HI-SPEED INDUSTRIAL SERVICE

MILLINGTON, TN

August 7, 2020

Arkema

Subject: August week 1 vibration service report

Most of the machines surveyed were found to be in good condition with the exception of the following:

QualiTest® uses a four step rating system for defects.

Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

Class II: Defect (s) present that may cause problem in long term (2-6 months.). Repair during normal maintenance scheduling. Continue to monitor.

Class III; Defect (s) present that may cause failure in short term (less than 2 months.). This should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.

Class IV; Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs

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 Specialists
Hi-Speed **Industrial Service**
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Weekly Peroxide Route Critical Equipment Observations

C Concentrator Vacuum Pump 2130-1
Vibrations appear to be normal this survey. No actions required.

Agitator, Hydrogenator C 7001-01
The highest motor overall is 0.179"/sec velocity peak for the inboard axial vibration. Data shows multiple lower frequency harmonics of shaft speed as well as non-synchronous peaks in the upper frequencies. The bearings and fits in the replacement motor could be in some distress. A 3x RPM vibration is dominant and could indicate a coupling or alignment issue.
Motor is rated a Class I Defect.

A/B Concentrator Vacuum Pump 57
This unit's vibration has dropped to 0.08"/sec velocity peak. No further action is indicated at this time.

Flash Vacuum Pump 2130-1
Vibrations appear to be normal this survey. No actions required.

Air Compressor C-201
Rotor bar vibrations are normal for this motor's history. The trend clearly shows that the vibrations vary considerably over time. We still believe these motors have possible weak rotor bar end connections that cause the vibrations to fluctuate higher due to loading. We will continue to monitor this unit for changes No actions required.

Air Compressor C-202
Rotor bar vibrations are low for this motor's history. The trend clearly shows that the vibrations vary considerably over time. We are still watching an increase in acceleration for the compressor section. Rated a Class I Defect this survey. No immediate actions required at this time.

Air Compressor C-203
Rotor bar vibrations are low for this motor's history. The trend clearly shows that the vibrations vary considerably over time. We still believe these motors have possible weak rotor bar end connections that cause the vibrations to fluctuate higher due to loading. No actions required.

Instrument Air Compressor
The male and female shaft vibrations still seem to show gear mesh and harmonics as well as a beat vibration occasionally. The female shaft inboard horizontal overall vibration has increased to near 10 g's RMS. Two harmonic vibrations at near 1500 and 1600 Hz are beating near 120 Hz. The beat is strong since the vibrations are close and of nearly equal amplitude. We will keep a close eye on this unit going forward. **Rated a Class I Defect for now.**

Air Compressor NASH A 201-08A
Highest vibration is still in the pump itself at just over 0.287”/sec velocity peak for the outboard vertical. **Rated a Class I Defect.**

D Hydrogenator Agitator 9002-10
Vibration data shows an increase in vibrations this survey. Highest amplitude is 0.346”/sec velocity peak for the top bearing plate. **Still rated a Class I Defect.**

Monthly Peroxide Route Equipment Observations

ABC Secondary Filter Feed Pump South 7004-24
The pump has vibrations in acceleration at near 3 g’s RMS. The spectrum looks to have an elevated noise floor with spectral peaks. We suspect the unit suffers from early bearing defects as well as pump cavitation. Ensure the bearings are lubricated on schedule and check the pump parameters to make sure it is loaded properly. **Rated a Class I Defect.**

Semi-Annual 70% Peroxide Pump Equipment Observations

B Tank Carload Pump 274-18
The motor Has a 1x RPM vibration in the horizontal at just under 0.5”/sec velocity peak. The pump vibration is half that and consists of a 1x RPM vibration and a 6x RPM vibration, thought to be vane pass. We suspect the unit has a coupling or alignment issue. Inspect the coupling, alignment, foot bolt torque, existing shims, and the unit structure for defects. Replace or repair as needed. **Rated a Class II Defect.**

Vacuum Receiver Pump West P-70
The pump bearing vibrations show 2 and 3 g’s RMS overall. We suspect the units have early rolling element defects. This pump might need more frequent analysis. No immediate action required. **Rated a Class I Defect for now**.

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Sincerely,

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

Database: Arkema.rbm
Station: PEROXIDE
Route No. 3: ARK WK 1
Report Date: 07-Aug-20 14:23

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
2130-1old - C Concentrator Vacuum Pump	(07-Aug-20)	
	OVERALL LEVEL	1-20 KHz
11 - Motor OB HOR	.075 In/Sec	.460 G-s
21 - Motor IB HOR	.068 In/Sec	.463 G-s
23 - Motor IB AXIAL	.187 In/Sec	.212 G-s
71 - Compressor IB HOR	.115 In/Sec	.901 G-s
81 - Compressor OB Horiz	.161 In/Sec	.795 G-s
83 - Compressor OB Axial	.112 In/Sec	1.345 G-s
7000-01 - AGITATOR,HYDROGENATOR C	(07-Aug-20)	
	OVERALL LEVEL	1-20 KHZ
01 - DRIVESHAFT BRG-NORTH-SOUTH	.040 In/Sec	.037 G-s
02 - DRIVESHAFT BRG-EAST-WEST	.042 In/Sec	.058 G-s
03 - DRIVESHAFT BRG-VERTICAL	.047 In/Sec	.052 G-s
11 - C Hydro Agitator MOTOR OB HORIZ	.102 In/Sec	.647 G-s
12 - C Hydro Agitator MOTOR OB VERT	.120 In/Sec	.947 G-s
13 - C Hydro Agitator Motor OB Axial	.174 In/Sec	.374 G-s
21 - C Hydro Agitator MOTOR IB HORIZ	.115 In/Sec	.221 G-s
22 - C Hydro Agitator MOTOR IB VERT	.178 In/Sec	.768 G-s
23 - C Hydro Agitator Motor IB Axial	.179 In/Sec	.339 G-s
31 - C Hydro Agitator GrBx In Horizon	.096 In/Sec	.602 G-s
32 - C Hydro Agitator GrBx In VERT	.091 In/Sec	.673 G-s
33 - C Hydro Agitator GrBx In Axial	.054 In/Sec	.415 G-s
41 - C Hydro Agitator GrBx Top HZ E-W	.046 In/Sec	.558 G-s
42 - C Hydro Agitator GrBx TOP HZ N-S	.034 In/Sec	.744 G-s
51 - C Hydro Agitator GrBx BOT HZ E-W	.019 In/Sec	.450 G-s
52 - C Hydro Agitator GrBx BOT HZ N-S	.021 In/Sec	.685 G-s
53 - C Hydro Agitator GrBx Top Axial	.054 In/Sec	.476 G-s
57 - A/B Concentr Vac Pmp-var RPM	(07-Aug-20)	
	OVERALL LEVEL	1-20 KHz
11 - Motor OB HOR	.049 In/Sec	.425 G-s
12 - Motor OB VERT	.056 In/Sec	.204 G-s
21 - Motor IB HOR	.069 In/Sec	.237 G-s
23 - Motor IB AXIAL	.056 In/Sec	.164 G-s
71 - Compressor IB HOR	.078 In/Sec	.229 G-s
81 - Compressor OB Horiz	.080 In/Sec	.317 G-s
83 - Compressor OB Axial	.030 In/Sec	.304 G-s
2130-1 - FLASH VAP VAC PUMP-var speed	(07-Aug-20)	
	OVERALL LEVEL	1-20 KHz
11 - Motor OB HOR	.044 In/Sec	.389 G-s
12 - Motor OB VERT	.032 In/Sec	.392 G-s
21 - Motor IB HOR	.038 In/Sec	1.191 G-s
22 - Motor IB VERT	.045 In/Sec	.761 G-s
23 - Motor IB AXIAL	.058 In/Sec	.776 G-s
71 - Compressor IB HOR	.056 In/Sec	.331 G-s
72 - Compressor IB VERT	.068 In/Sec	.459 G-s

81	- Compressor OB Horiz	.074 In/Sec	.317 G-s
82	- Compressor OB VERT	.086 In/Sec	.380 G-s
83	- Compressor OB Axial	.069 In/Sec	.484 G-s

7007-24	- ABC SEC. FILT FEED PMP-SOUTH	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.041 In/Sec	.332 G-s
21	- MOTOR INBOARD HORIZONTAL	.055 In/Sec	1.293 G-s
23	- MOTOR INBOARD AXIAL	.038 In/Sec	.672 G-s
71	- PUMP HORIZONTAL	.161 In/Sec	2.112 G-s
72	- PUMP VERTICAL	.122 In/Sec	2.758 G-s

2130-6	- ABC SEC FILT FEED PUMP-NORTH	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.075 In/Sec	.148 G-s
21	- MOTOR INBOARD HORIZONTAL	.075 In/Sec	.081 G-s
23	- MOTOR INBOARD AXIAL	.086 In/Sec	.150 G-s
71	- PUMP HORIZONTAL	.131 In/Sec	.438 G-s
72	- PUMP VERTICAL	.090 In/Sec	.598 G-s

9001-1	- EAST OXIDIZER FEED PUMP	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.062 In/Sec	.064 G-s
21	- MOTOR INBOARD HORIZONTAL	.060 In/Sec	.297 G-s
23	- MOTOR INBOARD AXIAL	.051 In/Sec	.117 G-s
71	- PUMP HORIZONTAL	.127 In/Sec	.465 G-s
72	- PUMP VERTICAL	.112 In/Sec	.262 G-s

9001-2	- MIDDLE OXIDIZER FEED PUMP	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.059 In/Sec	.169 G-s
21	- MOTOR INBOARD HORIZONTAL	.039 In/Sec	.292 G-s
23	- MOTOR INBOARD AXIAL	.044 In/Sec	.195 G-s
71	- PUMP HORIZONTAL	.071 In/Sec	.213 G-s
72	- PUMP VERTICAL	.056 In/Sec	.218 G-s

7016-11	- WEST OXIDIZER FEED PUMP	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.058 In/Sec	.242 G-s
21	- MOTOR INBOARD HORIZONTAL	.024 In/Sec	.509 G-s
23	- MOTOR INBOARD AXIAL	.024 In/Sec	.202 G-s
71	- PUMP HORIZONTAL	.087 In/Sec	.894 G-s
72	- PUMP VERTICAL	.086 In/Sec	1.024 G-s

234-01	- CHILL WATER PUMP 234-01	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- Chilled H2O Pump Motor OB Horizo	.044 In/Sec	1.196 G-s
		OVERALL LEVEL	1-20 KHZ
11L	- MOTOR HORZ OUTBOARD - L-FREQ	.042 In/Sec	1.138 G-s
		OVERALL LEVEL	1-20 KHz
21	- Chilled H2O Pump Motor IB Horizo	.042 In/Sec	1.100 G-s
23	- MOTOR INBOARD	.029 In/Sec	
		OVERALL LEVEL	1-20 KHZ
23L	- MOTOR AXIAL INBOARD - L-FREQ	.029 In/Sec	.865 G-s
		OVERALL LEVEL	1-20 KHz
71	- Chilled H2O Pump IB Horizontal	.063 In/Sec	.217 G-s
72	- PUMP VERTICAL	.061 In/Sec	.191 G-s

C-203	- C-203 Comp	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OB HOR	.028 In/Sec	.887 G-s
12	- MOTOR OB VERT	.030 In/Sec	.446 G-s
21	- MOTOR IB HOR	.047 In/Sec	.502 G-s
22	- MOTOR IB VERT	.032 In/Sec	.380 G-s
23	- MOTOR IB AXIAL	.017 In/Sec	.296 G-s
		OVERALL LEVEL	1-20 KHZ
71M	- COMP MALE SHAFT IB HOR	.040 In/Sec	2.629 G-s
72M	- COMP MALE SHAFT IB VERT	.040 In/Sec	3.183 G-s
73M	- COMP MALE SHAFT IB AXIAL	.042 In/Sec	2.561 G-s
81M	- COMP MALE SHAFT OB HOR	.052 In/Sec	2.443 G-s
82M	- COMP MALE SHAFT OB VERT	.052 In/Sec	1.785 G-s
71F	- COMP FEMALE SHAFT IB HOR	.039 In/Sec	3.617 G-s
72F	- COMP FEMALE SHAFT IB VERT	.045 In/Sec	.982 G-s
73F	- COMP FEMALE SHAFT IB AXIAL	.065 In/Sec	3.416 G-s
81F	- COMP FEMALE SHAFT OB HOR	.047 In/Sec	2.212 G-s
82F	- COMP FEMALE SHAFT OB VERT	.041 In/Sec	.691 G-s
9000-01	- D HYDROGENATOR FD PUMP- WEST	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.035 In/Sec	.425 G-s
21	- MOTOR INBOARD HORIZONTAL	.035 In/Sec	.378 G-s
23	- MOTOR INBOARD AXIAL	.037 In/Sec	.306 G-s
71	- PUMP HORIZONTAL	.087 In/Sec	.544 G-s
72	- PUMP VERTICAL	.056 In/Sec	.504 G-s
236-04A	- HYDROGNTOR PRECOOLER FD PUMP	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZ	.043 In/Sec	.323 G-s
21	- MOTOR INBOARD HORIZ	.074 In/Sec	.497 G-s
23	- MOTOR INBOARD AXIAL	.034 In/Sec	.295 G-s
71	- PUMP HORIXONTAL	.107 In/Sec	.406 G-s
72	- PUMP VERTICAL	.064 In/Sec	.301 G-s
C-202	- C-202 Comp	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OB HOR	.041 In/Sec	.784 G-s
12	- MOTOR OB VERT	.106 In/Sec	.408 G-s
21	- MOTOR IB HOR	.060 In/Sec	.417 G-s
22	- MOTOR IB VERT	.090 In/Sec	.821 G-s
23	- MOTOR IB AXIAL	.039 In/Sec	.461 G-s
		OVERALL LEVEL	1-20 KHZ
71M	- COMP MALE SHAFT IB HOR	.035 In/Sec	1.089 G-s
72M	- COMP MALE SHAFT IB VERT	.042 In/Sec	1.384 G-s
73M	- COMP MALE SHAFT IB AXIAL	.089 In/Sec	1.549 G-s
81M	- COMP MALE SHAFT OB HOR	.043 In/Sec	1.922 G-s
82M	- COMP MALE SHAFT OB VERT	.057 In/Sec	2.822 G-s
71F	- COMP FEMALE SHAFT IB HOR	.036 In/Sec	2.915 G-s
72F	- COMP FEMALE SHAFT IB VERT	.052 In/Sec	.561 G-s
73F	- COMP FEMALE SHAFT IB AXIAL	.087 In/Sec	8.212 G-s
81F	- COMP FEMALE SHAFT OB HOR	.064 In/Sec	2.814 G-s
82F	- COMP FEMALE SHAFT OB VERT	.055 In/Sec	1.313 G-s
C-201	- C-201 Comp	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz

11	- MOTOR OB HOR	.085 In/Sec	.199 G-s
12	- MOTOR OB VERT	.119 In/Sec	2.258 G-s
21	- MOTOR IB HOR	.097 In/Sec	.671 G-s
22	- MOTOR IB VERT	.045 In/Sec	.601 G-s
23	- MOTOR IB AXIAL	.068 In/Sec	1.110 G-s
		OVERALL LEVEL	1-20 KHZ
71M	- COMP MALE SHAFT IB HOR	.039 In/Sec	1.027 G-s
72M	- COMP MALE SHAFT IB VERT	.051 In/Sec	2.453 G-s
73M	- COMP MALE SHAFT IB AXIAL	.076 In/Sec	2.656 G-s
81M	- COMP MALE SHAFT OB HOR	.044 In/Sec	1.544 G-s
82M	- COMP MALE SHAFT OB VERT	.049 In/Sec	1.789 G-s
71F	- COMP FEMALE SHAFT IB HOR	.052 In/Sec	2.289 G-s
72F	- COMP FEMALE SHAFT IB VERT	.043 In/Sec	1.076 G-s
73F	- COMP FEMALE SHAFT IB AXIAL	.054 In/Sec	1.643 G-s
81F	- COMP FEMALE SHAFT OB HOR	.057 In/Sec	1.221 G-s
82F	- COMP FEMALE SHAFT OB VERT	.051 In/Sec	1.826 G-s

new AC	- INSTRUMENT AIR COMPRESSOR	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OB HOR	.134 In/Sec	1.395 G-s
12	- MOTOR OB VERT	.099 In/Sec	.689 G-s
13	- MOTOR OB AXIAL	.065 In/Sec	.801 G-s
21	- MOTOR IB HOR	.140 In/Sec	1.200 G-s
22	- MOTOR IB VERT	.085 In/Sec	1.066 G-s
23	- MOTOR IB AXIAL	.065 In/Sec	.810 G-s
		OVERALL LEVEL	1-20 KHZ
71F	- COMP FEMALE SHAFT IB HOR	.285 In/Sec	9.846 G-s
72F	- COMP FEMALE SHAFT IB VERT	.159 In/Sec	3.125 G-s
73F	- COMP FEMALE SHAFT IB AXIAL	.167 In/Sec	3.103 G-s
81F	- COMP FEMALE SHAFT OB HOR	.143 In/Sec	3.394 G-s
82F	- COMP FEMALE SHAFT OB VERT	.320 In/Sec	6.728 G-s
83F	- COMP FEMALE SHAFT OB AXIAL	.177 In/Sec	3.724 G-s
71M	- COMP MALE SHAFT IB HOR	.131 In/Sec	5.745 G-s
72M	- COMP MALE SHAFT IB VERT	.182 In/Sec	7.315 G-s
73M	- COMP MALE SHAFT IB AXIAL	.142 In/Sec	1.804 G-s
81M	- COMP MALE SHAFT OB HOR	.234 In/Sec	8.032 G-s
82M	- COMP MALE SHAFT OB VERT	.266 In/Sec	2.294 G-s
83M	- COMP MALE SHAFT OB AXIAL	.312 In/Sec	10.39 G-s

201-08A	- COMPRESSOR,NASH A 201-08A	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- Nash Compr A Motor OB Horiz	.069 In/Sec	.181 G-s
12	- Nash Compr A Motor OB Vertical	.071 In/Sec	.095 G-s
13	- Nash Compr A Motor OB Axial	.141 In/Sec	.095 G-s
21	- Nash Compr A Motor IB Horiz	.076 In/Sec	.091 G-s
22	- Nash Compr A Motor IB VERT	.086 In/Sec	.104 G-s
23	- Nash Compr A Motor IB AXIAL	.131 In/Sec	.112 G-s
71	- Nash Compr A COMP IB HORIZ	.138 In/Sec	.971 G-s
72	- Nash Compr A Compressor IB Verti	.220 In/Sec	1.191 G-s
73	- Nash Compr A COMP IB AXIAL	.151 In/Sec	.292 G-s
81	- Nash Compr A COMP OB HORIZ	.162 In/Sec	.579 G-s
82	- Nash Compr A Compressor OB Verti	.287 In/Sec	.688 G-s
83	- Nash Compr A Compressor OB Axial	.159 In/Sec	.651 G-s

9002-10	- D-HYDROGENATOR AGITATOR	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.090 In/Sec	.133 G-s

21	- MOTOR INBOARD HORIZONTAL	.072 In/Sec	.140 G-s
23	- MOTOR INBOARD AXIAL	.052 In/Sec	.104 G-s
31	- GEARBOX INPUT SHAFT -HORIZONTAL	.252 In/Sec	.577 G-s
51	- GEARBOX TOP PLATE- E-W	.294 In/Sec	.207 G-s
52	- GEARBOX TOP PLATE- N-S	.346 In/Sec	.261 G-s
53	- GEARBOX OUTPUT TOP -VERTICAL	.137 In/Sec	.649 G-s
61	- GEARBOX BOTTOM E-W-HORIZONTAL	.074 In/Sec	.116 G-s
81	- AGIT INTERMED BRG @ SEAL- N-S	.049 In/Sec	.022 G-s
82	- AGIT INTERMED BRG @ SEAL- E-W	.033 In/Sec	.024 G-s
83	- AGIT INTERMED BRG @ SEAL- VERT	.040 In/Sec	.153 G-s

Clarification Of Vibration Units:
Acc --> G-s PK
Vel --> In/Sec PK

Abbreviated Last Measurement Summary

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Database: Arkema.rbm
Station: PEROXIDE 70% H202 PUMPS
Route No. 1: 70% PUMPS
Report Date: 07-Aug-20 14:24

MEASUREMENT POINT		OVERALL LEVEL	HFD / VHFD
401-04	- 265C STABILITY TANK	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.040 In/Sec	.290 G-s
21	- MOTOR INBOARD HORIZONTAL	.038 In/Sec	.360 G-s
23	- MOTOR INBOARD AXIAL	.021 In/Sec	.278 G-s
71	- PUMP HORIZONTAL	.024 In/Sec	.161 G-s
72	- PUMP VERTICAL	.022 In/Sec	.177 G-s
401-07	- 265D STABILITY TANK	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.031 In/Sec	.232 G-s
21	- MOTOR INBOARD HORIZONTAL	.012 In/Sec	.251 G-s
23	- MOTOR INBOARD AXIAL	.039 In/Sec	.107 G-s
71	- PUMP HORIZONTAL	.044 In/Sec	.310 G-s
72	- PUMP VERTICAL	.049 In/Sec	.688 G-s
260-13	- 265E STABILITY TANK	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.082 In/Sec	.241 G-s
21	- MOTOR INBOARD HORIZONTAL	.109 In/Sec	.454 G-s
23	- MOTOR INBOARD AXIAL	.096 In/Sec	.562 G-s
71	- PUMP HORIZONTAL	.078 In/Sec	.403 G-s
72	- PUMP VERTICAL	.063 In/Sec	.871 G-s
260-25	- 265F STABILITY TANK	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.059 In/Sec	.278 G-s
21	- MOTOR INBOARD HORIZONTAL	.053 In/Sec	.353 G-s
23	- MOTOR INBOARD AXIAL	.031 In/Sec	.202 G-s
71	- PUMP HORIZONTAL	.049 In/Sec	.118 G-s
72	- PUMP VERTICAL	.021 In/Sec	.092 G-s

7073-02	- 245B STABILITY TANK	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.072 In/Sec	.0016 G-s
21	- MOTOR INBOARD HORIZONTAL	.033 In/Sec	.230 G-s
23	- MOTOR INBOARD AXIAL	.019 In/Sec	.181 G-s
71	- PUMP HORIZONTAL	.062 In/Sec	.220 G-s
72	- PUMP VERTICAL	.027 In/Sec	.266 G-s
247-11	- A OVERRUN PUMP	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.029 In/Sec	.162 G-s
21	- MOTOR INBOARD HORIZONTAL	.033 In/Sec	.141 G-s
23	- MOTOR INBOARD AXIAL	.028 In/Sec	.113 G-s
71	- PUMP HORIZONTAL	.034 In/Sec	.125 G-s
72	- PUMP VERTICAL	.051 In/Sec	.161 G-s
249-25	- B CONC PRODUCT PUMP, SOUTH	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.032 In/Sec	.099 G-s
21	- MOTOR INBOARD HORIZONTAL	.028 In/Sec	.168 G-s
23	- MOTOR INBOARD AXIAL	.031 In/Sec	.067 G-s
71	- PUMP HORIZONTAL	.018 In/Sec	.077 G-s
72	- PUMP VERTICAL	.017 In/Sec	.094 G-s
274-15	- B TANK CAR LOAD PUMP	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.496 In/Sec	.151 G-s
21	- MOTOR INBOARD HORIZONTAL	.456 In/Sec	.179 G-s
23	- MOTOR INBOARD AXIAL	.228 In/Sec	.157 G-s
71	- PUMP HORIZONTAL	.236 In/Sec	.644 G-s
72	- PUMP VERTICAL	.140 In/Sec	1.139 G-s
274-28	- C TANK CAR LOAD PUMP	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.142 In/Sec	.221 G-s
21	- MOTOR INBOARD HORIZONTAL	.154 In/Sec	.303 G-s
23	- MOTOR INBOARD AXIAL	.065 In/Sec	.190 G-s
71	- PUMP HORIZONTAL	.170 In/Sec	.711 G-s
72	- PUMP VERTICAL	.127 In/Sec	.778 G-s
41	- VAC RECEIVR PUMP EAST -Durco	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.259 In/Sec	.412 G-s
21	- MOTOR INBOARD HORIZONTAL	.240 In/Sec	.336 G-s
23	- MOTOR INBOARD AXIAL	.069 In/Sec	.282 G-s
71	- PUMP HORIZONTAL	.051 In/Sec	1.028 G-s
72	- PUMP VERTICAL	.067 In/Sec	1.610 G-s
42	- VAC RECEIVR PUMP WEST -Durco	(07-Aug-20)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZONTAL	.055 In/Sec	.604 G-s
21	- MOTOR INBOARD HORIZONTAL	.059 In/Sec	.988 G-s
23	- MOTOR INBOARD AXIAL	.067 In/Sec	.080 G-s
71	- PUMP HORIZONTAL	.074 In/Sec	3.161 G-s
72	- PUMP VERTICAL	.115 In/Sec	2.101 G-s

Clarification Of Vibration Units:

Acc	**-->**	**G-s**	**PK**
Vel	**-->**	**In/Sec**	**PK**