FORM 155.17-F1 (1295)

YORK® ParaFlow™ Inspection Report

FOR USE ON INSPECTION CONTRACT VISITS

Project Name: DuPont Experimental Station ID # ABS#1

Address:

Model No. YPCST22G46CXA Serial No: GLCM157836 YORK Order: Hrs. of Operation: 18,354/515 starts

By: Kevin Fraze Date: 7/15/08 Time: 8:30 AM PM

MACHINE OPERATING CODE: Chilling ☑ Heating ☐

% LOAD 75%/11,300 LBS/HR TYPE OF VISIT:

Chilled Water	Inlet Temp (°F)	52.4
	Outlet Temp (°F)	42.5
	ΔP (psi) 3020GPM	23
Condenser Water	Inlet Temp (°F)	74.2
	Outlet Temp (°F)	85.2
	ΔP (psi) 6000GPM	18
High Temp Generator	Solution In Temp (°F) 50Δt	240
	Solution Out Temp (°F)	290
	Pressure (mm HG)	323
	Concentration (%) (Optional)	65.6
Low Temp Generator	Solution In Temp (°F) 19Δt	148
	Solution Out Temp (°F)	167
	Refrigerant Out Temp (°F)	169
	Concentration (%) (Optional)	
Absorber	Solution Out Temp (°F)	87
ABS H2O out=80.5	Sol. Concentration (%) (Required) 5.25mm HgA	54.5
	Abs. Spray Temp (°F)	106
Condenser	Refrigerant Out Temp (°F)	88
Evaporator	Refrigerant Temp (°F)	40.0
Steam Models (Cond Temp 153°F)	Stm. Inlet Press. (PSIG)	98
	Condensate Press. (PSIG)	16
Heat Rec. Models	Gas Ent. Temp (°F)	
	Gas Lvg. Temp (°F)	
Purge Counters (if applicable)	Auto Lifetime	1876
	Auto 7 Day	9
	Manual Lifetime	98
	Manual 7 Day	0

SERVICES PERFORMED

	Every Service Visit	Change/Over (Twice/yr.)	Performed As Required
1. Operational check of all controls	☑		
2. Check refrigerant concentration		☐	
3. Refrigerant blowdown	☑		
4. Refrigerant added _____ gals.		☐	
5. Refrigerant removed _____ gals.		☐	
6. Check solution level	☑		
7. Solution added _____ gals.		☐	
8. Solution removed _____ gals.		☐	
9. Solution sample taken ☐ Yes ☑ No			☐
10. Octyl alcohol added _____ gals.		☐	
11. Inhibitor / hydroxide added _____ type _____ lbs.		☐	
12. Perform air leakage test and indicate length of time (hrs.) Abso. _____ cc/min. Purge Tank _____ cc/min. _____ hrs.	☐		
13. Check torque on carbon-type rupture disk flange	☐		
14. Check unit level (once /yr.)		☐	
15. Steam units:			
a. Inspect needle and control valves			☑
b. Take condensate sample		☐	
16. Heat Recovery units:			
a. Check control damper operation			☐
b. Check bypass damper operation			☐
17. Direct Fired units:			
a. Inspect Burner / Components	☐		
b. Stack Temperature _____ °F _____ % O_2 _____ % CO_2	☐		

Sketch Area:

Rebuild Condensate Regulator with EPDM elastomers, Cleaned Asco Condensate Solenoid Valve.

Remarks / Recommendations:

Purge Tank: 52.2 mm HgA Chiller Tons: 1,246 Chiller Approach: 2.5°F

Absorber Subcooling: 0°F Condensor Tons: 2,750 Condensor Approach: 2.8°F

Heat Input = 1010 Tons LBS/HR/Ton: 9.07 Absorber Approach: [redacted] 6.5°F

Heat Balance = [redacted] 18%

C.O.P. = 1.23 * Heat balance is High, May have inaccurate sensors.

Customer Signature:

	EVAPORATOR	REFRIGERANT TANK	ABSORBER	HIGH TEMPERATURE GENERATOR	LOW TEMPERATURE GENERATOR
LIQUID LEVEL	○ No Spill	● ● ●	● Tank ○ ○ ○ Main Shell	◐	◐

If unit has additional sight glasses, sketch in and indicate liquid level.

WHITE - District/Factory Service CANARY - District/Factory Service PINK - Customer/District Office GOLDENROD - Service Technician

FORM 155.17-F1 (1295)

YORK® ParaFlow™ Inspection Report

FOR USE ON INSPECTION CONTRACT VISITS

Project Name: DuPont Experimental Station ID # Chiller #2

Address:

Model No. YPC-ST-22G46CxA Serial No: GBDM248980 YORK Order: Hrs. of Operation: 20,436 Hrs / 482 starts

By: KEVIN FRAZIE Date: 7/16/08 Time: 19:00 AM PM

MACHINE OPERATING CODE: Chilling ☑ Heating ☐

% LOAD 63 / 14,800 LBS/HR TYPE OF VISIT:

Chilled Water	Inlet Temp (°F)	53.0
	Outlet Temp (°F)	41.5
	ΔP (psi) 3000 GPM	22
Condenser Water	Inlet Temp (°F)	75
	Outlet Temp (°F)	85
	ΔP (psi) 5960 GPM	18
High Temp Generator	Solution In Temp (°F) 54Δt	240
	Solution Out Temp (°F)	294
	Pressure (mm HG)	378
	Concentration (%) (Optional)	66%
Low Temp Generator	Solution In Temp (°F) 16Δt	155
	Solution Out Temp (°F)	171
	Refrigerant Out Temp (°F)	170
	Concentration (%) (Optional)	
Absorber	Solution Out Temp (°F)	87
ABS H_2O Out = 80°F weak / strong	Sol. Concentration (%) (Required) 57.5 mm Hg A	57.8
	Abs. Spray Temp (°F)	92/110
Condenser	Refrigerant Out Temp (°F)	87.6
Evaporator	Refrigerant Temp (°F)	38.6
Steam Models	Stm. Inlet Press. (PSIG)	80
	Condensate Press. (PSIG)	13
Heat Rec. Models	Gas Ent. Temp (°F)	
	Gas Lvg. Temp (°F)	
Purge Counters (if applicable)	Auto Lifetime	1748
	Auto 7 Day	22
	Manual Lifetime	25
	Manual 7 Day	123

COND TEMP = 65°F

SERVICES PERFORMED

	Every Service Visit	Change/Over (Twice/yr.)	Performed As Required
1. Operational check of all controls			☑
2. Check refrigerant concentration		☐	
3. Refrigerant blowdown			☑
4. Refrigerant added ____ gals.		☐	
5. Refrigerant removed 30 gals.		☑	
6. Check solution level			☑
7. Solution added ____ gals.		☐	
8. Solution removed ____ gals.		☐	
9. Solution sample taken ☐ Yes ☑ No			☐
10. Octyl alcohol added ____ gals.		☐	
11. Inhibitor / hydroxide added 590 type [redacted] 1.1 lbs		☑	
12. Perform air leakage test and indicate length of time (hrs.) Abso. ____ cc/min. Purge Tank ____ cc/min. ____ hrs.			☐
13. Check torque on carbon-type rupture disk flange			☐
14. Check unit level (once /yr.)	☐		
15. Steam units:			
a. Inspect needle and control valves			☑
b. Take condensate sample		☐	
16. Heat Recovery units:			
a. Check control damper operation			☐
b. Check bypass damper operation			☐
17. Direct Fired units:			
a. Inspect Burner / Components			☐
b. Stack Temperature ____ °F ____ % O_2 ____ % CO_2			☐

Sketch Area:

Repaired air Leaks on VP7, VS17, and Refrig Tank Sight Glass. Evacuated, added inhibitor, and started up. Purging should subside over time. Replaced Steam Condensate Regulator.

Remarks / Recommendations:

Purge Tank: 30.5 mm Hg A Chiller Tons: 1,438 Chiller Approach: 2.9°F

Absorber Subcooling: 7°F Condensor Tons: 2,483 Condensor Approach: 2.6°F

Heat Input = 1,300 Tons Lbs/Hr/Ton: 10.3 Absorber Approach: 7.0°F

Heat Balance = [redacted] 10%

C.O.P = 1.106 *Heat Balance is High, May have inaccurate sensors.

Customer Signature:

	EVAPORATOR	REFRIGERANT TANK	ABSORBER	HIGH TEMPERATURE GENERATOR	LOW TEMPERATURE GENERATOR
LIQUID LEVEL	Out	● ● ●	● Tank ○○○ Main Shell	●	Low

If unit has additional sight glasses, sketch in and indicate liquid level.

WHITE - District/Factory Service CANARY - District/Factory Service PINK - Customer/District Office GOLDENROD - Service Technician

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YORK® ParaFlow™ Inspection Report

FOR USE ON INSPECTION CONTRACT VISITS

Project Name: DuPont Experimental Station ID # ABS#3

Address:

Model No. YPCST22GCXA Serial No: GA0M233620 YORK Order: Hrs. of Operation: 20,768 Hrs / 493 starts

By: Kevin Frazee Date: 7/17/08 Time: AM 11:32 PM

MACHINE OPERATING CODE: Chilling ☑ Heating ☐

% LOAD 98% 14,700 lbs/Hr TYPE OF VISIT:

Chilled Water	Inlet Temp (°F)	52.7
	Outlet Temp (°F)	43.8
	ΔP (psi) 2800GPM	14
Condenser Water	Inlet Temp (°F)	81.1
	Outlet Temp (°F) ABS-89	92.2
	ΔP (psi) 5900GPM	21
High Temp Generator	Solution In Temp (°F) 50Δt	265
	Solution Out Temp (°F)	315
	Pressure (mm HG)	522
	Concentration (%) (Optional)	64.8
Low Temp Generator	Solution In Temp (°F) 28Δt	160
	Solution Out Temp (°F)	188
	Refrigerant Out Temp (°F)	180
	Concentration (%) (Optional)	
Absorber	Solution Out Temp (°F)	93.5
	Sol. Concentration (%) (Required) 5.75 mm Hg A	58.6
Weak/Strong	Abs. Spray Temp (°F)	100/120
Condenser	Refrigerant Out Temp (°F)	94.8
Evaporator	Refrigerant Temp (°F)	40.1
63°F Steam Models	Stm. Inlet Press. (PSIG)	105
Cond Temp	Condensate Press. (PSIG)	20
Heat Rec. Models	Gas Ent. Temp (°F)	
	Gas Lvg. Temp (°F)	
Purge Counters (if applicable)	Auto Lifetime	1750
	Auto 7 Day	0
	Manual Lifetime	110
	Manual 7 Day	0

SERVICES PERFORMED

	Every Service Visit	Change/Over (Twice/yr.)	Performed As Required
1. Operational check of all controls	☑		
2. Check refrigerant concentration		☐	
3. Refrigerant blowdown	☑		
4. Refrigerant added _____ gals.		☐	
5. Refrigerant removed _____ gals.		☐	
6. Check solution level	☑		
7. Solution added _____ gals.		☐	
8. Solution removed _____ gals.		☐	
9. Solution sample taken ☐ Yes ☑ No			☐
10. Octyl alcohol added _____ gals.		☐	
11. Inhibitor / hydroxide added 590 type 0.846 lbs.		☑	
12. Perform air leakage test and indicate length of time (hrs.) Abso. _____ cc/min. Purge Tank _____ cc/min. _____ hrs.	☐		
13. Check torque on carbon-type rupture disk flange	☐		
14. Check unit level (once /yr.)		☐	
15. Steam units:			
a. Inspect needle and control valves			☑
b. Take condensate sample		☐	
16. Heat Recovery units:			
a. Check control damper operation			☐
b. Check bypass damper operation			☐
17. Direct Fired units:			
a. Inspect Burner / Components	☐		
b. Stack Temperature _____ °F _____ % O_2 _____ % CO_2	☐		

Sketch Area:

Rebuild Condensate Regulator with EPDM elastomers. Cleaned and Rebuild Asco Condensate Solenoid Valve. Added inhibitor.

Remarks / Recommendations:

Purge Tank: 54.3 mm Hg A Chiller Tons: 1,038 Chiller Approach:

Absorber Subcooling: 7°F Condenser Tons: 2,729 Condenser Approach:

Heat Input: 1294 Tons Lbs/Hr/Ton: 14.16 Absorber Approach: 4.5

Heat Balance: 14.5%

C.O.P.: 0.802 * Heat Balance is High. May have inaccurate sensor.

Customer Signature:

	EVAPORATOR	REFRIGERANT TANK	ABSORBER	HIGH TEMPERATURE GENERATOR	LOW TEMPERATURE GENERATOR
LIQUID LEVEL	MT		Tank Main Shell		W

If unit has additional sight glasses, sketch in and indicate liquid level.

WHITE - District/Factory Service CANARY - District/Factory Service PINK - Customer/District Office GOLDENROD - Service Technician

FORM 155.17-F1 (1295)

YORK® ParaFlow™ Inspection Report

FOR USE ON INSPECTION CONTRACT VISITS

Project Name: DuPont Experimental Station ID # ABS#4

Address:

Model No. YPC-ST-2264CXA Serial No: GNCM94230017 YORK Order: Hrs. of Operation: 18,530 Hrs / 551 Starts

By: Kevin Fraze Date: 7/16/08 Time: 19:30 PM

MACHINE OPERATING CODE: Chilling ☑ Heating ☐

% LOAD 72% 14,000 lbs/Hr

TYPE OF VISIT:

	Every Service Visit	Change/Over (Twice/yr.)	Performed As Required

SERVICES PERFORMED

1. Operational check of all controls			☑
2. Check refrigerant concentration		☐	
3. Refrigerant blowdown			☑
4. Refrigerant added _____ gals.		☐	
5. Refrigerant removed _____ gals.		☐	
6. Check solution level			☑
7. Solution added _____ gals.		☐	
8. Solution removed _____ gals.		☐	
9. Solution sample taken ☐ Yes ☑ No		☐	
10. Octyl alcohol added _____ gals.		☐	
11. Inhibitor / hydroxide added _____ type _____ lbs.		☐	
12. Perform air leakage test and indicate length of time (hrs.) Abso. _____ cc/min. Purge Tank _____ cc/min. _____ hrs.			☐
13. Check torque on carbon-type rupture disk flange			☐
14. Check unit level (once /yr.) ☐			
15. Steam units:			
a. Inspect needle and control valves		☑	
b. Take condensate sample		☐	
16. Heat Recovery units:			
a. Check control damper operation		☐	
b. Check bypass damper operation		☐	
17. Direct Fired units:			
a. Inspect Burner / Components			☐
b. Stack Temperature _____ °F _____ % O_2 _____ % CO_2			☐

Chilled Water	Inlet Temp (°F)	52.8
	Outlet Temp (°F)	42.7
	ΔP (psi) 3000 GPM	22
Condenser Water	Inlet Temp (°F)	74.3
	Outlet Temp (°F)	84.0
	ΔP (psi) 5750 GPM	20
High Temp Generator	Solution In Temp (°F) 62 Δt	230
	Solution Out Temp (°F)	292
	Pressure (mm HG)	320
	Concentration (%) (Optional)	
Low Temp Generator	Solution In Temp (°F) 27 Δt	141
	Solution Out Temp (°F)	168
	Refrigerant Out Temp (°F)	165
	Concentration (%) (Optional)	
Absorber	Solution Out Temp (°F)	90.0
ABS H_2O Out = 80°F	Sol. Concentration (%) (Required) 6.25 mm Hg A	56%
Weak / Strong	Abs. Spray Temp (°F)	92/108
Condenser	Refrigerant Out Temp (°F)	87
Evaporator	Refrigerant Temp (°F)	40.0
150°F Cond	Steam Inlet Press. (PSIG)	80
Steam Models	Condensate Press. (PSIG)	15
Heat Rec. Models	Gas Ent. Temp (°F)	
	Gas Lvg. Temp (°F)	
Purge Counters (if applicable)	Auto Lifetime	1854
	Auto 7 Day	0
	Manual Lifetime	0
	Manual 7 Day	108

Sketch Area:

Rebuilt Condensate Regulator w/ EPDM elastomers, Cleaned and Rebuilt ASCO Condensate Solenoid Valve.

Remarks / Recommendations:

Purge Tank: 42.4 mm Hg A
Absorber Subcooling: 0°F
Heat Input = 1245 Tons
Heat Balance = 4.7%
C.O.P. = 1.01

Chiller Tons: 1,262.5
Condensor Tons: 2,396
Lbs/Hr/Ton: 11.09

Chiller Approach: 2.7
Condensor Approach: 3.0
Absorber Approach: 10°F

Customer Signature:

	EVAPORATOR	REFRIGERANT TANK	ABSORBER	HIGH TEMPERATURE GENERATOR	LOW TEMPERATURE GENERATOR
LIQUID LEVEL	OMT	● ● ●	● Tank ○○○ Main Shell	●	O↓↓

If unit has additional sight glasses, sketch in and indicate liquid level.

WHITE - District/Factory Service CANARY - District/Factory Service PINK - Customer/District Office GOLDENROD - Service Technician