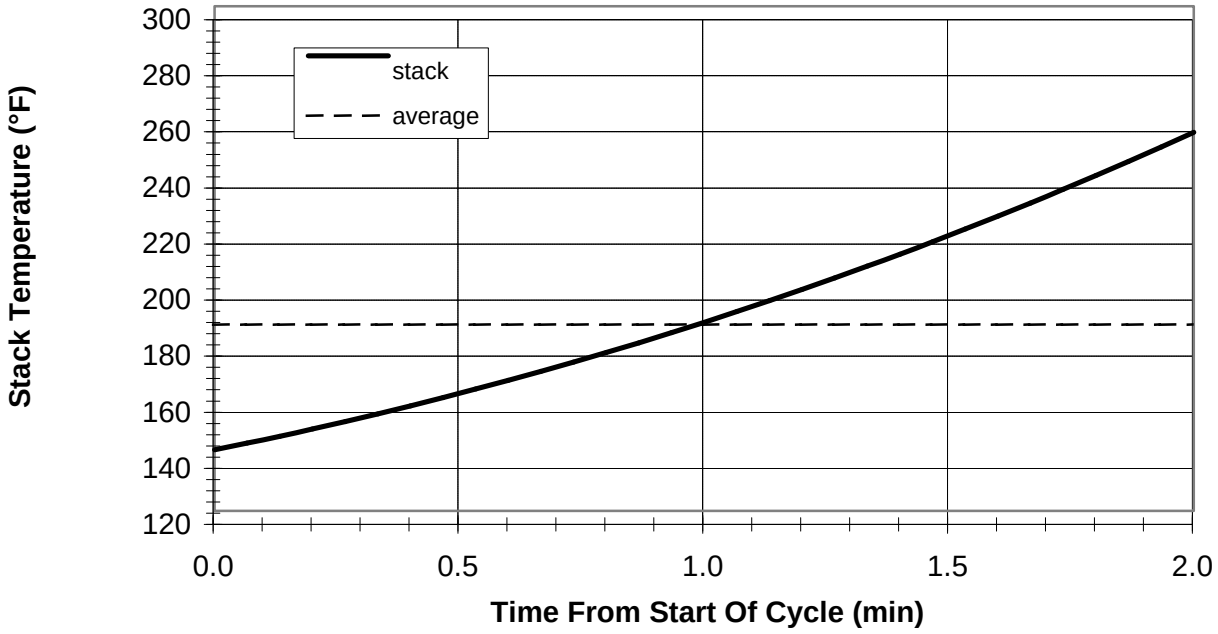
Calculated Performance

Heat Recovery From Combustion Gas:	95.00	%
Heat Returned to Inlet Air:	95.00	%
Inlet Gas Velocity:	254	$scfm/ft^2$
Maximum Stack Gas Temperature:	255	°F
Average Stack Gas Temperature:	191	°F
Burner Air Flow:	0	scfm
Average Fuel Gas Consumption:	61.3	scfm
Average Burner Output:	4.0	MMBtu/hr
Pressure Gradient Across MLM:	0.64	in-W.C./ft
Pressure Drop Across 2 Beds:	6.0	in-W.C
Fan Motor Efficiency:	100	%
Brake Horsepower Needed: (to overcome media ΔP)	55.6	hp

Stack Temperature (Using MLM-180)

$\eta = M_o(T_c - T_{out}) / M_i(T_c - T_{in}) \times 100$

$\eta = (50{,}723 + 0) \times (1{,}508 - 191) / (50{,}723) \times (1{,}508 - 122) \times 100 = 95.0\%$



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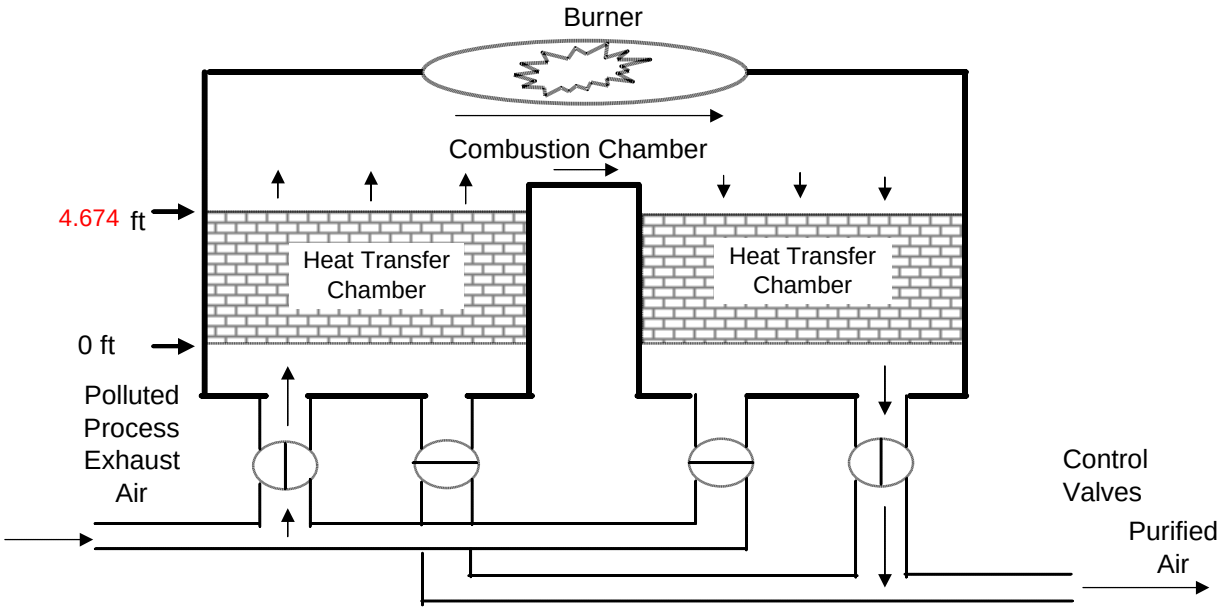

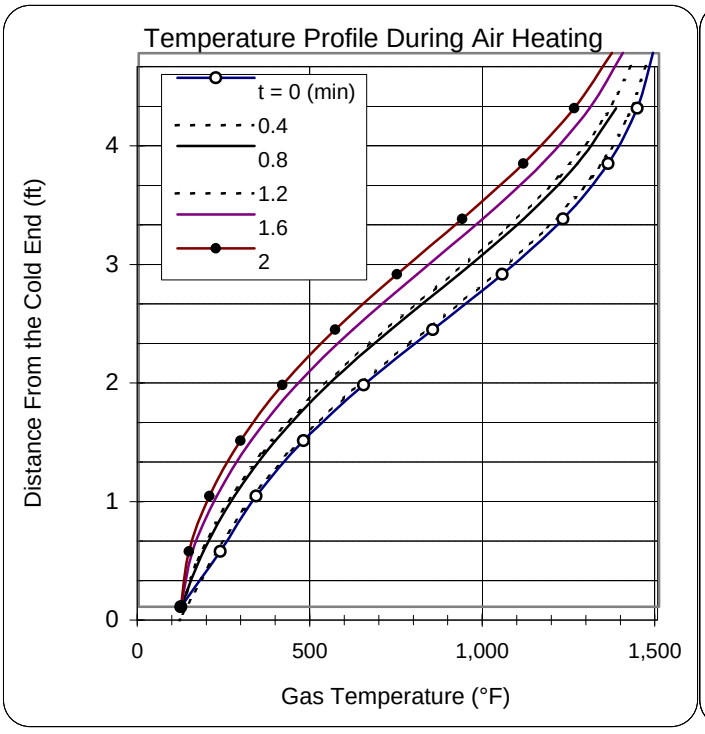

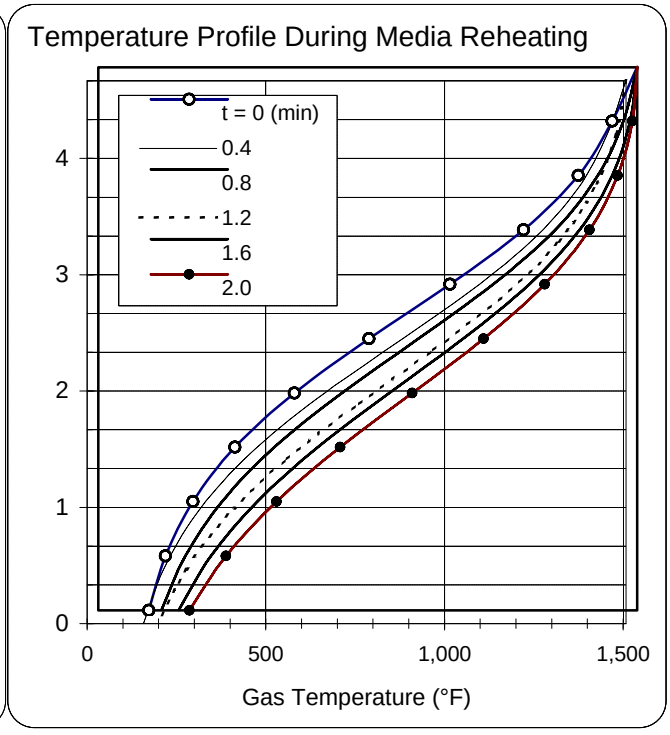

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Date: June 4, 2007

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Project Name: 40,000 Nm3/hr RTO

Heat Recovery in 2-Canister RTO (with fixed burner air flow)
With Lantec MLM-180

TER 95.0%

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Design Conditions

Inlet Air Flow:	25,362	scfm
Inlet Air Temperature:	122	°F
Combustion Temperature:	1,508	°F
Canister Cross Section:	100	ft^2
Depth Of MLM (per canister):	4.674	ft
½-Cycle Time (heating or cooling):	2.00	min
Burner Air / Inlet Air Ratio:	0	scfm/scfm

System Parameters

Bulk Density of Lantec MLM-180:	58.5	lb/ft^3
Heat-Transfer Coefficient of Media:	17.9	$Btu/min \cdot ft^3 {}^oF$
Heating Value of Fuel Gas:	1,075	Btu/scf

ver. 03-24-05 OTP

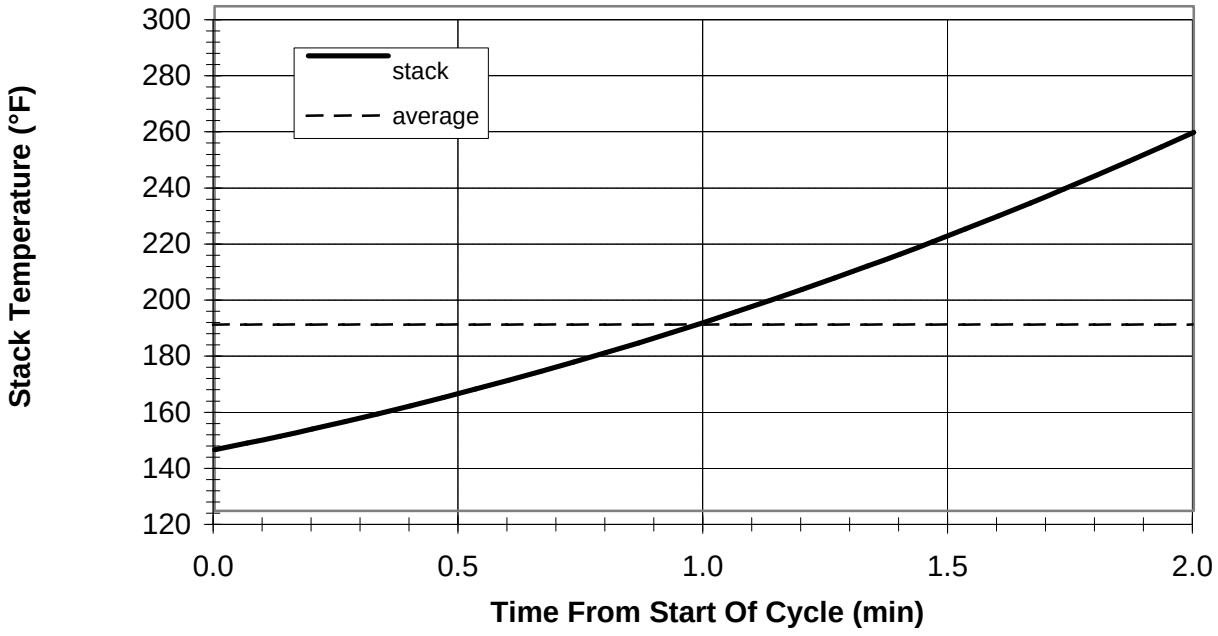
Calculated Performance

Heat Recovery From Combustion Gas:	95.00	%
Heat Returned to Inlet Air:	95.00	%
Inlet Gas Velocity:	254	$scfm/ft^2$
Maximum Stack Gas Temperature:	255	°F
Average Stack Gas Temperature:	191	°F
Burner Air Flow:	0	scfm
Average Fuel Gas Consumption:	30.6	scfm
Average Burner Output:	2.0	MMBtu/hr
Pressure Gradient Across MLM:	0.64	in-W.C./ft
Pressure Drop Across 2 Beds:	6.0	in-W.C
Fan Motor Efficiency:	100	%
Brake Horsepower Needed: (to overcome media ΔP)	27.8	hp

Stack Temperature (Using MLM-180)

$\eta = M_o(T_c - T_{out}) / M_i(T_c - T_{in}) \times 100$

$\eta = (25{,}362 + 0) \times (1{,}508 - 191) / (25{,}362) \times (1{,}508 - 122) \times 100 = 95.0\%$



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