

July 25, 2019

ARKEMA

Subject: The July 19th 3rd weekly vibration service cover

Weekly Equipment

Agitator, Hydrogenator C 7001-01 Not Running

A/B Concentrator Vacuum Pump 57 Not Running

Flash Vacuum Pump 2130-1 Not Running

Air Compressor C-201 Not Running

Air Compressor C-202 Not Running

Air Compressor C-203

Vibrations continue to be lower this survey than last week. The trend clearly shows that the vibrations vary considerably over time. We still believe the motor has possible weak rotor bar end connections that cause the vibrations to fluctuate higher due to increased loading. We will continue to monitor this unit for changes and we will lower the defect rating for now. **Rated a Class I Defect.**

Air Compressor NASH 201-08 Not Running

D Hydrogenator Agitator 9002-10 Not Running

Instrument Air Compressor new Vibrations in this unit appear normal. No actions required.

C Concentrator Vacuum Pump 2130-1 old

Vibrations in this unit appear normal. No actions required.

Monthly Equipment this Survey

7030 Ryburn Drive Millington, TN 38053 P. 901-873-5300 F. 901-873-5301

Middle Mix Bed Water Pump 191-07

Pump unit shows high vane pass vibration. Suspect the pump is operating outside of the BOP, or the unit has significant wear. Check operational parameters before replacing the pump. **Rated a Class II Defect.**

An Abbreviated Last Measurement Summary follows below:

Hi-Speed Industrial Service tests and inspects industrial machinery and equipment and makes recommendations concerning maintenance and repairs based on its experience in the field of industrial repair and maintenance. The information contained herein is provided as an opinion only, not as a guaranty or warranty of the matters discussed herein.

This completes our assessment of your equipment for this survey. Thank you for your business and don't hesitate to call if you have any comments or questions.

Sincerely,

David W. Shook Senior Reliability Specialist dshook@gohispeed.com *Hi-Speed* Industrial Service

Database: Arkema.rbm Station: PEROXIDE Route No. 4: ARK WK 2 Report Date: 25-Jul-19 08:17

		MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
C-20	3	- C-203 Comp (Old Joy)	(19-Jul-19) OVERALL LEVEL	1-20 KHz
11	_	MOTOR OB HOR	.021 In/Sec	.579 G-s
12	_	MOTOR OB VERT	.035 In/Sec	.689 G-s
13	_	MOTOR OB AXIAL	.044 In/Sec	.752 G-s
21	_	MOTOR IB HOR	.017 In/Sec	.095 G-s
22	_	MOTOR IB VERT	.017 In/Sec	.081 G-s
23	_	MOTOR IB AXIAL	.019 In/Sec	.674 G-s
 71м	_	COMP MALE SHAFT IB HOR	.030 In/Sec	
72M	_	COMP MALE SHAFT IB VERT	.033 In/Sec	
73M	_	COMP MALE SHAFT IB AXIAL	.049 In/Sec	
81M	_	COMP MALE SHAFT OB HOR	.049 In/Sec	
82M	_	COMP MALE SHAFT OB VERT	.041 In/Sec	
83M	_	COMP MALE SHAFT OB AXIAL	.034 In/Sec	
71F	_	COMP FEMALE SHAFT IB HOR	.032 In/Sec	
72F	_	COMP FEMALE SHAFT IB VERT	.056 In/Sec	
73F	_	COMP FEMALE SHAFT IB AXIAL	074 In/Sec	
81F	_	COMP FEMALE SHAFT OB HOR	.042 In/Sec	
82F	_	COMP FEMALE SHAFT OB VERT	.048 In/Sec	
83F	-	COMP FEMALE SHAFT OB AXIAL	.079 In/Sec	
c-20	1	- C-201 Comp (Old Centac)	(12-Jul-19)	
		_	OVERALL LEVEL	1-20 KHz
11	_	MOTOR OB HOR	.076 In/Sec	1.088 G-s
12	_	MOTOR OB VERT	.139 In/Sec	4.688 G-s
13	_	MOTOR OB AXIAL	.081 In/Sec	.327 G-s
21	_	MOTOR IB HOR	.093 In/Sec	.720 G-s
22	_	MOTOR IB VERT	.033 In/Sec	.229 G-s
23	_	MOTOR IB AXIAL	.061 In/Sec	1.073 G-s
71M	_	COMP MALE SHAFT IB HOR	.051 In/Sec	
72M	_	COMP MALE SHAFT IB VERT	.039 In/Sec	
73M	_	COMP MALE SHAFT IB AXIAL	.067 In/Sec	
81M	_	COMP MALE SHAFT OB HOR	.055 In/Sec	
82M	_	COMP MALE SHAFT OB VERT	.055 In/Sec	
83M	_	COMP MALE SHAFT OB AXIAL	.070 In/Sec	
71F	_	COMP FEMALE SHAFT IB HOR	.040 In/Sec	
72F	_	COMP FEMALE SHAFT IB VERT	.038 In/Sec	
73F	_	COMP FEMALE SHAFT IB AXIAL	.042 In/Sec	
81F	_	COMP FEMALE SHAFT OB HOR	.045 In/Sec	
82F	_	COMP FEMALE SHAFT OB VERT	.056 In/Sec	
83F	-	COMP FEMALE SHAFT OB AXIAL	.066 In/Sec	
C-20	2	- C-202 Comp (New Location)	(12-Jul-19)	
			OVERALL LEVEL	1-20 KHz
11	-	MOTOR OB HOR	.036 In/Sec	.886 G-s
12	-	MOTOR OB VERT	.104 In/Sec	.871 G-s

.048 In/Sec .330 G-s .054 In/Sec .679 G-s .089 In/Sec 1.067 G-s 13 - MOTOR OB AXIAL 21 - MOTOR IB HOR .089 In/Sec .089 In/Sec .041 In/Sec .028 In/Sec .050 In/Sec .069 In/Sec .040 In/Sec .048 In/Sec .064 In/Sec .052 In/Sec .054 In/Sec .040 In/Sec .049 In/Sec .091 In/Sec 22 - MOTOR IB VERT 23 - MOTOR IB AXIAL .161 G-s 23 - MOTOR IB AXIAL
71M - COMP MALE SHAFT IB HOR
72M - COMP MALE SHAFT IB VERT
73M - COMP MALE SHAFT IB AXIAL
81M - COMP MALE SHAFT OB HOR
82M - COMP MALE SHAFT OB VERT ALE SHAFT OB VERT MALE SHAFT OB AXIAL /1F - COMP FEMALE SHAFT IB HOR 72F - COMP FEMALE SHAFT IB VERT 73F - COMP FEMALE SHAFT OB HOR 81F - COMP FEMALE SHAFT OB VERT 83F - COMP FEMALE SHAFT OB VERT 83F - COMP FEMALE SHAFT OB AXIAL (19-Jul-19) new AC - INSTRUMENT AIR COMPRESSOR OVERALL LEVEL 1-20 KHz 12- MOTOR OB VERT.181 In/Sec.374 G-s13- MOTOR OB AXIAL.095 In/Sec.765 G-s13- MOTOR OB AXIAL.058 In/Sec.278 G-s21- MOTOR IB HOR.122 In/Sec.771 G-s22- MOTOR IB VERT.075 In/Sec.727 G-s23- MOTOR IB AXIAL.058 In/Sec.358 G-s71M- COMP MALE SHAFT IB HOR.098 In/Sec72M- COMP MALE SHAFT IB VERT.098 In/Sec73M- COMP MALE SHAFT OB HOR.146 In/Sec81M- COMP MALE SHAFT OB HOR.146 In/Sec82M- COMP MALE SHAFT OB VERT.207 In/Sec83M- COMP FEMALE SHAFT IB HOR.082 In/Sec71F- COMP FEMALE SHAFT IB VERT.131 In/Sec71F- COMP FEMALE SHAFT IB VERT.131 In/Sec71F- COMP FEMALE SHAFT IB VERT.132 In/Sec81F- COMP FEMALE SHAFT OB VERT.167 In/Sec82F- COMP FEMALE SHAFT OB VERT.167 In/Sec83F- COMP FEMALE SHAFT OB AXIAL.127 In/Sec192-03- TWO Stage Water Pump A VERT.144 .181 In/Sec .374 G-s .095 In/Sec .765 G-s 11 - MOTOR OB HOR 192-03 - Two Stage Water Pump A-WEST (19-Jul-19) OVERALL LEVEL 11 - MOTOR OUTBOARD HORIZONTAL .152 In/Sec .140 In/Sec 21 - MOTOR IB HORIZ .065 In/Sec 23 - motor inboard axial .192 In/Sec 71 - PUMP HORIZONTAL .063 In/Sec 72 - PUMP VERTICAL 191-07 - M MIX BED WATER PUMP 191-07 (19-Jul-19) OVERALL LEVEL11 - Chilled H2O Pump Motor OB Horizo.162 In/Sec21 - Chilled H2O Pump Motor IB Horizo.131 In/Sec23 - MOTOR INBOARD.060 In/Sec 71 - Chilled H2O Pump IB Horizontal .405 In/Sec 72 - PUMP VERTICAL .102 In/Sec 2130-1old - C Concentrator Vacuum Pump (19-Jul-19) OVERALL LEVEL 11 - Motor OB HOR .052 In/Sec

21	- Motor IB HOR	.068 In/Sec
23	- Motor IB AXIAL	.086 In/Sec
71	- Compressor IB HOR	.086 In/Sec
81	- Compressor OB Horiz	.111 In/Sec

Clarification Of Vibration Units: Acc --> G-s PK

K Vel --> In/Sec PK