



MILLINGTON, TN

October 30, 2019

Blues City Brewery

Subject: October vibration service

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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Reportable equipment

Air Compressor 4

The unit vibrations still seems to be dominated by lobe passing fundamental frequency and harmonics. Check the fasteners for the motor and compressor just to be sure. We will keep an eye on it closely.

Rated a Class I Defect.

Boiler Feed Water Pump 2 Middle

The pump has a 1x RPM vibration at 0.49"/sec velocity peak at the pump top. Check for loose fasteners, poor condition of the shaft coupling or alignment, and or wear in the pump. **Rated a Class II Defect.**

Boiler Feed Water Pump 1 South

The pump has a 1x RPM vibration similar the middle pump but at 0.53"/sec. Check for loose fasteners, poor condition of the shaft coupling or alignment, and or wear in the pump only if time allows. **Rated a Class I Defect.**

Boiler 3 Fan Motor Bearings

Possible bearing defect frequencies are still in the motor; which look to be from fluting. Increase in the acceleration trend. Expect to change out the bearings in the future. **Rated a Class II Defect.**

Service Water Pump 3

Vibrations indicate possible electrical problem such as an air gap issue. Check electrical connections and motor for soft foot. **Rated a Class II Defect.**

RO Water Pump 2

This unit still appears to have a vibration at near 124 Hz; however the overall vibration dropped to 0.8"/sec velocity peak. There could be wear in the pump, or there could be a flow issue. We recommend further inspection and adjustments of flow related controls, filters, screens or piping. Pump replacement might be considered to reduce the vibration. **Rated a Class II Defect.**

HVAC Hot Water Circulator Pump

The unit vibrations are still at or near 0.5"/sec velocity peak. Ensure the coupling and alignment are good, and that there is no soft foot or pipe strain. **Rated a Class II Defect.**

Chill Water Wort A

Data indicates distress in the pump bearings. Be prepared to replace the pump in the near future. **Rated a Class II Defect.**

Filter Cellar Chill Water Circulator Pump 1

High vibrations are still at 2x line frequency and could indicate an air gap issue in the motor. Air gap issues are variations in the distance between the surface of the rotor and stator. This could be caused by poor machining of the motor housing and end bells or possibly a soft foot. Unbalanced electrical phases can duplicate the vibration also. Start inspections with a precision alignment and soft foot check, followed by a motor phase and voltage analysis up to and including PDMA if necessary. **Rated a Class III Defect.**

G Cellar #5 Cold Glycol Pump

Motor data still shows multiple shaft speed harmonics throughout. Inspect the motor bearing, shaft and fits for looseness. Check all fasteners. **Rated a Class II Defect.**

Last Monitored Machine List

Database: Blues_city.rbm
 Station: POWER HOUSE
 Report Date: 30-Oct-19 15:02
 Report Interval: 30-Sep-19 To 30-Oct-19

PERIODIC VIBRATION TECHNOLOGY

Collected Machine...

MACHINE ID	DESCRIPTION	NUMBER OF POINTS	LATEST DATE
250 COMP	COMPRESSOR #3 - 250HP	11 OUT OF 12	24-Oct-19
150HP	COMPRESSOR #4 - 150HP	12 OUT OF 12	24-Oct-19
COMP 5	COMPRESSOR #5	11 OUT OF 12	24-Oct-19
BFW - M	BOILER FEED WATER PUMP MID 2	10 OUT OF 10	24-Oct-19
BFW - 1S	BOILER FEED WATER PUMP S 1	10 OUT OF 10	24-Oct-19
FAN 1	BOILER FAN #1	8 OUT OF 8	24-Oct-19
FAN 3	BOILER FAN #3 - 1780 RPM Max	10 OUT OF 10	24-Oct-19
CR PUMP 1	CARBON RECIRC PUMP	10 OUT OF 10	24-Oct-19
YB PUMP 1	YELLOW BOX FILTERED WATER	10 OUT OF 10	30-Sep-19
SW PUMP 8	SERVICE WATER PUMP 8	10 OUT OF 10	24-Oct-19
SW PUMP 3	SERVICE WATER PUMP 3	10 OUT OF 10	24-Oct-19
RO 2	RO WATER PUMP 2	10 OUT OF 10	24-Oct-19
600HP	AMMONIA COMP #1	17 OUT OF 18	24-Oct-19
ACOMP #7	AMMONIA COMP - #2	18 OUT OF 18	24-Oct-19
800HP	AMMONIA COMP #3	20 OUT OF 20	30-Sep-19

Missed Machine...

MACHINE ID	DESCRIPTION	
175 COMP	COMPRESSOR #2 - 175HP	0 OUT OF 12
COMP 1	COMPRESSOR #1	0 OUT OF 12
COMP 6	COMPRESSOR #6	0 OUT OF 12
BFW - 3N	BOILER FEED WATER PUMP N 3	0 OUT OF 11
FAN 2	BOILER FAN #2	0 OUT OF 5
MAKEUP #1	CHILLED WATER MAKEUP PUMP 1	0 OUT OF 10
MAKEUP #2	CHILLED WATER MAKEUP PUMP 2	0 OUT OF 10
MAKEUP #3	CHILLED WATER MAKEUP PUMP 3	0 OUT OF 10
SW PUMP 1	SERVICE WATER PUMP 1	0 OUT OF 10
SW PUMP 2	SERVICE WATER PUMP 2	0 OUT OF 10
SW PUMP 4	SERVICE WATER PUMP 4	0 OUT OF 10
SW PUMP 5	SERVICE WATER PUMP 5	0 OUT OF 10
SW PUMP 6	SERVICE WATER PUMP 6	0 OUT OF 10
RO 1	RO WATER PUMP 1	0 OUT OF 10
CW PUMP 1	CHILLED WATER FEED PUMP	0 OUT OF 10

Monitored Point Total = 177 OUT OF 332

Monitored Machine Total = 15 OUT OF 30

Last Monitored Machine List

Database: Blues_city.rbm
 Station: UPPER FLOORS
 Report Date: 30-Oct-19 15:02
 Report Interval: 30-Sep-19 To 30-Oct-19

PERIODIC VIBRATION TECHNOLOGY

Collected Machine...

MACHINE ID	DESCRIPTION	NUMBER OF POINTS	LATEST DATE
2NHWP	2ND FLOOR N. HOT WATER PUMP	10 OUT OF 10	24-Oct-19
GF-VP1	GALLERY DA VAC PUMP-SKID 1	10 OUT OF 10	30-Sep-19
GF-DP1	GALLERY DA DISCH PUMP-SKID 1	5 OUT OF 5	30-Sep-19
GF-CP1	GALLERY DA CIRC PUMP- SKID 1	5 OUT OF 5	30-Sep-19

Missed Machine...

MACHINE ID	DESCRIPTION	
4GB	4th FLOOR GRAIN BLOWER	0 OUT OF 10
3MM-N	3RD FLOOR MALT MILL #3 - N	0 OUT OF 59
3MM-S	3RD FLOOR MALT MILL#2 - S	0 OUT OF 59
2SHWP	2ND FLOOR S. HOT WATER PUMP	0 OUT OF 10
GF-VP2	GALLERY DA VAC PUMP-SKID 2	0 OUT OF 10
GF-DP2	GALLERY DA DISCH PUMP-SKID 2	0 OUT OF 5
GF-CP2	GALLERY DA CIRC PUMP- SKID 2	0 OUT OF 5

Monitored Point Total = 30 OUT OF 188

Monitored Machine Total = 4 OUT OF 11

Last Monitored Machine List

Database: Blues_city.rbm
 Station: BREWING 1ST FLOOR
 Report Date: 30-Oct-19 15:02
 Report Interval: 30-Sep-19 To 30-Oct-19

PERIODIC VIBRATION TECHNOLOGY

No Collected Machine...

Missed Machine...

MACHINE ID	DESCRIPTION	
LT-L1	LAUDER TUN - LEFT SIDE	0 OUT OF 14
LT-R1	LAUDER TUN - RIGHT SIDE	0 OUT OF 14

Last Monitored Machine List

Database: Blues_city.rbm
 Station: BREWING BASEMENT
 Report Date: 30-Oct-19 15:02

Report Interval: 30-Sep-19 To 30-Oct-19

PERIODIC VIBRATION TECHNOLOGY

Collected Machine...

MACHINE ID	DESCRIPTION	NUMBER OF POINTS	LATEST DATE
KCP2	KETTLE CIRC PUMP 2	10 OUT OF 10	30-Sep-19

Missed Machine...

MACHINE ID	DESCRIPTION	
CIP1	CIP PUMP @ WORT TRANS PUMP	0 OUT OF 10
WORTA	WORT TRANSFER PUMP A	0 OUT OF 10
MASH TRANS	MASH TUN TRANSFER PUMP	0 OUT OF 10
TNK 63 PMP	TANK 63 SUCROSE PUMP	0 OUT OF 10
KCP1	KETTLE CIRC PUMP 1	0 OUT OF 10
BKP1	BREW KETTLE PUMP (IN PIT)	0 OUT OF 10
SGB-A	SPENT GRAIN BLOWER A	0 OUT OF 10

Monitored Point Total = 10 OUT OF 80

Monitored Machine Total = 1 OUT OF 8

Last Monitored Machine List

Database: Blues_city.rbm

Station: GRAIN TRANSFER

Report Date: 30-Oct-19 15:02

Report Interval: 30-Sep-19 To 30-Oct-19

PERIODIC VIBRATION TECHNOLOGY

Collected Machine...

MACHINE ID	DESCRIPTION	NUMBER OF POINTS	LATEST DATE
VB-E	VACUUM BLOWER EAST	5 OUT OF 10	23-Oct-19
VB-W	VACUUM BLOWER WEST	2 OUT OF 10	23-Oct-19

Missed Machine...

MACHINE ID	DESCRIPTION	
GUB-N	GRAIN UNLOAD BLOWER NORTH	0 OUT OF 10
GUB-S	GRAIN UNLOAD BLOWER SOUTH	0 OUT OF 10

Monitored Point Total = 7 OUT OF 40

Monitored Machine Total = 2 OUT OF 4

Last Monitored Machine List

Database: Blues_city.rbm

Station: SUGAR PUMPS

Report Date: 30-Oct-19 15:02
Report Interval: 30-Sep-19 To 30-Oct-19

PERIODIC VIBRATION TECHNOLOGY

Collected Machine...

MACHINE ID	DESCRIPTION	NUMBER OF POINTS	LATEST DATE
V3	SUGAR TANK VIKING PUMP #3	14 OUT OF 17	24-Oct-19
V4	SUGAR TANK VIKING PUMP #4	14 OUT OF 17	24-Oct-19
V5	SUGAR TANK VIKING PUMP #5	11 OUT OF 16	24-Oct-19

No Missed Machine...

Monitored Point Total = 39 OUT OF 50
Monitored Machine Total = 3 OUT OF 3
Last Monitored Machine List

Database: Blues_city.rbm
Station: ALCOHOL PUMP ROOM
Report Date: 30-Oct-19 15:02
Report Interval: 30-Sep-19 To 30-Oct-19

PERIODIC VIBRATION TECHNOLOGY

Collected Machine...

MACHINE ID	DESCRIPTION	NUMBER OF POINTS	LATEST DATE
SK1 RO1	SKID 1 - RO PUMP #1	5 OUT OF 5	24-Oct-19
SK1 RO4	SKID 1 - RO PUMP #4	5 OUT OF 5	24-Oct-19
SK1 RO3	SKID 1 - RO PUMP #3	10 OUT OF 10	24-Oct-19
SK1 RO2	SKID 1 - RO PUMP #2	10 OUT OF 10	30-Sep-19
SK2 RO1	SKID 2 - RO PUMP #1	5 OUT OF 5	24-Oct-19
SK2 RO4	SKID 2 - RO PUMP #4	5 OUT OF 5	24-Oct-19
SK2 RO3	SKID 2 - RO PUMP #3	10 OUT OF 10	24-Oct-19
SK2 RO2	SKID 2 - RO PUMP #2	10 OUT OF 10	24-Oct-19

No Missed Machine...

Monitored Point Total = 60 OUT OF 60
Monitored Machine Total = 8 OUT OF 8
Last Monitored Machine List

Database: Blues_city.rbm
Station: ADMINISTRATIVE AREA
Report Date: 30-Oct-19 15:02
Report Interval: 30-Sep-19 To 30-Oct-19

PERIODIC VIBRATION TECHNOLOGY

Collected Machine...

MACHINE ID	DESCRIPTION	NUMBER OF POINTS	LATEST DATE
HVAC COLD	HVAC COLD GLYCOL CIRC PUMP	10 OUT OF 10	30-Sep-19
HVAC HOT	HVAC HOT WATER CIRC PUMP	10 OUT OF 10	24-Oct-19

No Missed Machine...

Monitored Point Total = 20 OUT OF 20
Monitored Machine Total = 2 OUT OF 2
Last Monitored Machine List

Database: Blues_city.rbm
Station: FILTER CELLAR
Report Date: 30-Oct-19 15:02
Report Interval: 30-Sep-19 To 30-Oct-19

PERIODIC VIBRATION TECHNOLOGY

Collected Machine...

MACHINE ID	DESCRIPTION	NUMBER OF POINTS	LATEST DATE
CHILL 1	CHILL WATER CIRC PUMP #1	10 OUT OF 10	24-Oct-19
W COOL A	CHILL WATER WORT COOL SIDE A	10 OUT OF 10	30-Sep-19
WARM GLY 1	WARM GLYCOL PUMP #1	10 OUT OF 10	24-Oct-19
WARM GLY 2	WARM GLYCOL PUMP #2	10 OUT OF 10	24-Oct-19

Missed Machine...

MACHINE ID	DESCRIPTION	NUMBER OF POINTS
CHILL 2	CHILL WATER CIRC PUMP #2	0 OUT OF 10
CHILL 3	CHILL WATER CIRC PUMP #3	0 OUT OF 10
W COOL B	CHILL WATER WORT COOL SIDE B	0 OUT OF 10
WARM GLY 3	WARM GLYCOL PUMP #3	0 OUT OF 10
WARM GLY 4	WARM GLYCOL PUMP #4	0 OUT OF 10
WARM GLY 5	WARM GLYCOL PUMP #5	0 OUT OF 10

Monitored Point Total = 40 OUT OF 100
Monitored Machine Total = 4 OUT OF 10
Last Monitored Machine List

Database: Blues_city.rbm
Station: GOVERNMENT CELLAR
Report Date: 30-Oct-19 15:02
Report Interval: 30-Sep-19 To 30-Oct-19

PERIODIC VIBRATION TECHNOLOGY

Collected Machine...

MACHINE ID	DESCRIPTION	NUMBER OF POINTS	LATEST DATE
COLD GLY 1	COLD GLYCOL PUMP #1	10 OUT OF 10	24-Oct-19
COLD GLY 4	COLD GLYCOL PUMP #4	10 OUT OF 10	24-Oct-19
COLD GLY 5	COLD GLYCOL PUMP #5	10 OUT OF 10	24-Oct-19
COLD GLY 6	COLD GLYCOL PUMP #6	10 OUT OF 10	24-Oct-19
PACK GLY 1	PACKAGING COLD GLYCOL PUMP 1	10 OUT OF 10	30-Sep-19
PACK GLY 2	PACKAGING COLD GLYCOL PUMP 2	10 OUT OF 10	24-Oct-19
NANO 126	NANO SKID PUMP 126	10 OUT OF 10	24-Oct-19
NANO 127	NANO SKID PUMP 127	10 OUT OF 10	24-Oct-19
NANO 128	NANO SKID PUMP 128	10 OUT OF 10	24-Oct-19
NANO 129	NANO SKID PUMP 129	10 OUT OF 10	24-Oct-19

Missed Machine...

MACHINE ID	DESCRIPTION	
COLD GLY 2	COLD GLYCOL PUMP #2	0 OUT OF 10
COLD GLY 3	COLD GLYCOL PUMP #3	0 OUT OF 10
AHU 2	AHU 2	0 OUT OF 10
AHU 3	AHU 3	0 OUT OF 10
Monitored Point Total =		100 OUT OF 140
Monitored Machine Total =		10 OUT OF 14
Last Monitored Machine List		

Database: Blues_city.rbm
Station: UNUSED / REMOVED
Report Date: 30-Oct-19 15:02
Report Interval: 30-Sep-19 To 30-Oct-19

PERIODIC VIBRATION TECHNOLOGY

No Collected Machine...

Missed Machine...

MACHINE ID	DESCRIPTION	
CC-1	CEREAL COOKER	0 OUT OF 15
MT-1	MASH TUN	0 OUT OF 15
Last Monitored Machine List		

Database: Blues_city.rbm
The Entire Database
Report Date: 30-Oct-19 15:02
Report Interval: 30-Sep-19 To 30-Oct-19

***** OVERALL SUMMARY *****

PERIODIC VIBRATION TECHNOLOGY

Collected Machine...

Monitored Point Total = 483 OUT OF 1010
Monitored Machine Total = 49 OUT OF 90

Abbreviated Last Measurement Summary

Database: Blues_city.rbm
Station: POWER HOUSE
Report Date: 30-Oct-19 14:06

MEASUREMENT POINT -----	OVERALL LEVEL -----	HFD / VHFD -----
250 COMP - COMPRESSOR #3 - 250HP	(24-Oct-19)	
	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.116 In/Sec	1.011 G-s
12 - MOTOR OUTBOARD VERT	.105 In/Sec	1.289 G-s
13 - MOTOR OUTBOARD AXIAL	.091 In/Sec	1.187 G-s
21 - MOTOR INBOARD HORIZ	.144 In/Sec	4.260 G-s
22 - MOTOR INBOARD VERT	.090 In/Sec	1.630 G-s
23 - MOTOR INBOARD AXIAL	.065 In/Sec	.991 G-s
	OVERALL LEVEL	1-20 KHZ
71 - CPLG END HORIZ	.207 In/Sec	2.344 G-s
72 - CPLG END VERT	.099 In/Sec	2.312 G-s
73 - CPLG END AXIAL	.226 In/Sec	3.069 G-s
81 - OPP END HORIZ	.140 In/Sec	1.785 G-s
82 - OPP END VERT	.117 In/Sec	1.807 G-s
150HP - COMPRESSOR #4 - 150HP	(24-Oct-19)	
	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.520 In/Sec	.234 G-s
12 - MOTOR OUTBOARD VERT	.353 In/Sec	.427 G-s
13 - MOTOR OUTBOARD AXIAL	.437 In/Sec	.288 G-s
21 - MOTOR INBOARD HORIZ	.122 In/Sec	.660 G-s
22 - MOTOR INBOARD VERT	.670 In/Sec	.634 G-s
23 - MOTOR INBOARD AXIAL	.116 In/Sec	.343 G-s
	OVERALL LEVEL	1-20 KHz
71 - CPLG END HORIZ	.115 In/Sec	.524 G-s
72 - CPLG END VERT	.475 In/Sec	.630 G-s
73 - CPLG END AXIAL	.303 In/Sec	.659 G-s
81 - OPP END HORIZ	.181 In/Sec	.857 G-s
82 - OPP END VERT	.590 In/Sec	.623 G-s
83 - OPP END AXIAL	.350 In/Sec	1.021 G-s
COMP 5 - COMPRESSOR #5	(24-Oct-19)	
	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.215 In/Sec	.419 G-s
12 - MOTOR OUTBOARD VERT	.077 In/Sec	.230 G-s
13 - MOTOR OUTBOARD AXIAL	.110 In/Sec	.218 G-s

21	- MOTOR INBOARD HORIZ	.149 In/Sec	.105 G-s
22	- MOTOR INBOARD VERT	.205 In/Sec	.255 G-s
23	- MOTOR INBOARD AXIAL	.165 In/Sec	.433 G-s
	OVERALL LEVEL		1-20 KHz
71	- CPLG END HORIZ	.161 In/Sec	.932 G-s
72	- CPLG END VERT	.130 In/Sec	.738 G-s
73	- CPLG END AXIAL	.164 In/Sec	.624 G-s
81	- OPP END HORIZ	.117 In/Sec	.848 G-s
82	- OPP END VERT	.045 In/Sec	.843 G-s
BFW - M - BOILER FEED WATER PUMP MID 2 (24-Oct-19)			
	OVERALL LEVEL		1-20 KHz
11	- MOTOR TOP N-S	.137 In/Sec	.503 G-s
12	- MOTOR TOP E-W	.102 In/Sec	.394 G-s
21	- MOTOR BOTTOM N-S	.216 In/Sec	.600 G-s
22	- MOTOR BOTTOM E-W	.053 In/Sec	.933 G-s
23	- MOTOR BOTTOM AXIAL	.100 In/Sec	.437 G-s
71	- PUMP TOP N-S	.491 In/Sec	1.239 G-s
72	- PUMP TOP E-W	.175 In/Sec	1.148 G-s
73	- PUMP TOP AXIAL	.105 In/Sec	1.346 G-s
81	- PUMP BOTTOM N-S	.327 In/Sec	1.747 G-s
82	- PUMP BOTTOM E-W	.201 In/Sec	.649 G-s
BFW - 1S - BOILER FEED WATER PUMP S 1 (24-Oct-19)			
	OVERALL LEVEL		1-20 KHz
11	- MOTOR TOP N-S	.180 In/Sec	.111 G-s
12	- MOTOR TOP E-W	.140 In/Sec	.115 G-s
21	- MOTOR BOTTOM N-S	.252 In/Sec	.281 G-s
22	- MOTOR BOTTOM E-W	.076 In/Sec	.358 G-s
23	- MOTOR BOTTOM AXIAL	.111 In/Sec	.402 G-s
71	- PUMP TOP N-S	.529 In/Sec	1.397 G-s
72	- PUMP TOP E-W	.207 In/Sec	1.300 G-s
73	- PUMP TOP AXIAL	.095 In/Sec	1.179 G-s
81	- PUMP BOTTOM N-S	.398 In/Sec	2.393 G-s
82	- PUMP BOTTOM E-W	.355 In/Sec	1.394 G-s
FAN 1 - BOILER FAN #1 (24-Oct-19)			
	OVERALL LEVEL		1-20 KHz
11	- MOTOR OUTBOARD HORIZ	.174 In/Sec	.111 G-s
21	- MOTOR INBOARD HORIZ	.121 In/Sec	.631 G-s
23	- MOTOR INBOARD AXIAL	.155 In/Sec	.100 G-s
71	- FAN BRG HORIZONTAL	.125 In/Sec	.082 G-s
72	- FAN BRG VERTICAL	.111 In/Sec	.111 G-s
FAN 3 - BOILER FAN #3 - 1780 RPM Max (24-Oct-19)			
	OVERALL LEVEL		1-20 KHz
11	- MOTOR OUTBOARD HORIZ	.122 In/Sec	6.159 G-s
12	- MOTOR OUTBOARD VERT	.093 In/Sec	7.011 G-s
21	- MOTOR INBOARD HORIZ	.147 In/Sec	3.047 G-s
22	- MOTOR INBOARD VERT	.108 In/Sec	8.353 G-s
23	- MOTOR INBOARD AXIAL	.123 In/Sec	3.423 G-s
71	- FAN BEARING INBOARD HORZ	.109 In/Sec	1.510 G-s
72	- FAN BEARING INBOARD VERT	.070 In/Sec	1.393 G-s
73	- FAN BEARING INBOARD AXIAL	.086 In/Sec	1.305 G-s
81	- FAN BEARING OUTBOARD HORZ	.165 In/Sec	.081 G-s
82	- FAN BEARING OUTBOARD VERT	.179 In/Sec	.314 G-s

CR PUMP 1 - CARBON RECIRC PUMP

(24-Oct-19)

	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.045 In/Sec	.131 G-s
12 - MOTOR OUTBOARD VERT	.046 In/Sec	.120 G-s
21 - MOTOR INBOARD HORIZ	.111 In/Sec	.176 G-s
22 - MOTOR INBOARD VERT	.063 In/Sec	.157 G-s
23 - MOTOR INBOARD AXIAL	.053 In/Sec	.055 G-s
71 - PUMP CPLG END HORIZ	.035 In/Sec	.279 G-s
72 - PUMP CPLG END VERT	.030 In/Sec	.410 G-s
73 - PUMP CPLG END AXIAL	.028 In/Sec	.706 G-s
81 - PUMP OPP END HORIZ	.065 In/Sec	.373 G-s
82 - PUMP OPP END VERT	.025 In/Sec	.169 G-s

SW PUMP 8 - SERVICE WATER PUMP 8

(24-Oct-19)

	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.075 In/Sec	.269 G-s
12 - MOTOR OUTBOARD VERT	.204 In/Sec	.829 G-s
21 - MOTOR INBOARD HORIZ	.090 In/Sec	.630 G-s
22 - MOTOR INBOARD VERT	.234 In/Sec	.518 G-s
23 - MOTOR INBOARD AXIAL	.213 In/Sec	.266 G-s
71 - PUMP CPLG END HORIZ	.199 In/Sec	.577 G-s
72 - PUMP CPLG END VERT	.202 In/Sec	.664 G-s
73 - PUMP CPLG END AXIAL	.111 In/Sec	.497 G-s
81 - PUMP OPP END HORIZ	.103 In/Sec	.709 G-s
82 - PUMP OPP END VERT	.157 In/Sec	.612 G-s

SW PUMP 3 - SERVICE WATER PUMP 3

(24-Oct-19)

	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.420 In/Sec	.416 G-s
12 - MOTOR OUTBOARD VERT	.179 In/Sec	.396 G-s
21 - MOTOR INBOARD HORIZ	.457 In/Sec	1.339 G-s
22 - MOTOR INBOARD VERT	.079 In/Sec	1.416 G-s
23 - MOTOR INBOARD AXIAL	.184 In/Sec	.697 G-s
71 - PUMP CPLG END HORIZ	.272 In/Sec	.967 G-s
72 - PUMP CPLG END VERT	.182 In/Sec	1.013 G-s
73 - PUMP CPLG END AXIAL	.223 In/Sec	1.093 G-s
81 - PUMP OPP END HORIZ	.138 In/Sec	1.136 G-s
82 - PUMP OPP END VERT	.102 In/Sec	.695 G-s

RO 2 - RO WATER PUMP 2

(24-Oct-19)

	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.131 In/Sec	.465 G-s
12 - MOTOR OUTBOARD VERT	.114 In/Sec	.379 G-s
21 - MOTOR INBOARD HORIZ	.158 In/Sec	.557 G-s
22 - MOTOR INBOARD VERT	.186 In/Sec	.883 G-s
23 - MOTOR INBOARD AXIAL	.174 In/Sec	.554 G-s
71 - PUMP CPLG END HORIZ	.812 In/Sec	.429 G-s
72 - PUMP CPLG END VERT	.271 In/Sec	.599 G-s
73 - PUMP CPLG END AXIAL	.126 In/Sec	.491 G-s
81 - PUMP OPP END HORIZ	.258 In/Sec	.355 G-s

600HP - AMMONIA COMP #1

(24-Oct-19)

	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.087 In/Sec	.098 G-s
12 - MOTOR OUTBOARD VERT	.160 In/Sec	.117 G-s
13 - MOTOR OUTBOARD AXIAL	.182 In/Sec	.070 G-s
21 - MOTOR INBOARD HORIZ	.107 In/Sec	.131 G-s

22	- MOTOR INBOARD VERT	.134 In/Sec	.322 G-s
23	- MOTOR INBOARD AXIAL	.193 In/Sec	.035 G-s
		OVERALL LEVEL	1-20 KHz
71	- MALE - CPLG END HORIZ	.120 In/Sec	1.037 G-s
72	- MALE - CPLG END VERT	.149 In/Sec	1.339 G-s
73	- MALE-CPLG END AXIAL	.176 In/Sec	.617 G-s
81	- MALE- OPP END HORIZ	.106 In/Sec	.619 G-s
82	- MALE- OPP END VERT	.093 In/Sec	.523 G-s
83	- MALE-OPP END AXIAL	.235 In/Sec	.642 G-s
71F	- FEMALE - CPLG END HORIZ	.125 In/Sec	.842 G-s
72F	- FEMALE- CPLG END VERT	.134 In/Sec	.692 G-s
73F	- FEMALE-CPLG END AXIAL	.204 In/Sec	.981 G-s
81F	- FEMALE- OPP END HORIZ	.120 In/Sec	.813 G-s
82F	- FEMALE- OPP END VERT	.083 In/Sec	.797 G-s

ACOMP #7 - AMMONIA COMP - #2		(24-Oct-19)	
		OVERALL LEVEL	1-20 KHz
11	- MOTOR OUTBOARD HORIZ	.064 In/Sec	.280 G-s
12	- MOTOR OUTBOARD VERT	.090 In/Sec	.041 G-s
13	- MOTOR OUTBOARD AXIAL	.117 In/Sec	.057 G-s
21	- MOTOR INBOARD HORIZ	.115 In/Sec	.134 G-s
22	- MOTOR INBOARD VERT	.046 In/Sec	.201 G-s
23	- MOTOR INBOARD AXIAL	.083 In/Sec	.065 G-s
		OVERALL LEVEL	1-20 KHz
71	- MALE - CPLG END HORIZ	.173 In/Sec	.637 G-s
72	- MALE - CPLG END VERT	.227 In/Sec	.708 G-s
73	- MALE-CPLG END AXIAL	.182 In/Sec	.145 G-s
81	- MALE- OPP END HORIZ	.118 In/Sec	.566 G-s
82	- MALE- OPP END VERT	.081 In/Sec	.348 G-s
83	- MALE-OPP END AXIAL	.153 In/Sec	.435 G-s
71F	- FEMALE - CPLG END HORIZ	.173 In/Sec	.656 G-s
72F	- FEMALE- CPLG END VERT	.215 In/Sec	.515 G-s
73F	- FEMALE-CPLG END AXIAL	.144 In/Sec	.658 G-s
81F	- FEMALE- OPP END HORIZ	.113 In/Sec	.688 G-s
82F	- FEMALE- OPP END VERT	.130 In/Sec	.527 G-s
83F	- FEMALE- OPP END AXIAL	.180 In/Sec	.789 G-s

Clarification Of Vibration Units:

Acc --> G-s PK

Vel --> In/Sec PK

Abbreviated Last Measurement

Summary

Database: Blues_city.rbm

Station: UPPER FLOORS

Report Date: 30-Oct-19 14:06

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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2NHWP - 2ND FLOOR N. HOT WATER PUMP	(24-Oct-19)	
	OVERALL LEVEL	1-20 KHz
11 - MOTOR OUTBOARD HORIZ	.097 In/Sec	.513 G-s
12 - MOTOR OUTBOARD VERT	.085 In/Sec	.631 G-s
21 - MOTOR INBOARD HORIZ	.108 In/Sec	.602 G-s
22 - MOTOR INBOARD VERT	.076 In/Sec	.441 G-s

23	- MOTOR INBOARD AXIAL	.074 In/Sec	.266 G-s
71	- PUMP CPLG END HORIZ	.171 In/Sec	2.399 G-s
72	- PUMP CPLG END VERT	.159 In/Sec	2.438 G-s
73	- PUMP CPLG END AXIAL	.145 In/Sec	3.892 G-s
81	- PUMP OPP END HORIZ	.102 In/Sec	3.317 G-s
82	- PUMP OPP END VERT	.126 In/Sec	1.420 G-s

Clarification Of Vibration Units:

Acc	-->	G-s	PK	
Vel	-->	In/Sec	PK	Abbreviated Last Measurement

Summary

Database: Blues_city.rbm
Station: BREWING 1ST FLOOR
Report Date: 30-Oct-19 14:06

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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*** NO DATA Was Found That Meets the Report Specification ***

Abbreviated Last Measurement Summary

Database: Blues_city.rbm
Station: BREWING BASEMENT
Report Date: 30-Oct-19 14:06

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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*** NO DATA Was Found That Meets the Report Specification ***

Abbreviated Last Measurement Summary

Database: Blues_city.rbm
Station: GRAIN TRANSFER
Report Date: 30-Oct-19 14:06

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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*** NO DATA Was Found That Meets the Report Specification ***

Abbreviated Last Measurement Summary

Database: Blues_city.rbm
Station: SUGAR PUMPS
Report Date: 30-Oct-19 14:06

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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V3	- SUGAR TANK VIKING PUMP #3	(24-Oct-19)	
		OVERALL LEVEL	1-20 KHZ
11	- MOTOR OB HORIZ	.077 In/Sec	.303 G-s

12	- MOTOR OB VERT	.138 In/Sec	.221 G-s
21	- MOTOR IB HORZ	.067 In/Sec	.513 G-s
22	- MOTOR IB VERT	.116 In/Sec	.321 G-s
23	- MOTOR IB AXIAL	.109 In/Sec	.324 G-s
	OVERALL LEVEL		1-20 KHz
31	- GEARBOX INPUT HORZ	.090 In/Sec	.927 G-s
32	- GEARBOX INPUT VERT	.120 In/Sec	1.096 G-s
33	- GEARBOX INPUT AXIAL	.080 In/Sec	.805 G-s
61	- GEARBOX OUTPUT HORZ	.086 In/Sec	1.513 G-s
62	- GEARBOX OUTPUT VERT	.120 In/Sec	.712 G-s
63	- GEARBOX OUTPUT AXIAL	.074 In/Sec	.503 G-s
	OVERALL LEVEL		1-20 KHz
71	- PUMP IB HORZ	.103 In/Sec	.225 G-s
72	- PUMP IB VERT	.078 In/Sec	.277 G-s
73	- PUMP IB AXIAL	.119 In/Sec	.184 G-s

V4 - SUGAR TANK VIKING PUMP #4 (24-Oct-19)

	OVERALL LEVEL		1-20 KHz
11	- MOTOR OB HORZ	.092 In/Sec	.250 G-s
12	- MOTOR OB VERT	.085 In/Sec	.276 G-s
21	- MOTOR IB HORZ	.086 In/Sec	.418 G-s
22	- MOTOR IB VERT	.132 In/Sec	.670 G-s
23	- MOTOR IB AXIAL	.266 In/Sec	.222 G-s
	OVERALL LEVEL		1-20 KHz
31	- GEARBOX INPUT HORZ	.158 In/Sec	.191 G-s
32	- GEARBOX INPUT VERT	.287 In/Sec	.281 G-s
33	- GEARBOX INPUT AXIAL	.484 In/Sec	.267 G-s
61	- GEARBOX OUTPUT HORZ	.204 In/Sec	.339 G-s
62	- GEARBOX OUTPUT VERT	.178 In/Sec	.290 G-s
63	- GEARBOX OUTPUT AXIAL	.428 In/Sec	.064 G-s
	OVERALL LEVEL		1-20 KHz
71	- PUMP IB HORZ	.122 In/Sec	.495 G-s
72	- PUMP IB VERT	.215 In/Sec	.474 G-s
73	- PUMP IB AXIAL	.289 In/Sec	.640 G-s

V5 - SUGAR TANK VIKING PUMP #5 (24-Oct-19)

	OVERALL LEVEL		1-20 KHz
11	- MOTOR OB HORZ	.078 In/Sec	.435 G-s
12	- MOTOR OB VERT	.024 In/Sec	.423 G-s
21	- MOTOR IB HORZ	.078 In/Sec	.553 G-s
22	- MOTOR IB VERT	.037 In/Sec	.360 G-s
23	- MOTOR IB AXIAL	.044 In/Sec	.341 G-s
	OVERALL LEVEL		1-20 KHz
31	- GEARBOX INPUT HORZ	.072 In/Sec	.841 G-s
32	- GEARBOX INPUT VERT	.073 In/Sec	.603 G-s
33	- GEARBOX INPUT AXIAL	.037 In/Sec	.190 G-s

Clarification Of Vibration Units:

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

Abbreviated Last Measurement

Summary

Database: Blues_city.rbm
 Station: ALCOHOL PUMP ROOM
 Report Date: 30-Oct-19 14:06

MEASUREMENT POINT -----	OVERALL LEVEL -----	HFD / VHFD -----
SK1 RO1 - SKID 1 - RO PUMP #1	(24-Oct-19)	
	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.159 In/Sec	.890 G-s
12 - MOTOR OUTBOARD VERT	.084 In/Sec	.902 G-s
21 - MOTOR INBOARD HORIZ	.398 In/Sec	.697 G-s
22 - MOTOR INBOARD VERT	.312 In/Sec	.590 G-s
23 - MOTOR INBOARD AXIAL	.121 In/Sec	.334 G-s
SK1 RO4 - SKID 1 - RO PUMP #4	(24-Oct-19)	
	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.038 In/Sec	.044 G-s
12 - MOTOR OUTBOARD VERT	.038 In/Sec	.029 G-s
21 - MOTOR INBOARD HORIZ	.085 In/Sec	.081 G-s
22 - MOTOR INBOARD VERT	.036 In/Sec	.127 G-s
23 - MOTOR INBOARD AXIAL	.044 In/Sec	.064 G-s
SK1 RO3 - SKID 1 - RO PUMP #3	(24-Oct-19)	
	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.188 In/Sec	1.323 G-s
12 - MOTOR OUTBOARD VERT	.174 In/Sec	.979 G-s
21 - MOTOR INBOARD HORIZ	.180 In/Sec	1.245 G-s
22 - MOTOR INBOARD VERT	.177 In/Sec	1.141 G-s
23 - MOTOR INBOARD AXIAL	.144 In/Sec	.353 G-s
71 - PUMP CPLG END HORIZ	.182 In/Sec	1.235 G-s
72 - PUMP CPLG END VERT	.153 In/Sec	1.261 G-s
73 - PUMP CPLG END AXIAL	.226 In/Sec	.625 G-s
81 - PUMP OPP END HORIZ	.137 In/Sec	1.792 G-s
82 - PUMP OPP END VERT	.203 In/Sec	1.396 G-s
SK2 RO1 - SKID 2 - RO PUMP #1	(24-Oct-19)	
	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.057 In/Sec	.366 G-s
12 - MOTOR OUTBOARD VERT	.094 In/Sec	.499 G-s
21 - MOTOR INBOARD HORIZ	.055 In/Sec	.597 G-s
22 - MOTOR INBOARD VERT	.167 In/Sec	.506 G-s
23 - MOTOR INBOARD AXIAL	.045 In/Sec	.239 G-s
SK2 RO4 - SKID 2 - RO PUMP #4	(24-Oct-19)	
	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.094 In/Sec	.040 G-s
12 - MOTOR OUTBOARD VERT	.117 In/Sec	.180 G-s
21 - MOTOR INBOARD HORIZ	.081 In/Sec	.183 G-s
22 - MOTOR INBOARD VERT	.103 In/Sec	.147 G-s
23 - MOTOR INBOARD AXIAL	.096 In/Sec	.056 G-s
SK2 RO3 - SKID 2 - RO PUMP #3	(24-Oct-19)	
	OVERALL LEVEL	1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.160 In/Sec	1.321 G-s
12 - MOTOR OUTBOARD VERT	.310 In/Sec	1.046 G-s
21 - MOTOR INBOARD HORIZ	.104 In/Sec	.577 G-s
22 - MOTOR INBOARD VERT	.306 In/Sec	.586 G-s
23 - MOTOR INBOARD AXIAL	.379 In/Sec	.312 G-s
71 - PUMP CPLG END HORIZ	.137 In/Sec	.947 G-s

72	- PUMP CPLG END VERT	.244 In/Sec	.937 G-s
73	- PUMP CPLG END AXIAL	.245 In/Sec	.214 G-s
81	- PUMP OPP END HORIZ	.114 In/Sec	.834 G-s
82	- PUMP OPP END VERT	.189 In/Sec	.560 G-s

SK2 RO2 - SKID 2 - RO PUMP #2		(24-Oct-19)	
		OVERALL LEVEL	1-20 KHZ
11	- MOTOR OUTBOARD HORIZ	.054 In/Sec	.180 G-s
12	- MOTOR OUTBOARD VERT	.042 In/Sec	.590 G-s
21	- MOTOR INBOARD HORIZ	.046 In/Sec	.934 G-s
22	- MOTOR INBOARD VERT	.035 In/Sec	.635 G-s
23	- MOTOR INBOARD AXIAL	.026 In/Sec	.510 G-s
71	- PUMP CPLG END HORIZ	.075 In/Sec	.491 G-s
72	- PUMP CPLG END VERT	.052 In/Sec	.273 G-s
73	- PUMP CPLG END AXIAL	.175 In/Sec	.176 G-s
81	- PUMP OPP END HORIZ	.112 In/Sec	.332 G-s
82	- PUMP OPP END VERT	.137 In/Sec	.406 G-s

Clarification Of Vibration Units:

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

Abbreviated Last Measurement

Summary

Database: Blues_city.rbm
 Station: ADMINISTRATIVE AREA
 Report Date: 30-Oct-19 14:06

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD

HVAC HOT - HVAC HOT WATER CIRC PUMP		
(24-Oct-19)		
OVERALL LEVEL		1-20 KHZ
11 - MOTOR OUTBOARD HORIZ	.223 In/Sec	.531 G-s
12 - MOTOR OUTBOARD VERT	.288 In/Sec	.846 G-s
21 - MOTOR INBOARD HORIZ	.222 In/Sec	.514 G-s
22 - MOTOR INBOARD VERT	.350 In/Sec	.471 G-s
23 - MOTOR INBOARD AXIAL	.442 In/Sec	.541 G-s
71 - PUMP CPLG END HORIZ	.299 In/Sec	.312 G-s
72 - PUMP CPLG END VERT	.210 In/Sec	.540 G-s
73 - PUMP CPLG END AXIAL	.369 In/Sec	.277 G-s
81 - PUMP OPP END HORIZ	.248 In/Sec	.411 G-s
82 - PUMP OPP END VERT	.228 In/Sec	.362 G-s

Clarification Of Vibration Units:

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

Abbreviated Last Measurement

Summary

Database: Blues_city.rbm
 Station: FILTER CELLAR
 Report Date: 30-Oct-19 14:06

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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CHILL 1 - CHILL WATER CIRC PUMP #1

11 - MOTOR OUTBOARD HORIZ
 12 - MOTOR OUTBOARD VERT
 21 - MOTOR INBOARD HORIZ
 22 - MOTOR INBOARD VERT
 23 - MOTOR INBOARD AXIAL
 71 - PUMP CPLG END HORIZ
 72 - PUMP CPLG END VERT
 73 - PUMP CPLG END AXIAL
 81 - PUMP OPP END HORIZ
 82 - PUMP OPP END VERT

(24-Oct-19)
 OVERALL LEVEL
 1.012 In/Sec
 .104 In/Sec
 1.091 In/Sec
 .150 In/Sec
 .330 In/Sec
 .291 In/Sec
 .120 In/Sec
 .177 In/Sec
 .189 In/Sec
 .135 In/Sec

1-20 KHZ
 .833 G-s
 .363 G-s
 1.562 G-s
 .720 G-s
 1.623 G-s
 .539 G-s
 .642 G-s
 .683 G-s
 .443 G-s
 .535 G-s

WARM GLY 1 - WARM GLYCOL PUMP #1

11 - MOTOR OUTBOARD HORIZ
 12 - MOTOR OUTBOARD VERT
 21 - MOTOR INBOARD HORIZ
 22 - MOTOR INBOARD VERT
 23 - MOTOR INBOARD AXIAL
 71 - PUMP CPLG END HORIZ
 72 - PUMP CPLG END VERT
 73 - PUMP CPLG END AXIAL
 81 - PUMP OPP END HORIZ
 82 - PUMP OPP END VERT

(24-Oct-19)
 OVERALL LEVEL
 .075 In/Sec
 .061 In/Sec
 .150 In/Sec
 .102 In/Sec
 .118 In/Sec
 .181 In/Sec
 .143 In/Sec
 .239 In/Sec
 .106 In/Sec
 .079 In/Sec

1-20 KHZ
 .157 G-s
 .229 G-s
 .373 G-s
 .203 G-s
 .103 G-s
 .150 G-s
 .181 G-s
 .110 G-s
 .190 G-s
 .194 G-s

WARM GLY 2 - WARM GLYCOL PUMP #2

11 - MOTOR OUTBOARD HORIZ
 12 - MOTOR OUTBOARD VERT
 21 - MOTOR INBOARD HORIZ
 22 - MOTOR INBOARD VERT
 23 - MOTOR INBOARD AXIAL
 71 - PUMP CPLG END HORIZ
 72 - PUMP CPLG END VERT
 73 - PUMP CPLG END AXIAL
 81 - PUMP OPP END HORIZ
 82 - PUMP OPP END VERT

(24-Oct-19)
 OVERALL LEVEL
 .023 In/Sec
 .023 In/Sec
 .035 In/Sec
 .027 In/Sec
 .028 In/Sec
 .033 In/Sec
 .042 In/Sec
 .046 In/Sec
 .074 In/Sec
 .026 In/Sec

1-20 KHZ
 .133 G-s
 .201 G-s
 .201 G-s
 .277 G-s
 .104 G-s
 .071 G-s
 .031 G-s
 .020 G-s
 .086 G-s
 .053 G-s

Clarification Of Vibration Units:

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

Abbreviated Last Measurement

Summary

Database: Blues_city.rbm
 Station: GOVERNMENT CELLAR
 Report Date: 30-Oct-19 14:06

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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COLD GLY 1 - COLD GLYCOL PUMP #1	(24-Oct-19)	1-20 KHZ
	OVERALL LEVEL	

11	- MOTOR OUTBOARD HORIZ	.073 In/Sec	.757 G-s
12	- MOTOR OUTBOARD VERT	.044 In/Sec	.169 G-s
21	- MOTOR INBOARD HORIZ	.064 In/Sec	.343 G-s
22	- MOTOR INBOARD VERT	.041 In/Sec	.308 G-s
23	- MOTOR INBOARD AXIAL	.054 In/Sec	.261 G-s
71	- PUMP CPLG END HORIZ	.097 In/Sec	.734 G-s
72	- PUMP CPLG END VERT	.104 In/Sec	1.285 G-s
73	- PUMP CPLG END AXIAL	.051 In/Sec	.542 G-s
81	- PUMP OPP END HORIZ	.058 In/Sec	.788 G-s
82	- PUMP OPP END VERT	.094 In/Sec	1.376 G-s

COLD GLY 4 - COLD GLYCOL PUMP #4

(24-Oct-19)

OVERALL LEVEL

1-20 KHZ

11	- MOTOR OUTBOARD HORIZ	.130 In/Sec	.280 G-s
12	- MOTOR OUTBOARD VERT	.055 In/Sec	.362 G-s
21	- MOTOR INBOARD HORIZ	.119 In/Sec	.461 G-s
22	- MOTOR INBOARD VERT	.081 In/Sec	.782 G-s
23	- MOTOR INBOARD AXIAL	.096 In/Sec	.248 G-s
71	- PUMP CPLG END HORIZ	.248 In/Sec	1.004 G-s
72	- PUMP CPLG END VERT	.161 In/Sec	.647 G-s
73	- PUMP CPLG END AXIAL	.206 In/Sec	1.454 G-s
81	- PUMP OPP END HORIZ	.220 In/Sec	1.900 G-s
82	- PUMP OPP END VERT	.140 In/Sec	.707 G-s

COLD GLY 5 - COLD GLYCOL PUMP #5

(24-Oct-19)

OVERALL LEVEL

1-20 KHZ

11	- MOTOR OUTBOARD HORIZ	.408 In/Sec	.467 G-s
12	- MOTOR OUTBOARD VERT	.246 In/Sec	.249 G-s
21	- MOTOR INBOARD HORIZ	.534 In/Sec	1.049 G-s
22	- MOTOR INBOARD VERT	.419 In/Sec	.841 G-s
23	- MOTOR INBOARD AXIAL	.444 In/Sec	.389 G-s
71	- PUMP CPLG END HORIZ	.109 In/Sec	.406 G-s
72	- PUMP CPLG END VERT	.047 In/Sec	.214 G-s
73	- PUMP CPLG END AXIAL	.093 In/Sec	.188 G-s
81	- PUMP OPP END HORIZ	.079 In/Sec	.174 G-s
82	- PUMP OPP END VERT	.081 In/Sec	.160 G-s

COLD GLY 6 - COLD GLYCOL PUMP #6

(24-Oct-19)

OVERALL LEVEL

1-20 KHZ

11	- MOTOR OUTBOARD HORIZ	.058 In/Sec	.218 G-s
12	- MOTOR OUTBOARD VERT	.052 In/Sec	.589 G-s
21	- MOTOR INBOARD HORIZ	.079 In/Sec	.370 G-s
22	- MOTOR INBOARD VERT	.062 In/Sec	.375 G-s
23	- MOTOR INBOARD AXIAL	.049 In/Sec	.219 G-s
71	- PUMP CPLG END HORIZ	.046 In/Sec	.074 G-s
72	- PUMP CPLG END VERT	.059 In/Sec	.113 G-s
73	- PUMP CPLG END AXIAL	.039 In/Sec	.135 G-s
81	- PUMP OPP END HORIZ	.064 In/Sec	.137 G-s
82	- PUMP OPP END VERT	.078 In/Sec	.125 G-s

PACK GLY 2 - PACKAGING COLD GLYCOL PUMP 2

(24-Oct-19)

OVERALL LEVEL

1-20 KHZ

11	- MOTOR OUTBOARD HORIZ	.018 In/Sec	.831 G-s
12	- MOTOR OUTBOARD VERT	.046 In/Sec	.254 G-s
21	- MOTOR INBOARD HORIZ	.095 In/Sec	1.276 G-s
22	- MOTOR INBOARD VERT	.023 In/Sec	.912 G-s
23	- MOTOR INBOARD AXIAL	.061 In/Sec	.876 G-s

71	- PUMP CPLG END HORIZ	.043 In/Sec	.242 G-s
72	- PUMP CPLG END VERT	.110 In/Sec	.177 G-s
73	- PUMP CPLG END AXIAL	.086 In/Sec	.179 G-s
81	- PUMP OPP END HORIZ	.020 In/Sec	.326 G-s
82	- PUMP OPP END VERT	.025 In/Sec	.133 G-s

NANO 126 - NANO SKID PUMP 126

(24-Oct-19)

		OVERALL LEVEL	1-20 KHZ
11	- MOTOR OUTBOARD HORIZ	.125 In/Sec	.406 G-s
12	- MOTOR OUTBOARD VERT	.078 In/Sec	1.151 G-s
21	- MOTOR INBOARD HORIZ	.074 In/Sec	1.042 G-s
22	- MOTOR INBOARD VERT	.061 In/Sec	.534 G-s
23	- MOTOR INBOARD AXIAL	.076 In/Sec	.709 G-s
71	- PUMP CPLG END HORIZ	.117 In/Sec	.481 G-s
72	- PUMP CPLG END VERT	.056 In/Sec	.448 G-s
73	- PUMP CPLG END AXIAL	.052 In/Sec	.121 G-s
81	- PUMP OPP END HORIZ	.086 In/Sec	.321 G-s
82	- PUMP OPP END VERT	.072 In/Sec	.278 G-s

NANO 127 - NANO SKID PUMP 127

(24-Oct-19)

		OVERALL LEVEL	1-20 KHZ
11	- MOTOR OUTBOARD HORIZ	.169 In/Sec	.276 G-s
12	- MOTOR OUTBOARD VERT	.095 In/Sec	1.032 G-s
21	- MOTOR INBOARD HORIZ	.183 In/Sec	.673 G-s
22	- MOTOR INBOARD VERT	.171 In/Sec	.590 G-s
23	- MOTOR INBOARD AXIAL	.235 In/Sec	.490 G-s
71	- PUMP CPLG END HORIZ	.146 In/Sec	.453 G-s
72	- PUMP CPLG END VERT	.212 In/Sec	.426 G-s
73	- PUMP CPLG END AXIAL	.144 In/Sec	.325 G-s
81	- PUMP OPP END HORIZ	.335 In/Sec	.427 G-s
82	- PUMP OPP END VERT	.145 In/Sec	.395 G-s

NANO 128 - NANO SKID PUMP 128

(24-Oct-19)

		OVERALL LEVEL	1-20 KHZ
11	- MOTOR OUTBOARD HORIZ	.288 In/Sec	.488 G-s
12	- MOTOR OUTBOARD VERT	.083 In/Sec	1.501 G-s
21	- MOTOR INBOARD HORIZ	.361 In/Sec	1.869 G-s
22	- MOTOR INBOARD VERT	.168 In/Sec	.389 G-s
23	- MOTOR INBOARD AXIAL	.131 In/Sec	.622 G-s
71	- PUMP CPLG END HORIZ	.115 In/Sec	.473 G-s
72	- PUMP CPLG END VERT	.180 In/Sec	.406 G-s
73	- PUMP CPLG END AXIAL	.227 In/Sec	.371 G-s
81	- PUMP OPP END HORIZ	.100 In/Sec	.345 G-s
82	- PUMP OPP END VERT	.091 In/Sec	.340 G-s

NANO 129 - NANO SKID PUMP 129

(24-Oct-19)

		OVERALL LEVEL	1-20 KHZ
11	- MOTOR OUTBOARD HORIZ	.098 In/Sec	.282 G-s
12	- MOTOR OUTBOARD VERT	.117 In/Sec	2.850 G-s
21	- MOTOR INBOARD HORIZ	.142 In/Sec	2.922 G-s
22	- MOTOR INBOARD VERT	.147 In/Sec	2.429 G-s
23	- MOTOR INBOARD AXIAL	.132 In/Sec	.854 G-s
71	- PUMP CPLG END HORIZ	.090 In/Sec	.587 G-s
72	- PUMP CPLG END VERT	.178 In/Sec	.805 G-s
73	- PUMP CPLG END AXIAL	.112 In/Sec	.526 G-s
81	- PUMP OPP END HORIZ	.111 In/Sec	.529 G-s
82	- PUMP OPP END VERT	.111 In/Sec	.527 G-s

Clarification Of Vibration Units:

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