HI-SPEED INDUSTRIAL SERVICE QualiTest® Diagnostics

7030 Ryburn Dr. Millington, TN Phone: (901) 873-5300 Fax: (901) 873-5301 www.gohispeed.com

July 29, 2022

Hank Bass
Coca-Cola
West Memphis, AR

The following is a summary of findings from the July 2022 vibration survey at your facility. Please let us know if there are any questions or comments.

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.

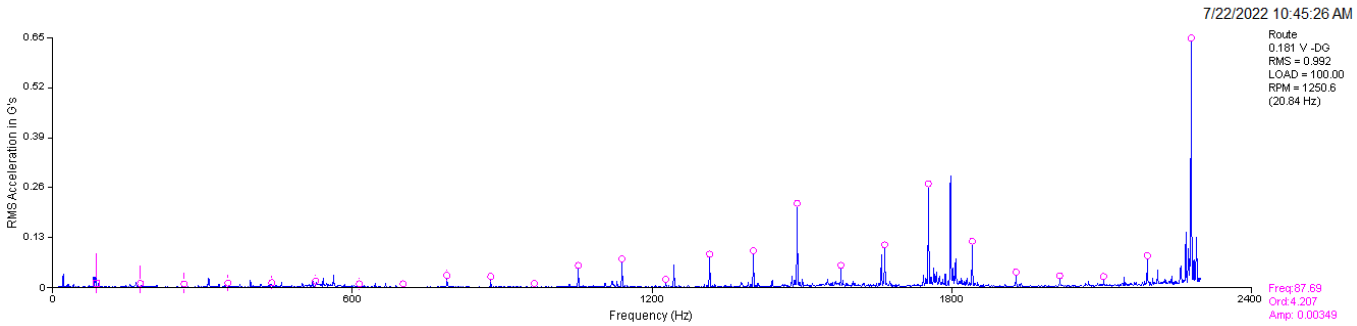
Class II: Defect (s) present that may cause problem in long term (2-6 months). Repair during normal maintenance scheduling. Continue to monitor.

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

Defects

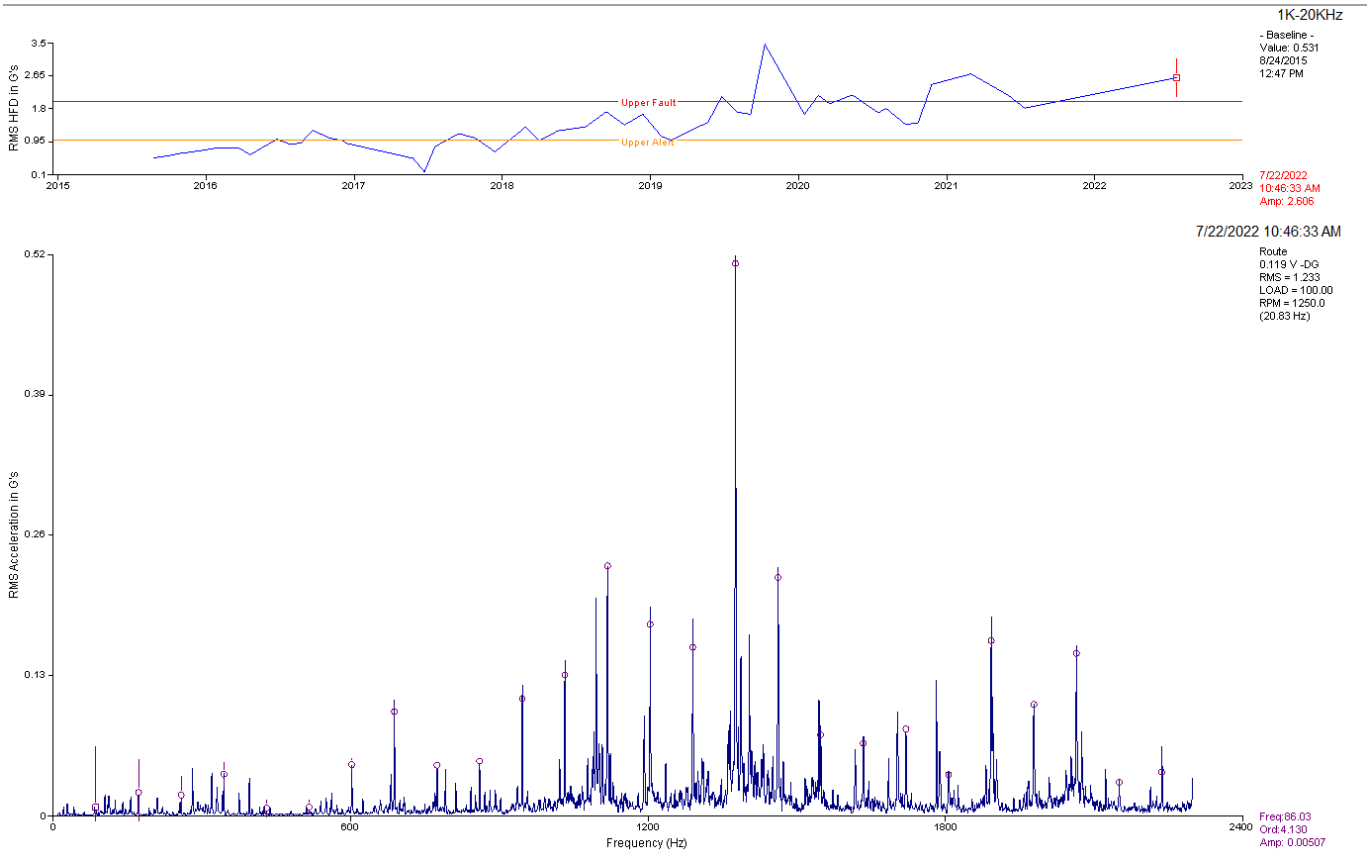
Filler 1 Motor CLASS I



Observation:
Motor outboard data shows non-synchronous peak associated with bearing race defects.

Recommendation:
Motor appears to have some defects in the motor bearings. This appears to be a slow digression as we will monitor this closely.

Filler 2 Motor CLASS II



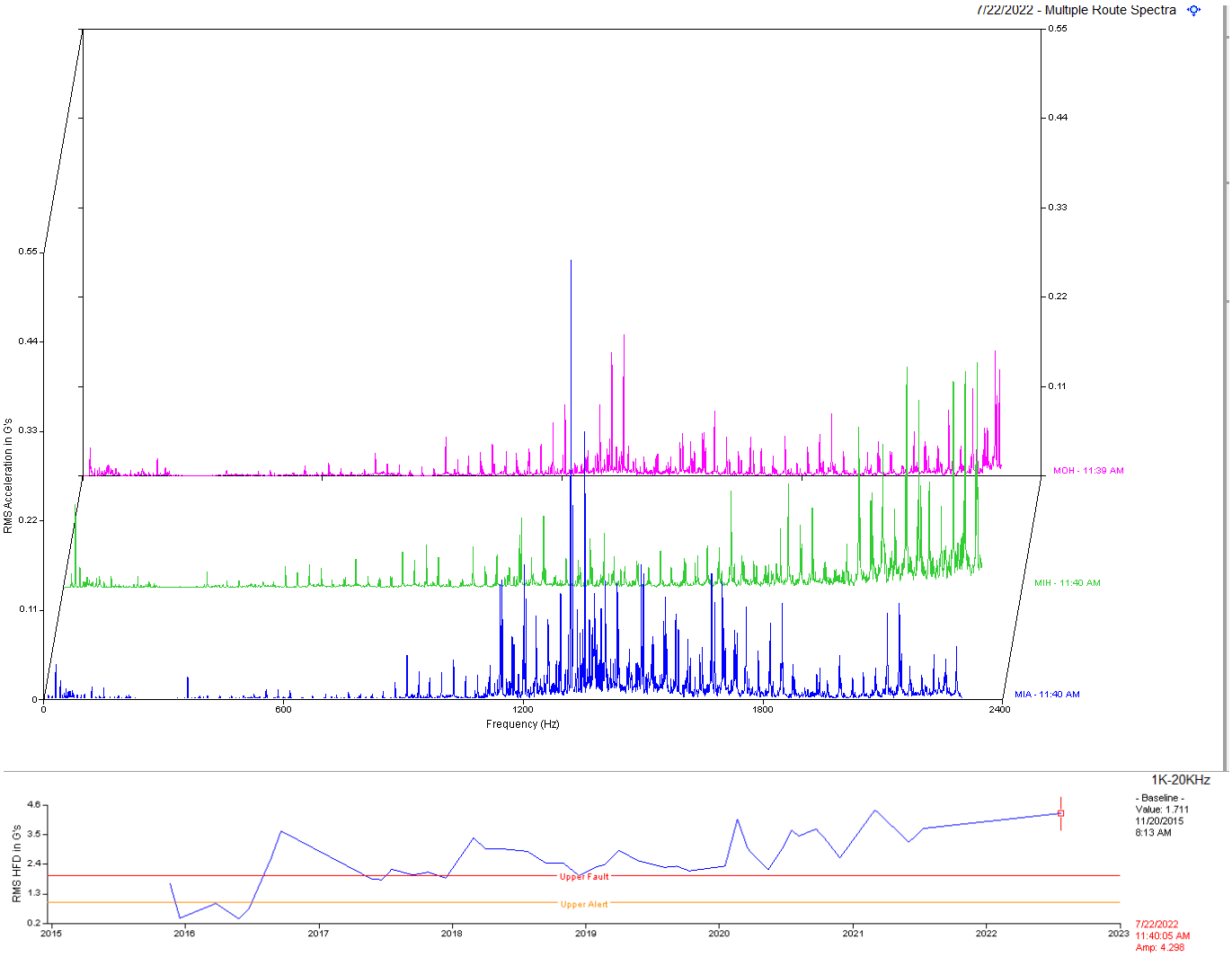
Observation:

Motor outboard data shows non-synchronous peak associated with bearing race defects.

Recommendation:

Motor 2 is slightly higher in amplitude than motor 1. Both have similar defects. Motor may need attention soon. Ensure new motor has grounding protection such as insulated bearing and AEGIS grounding ring.

C-1 Ammonia Compressor CLASS II



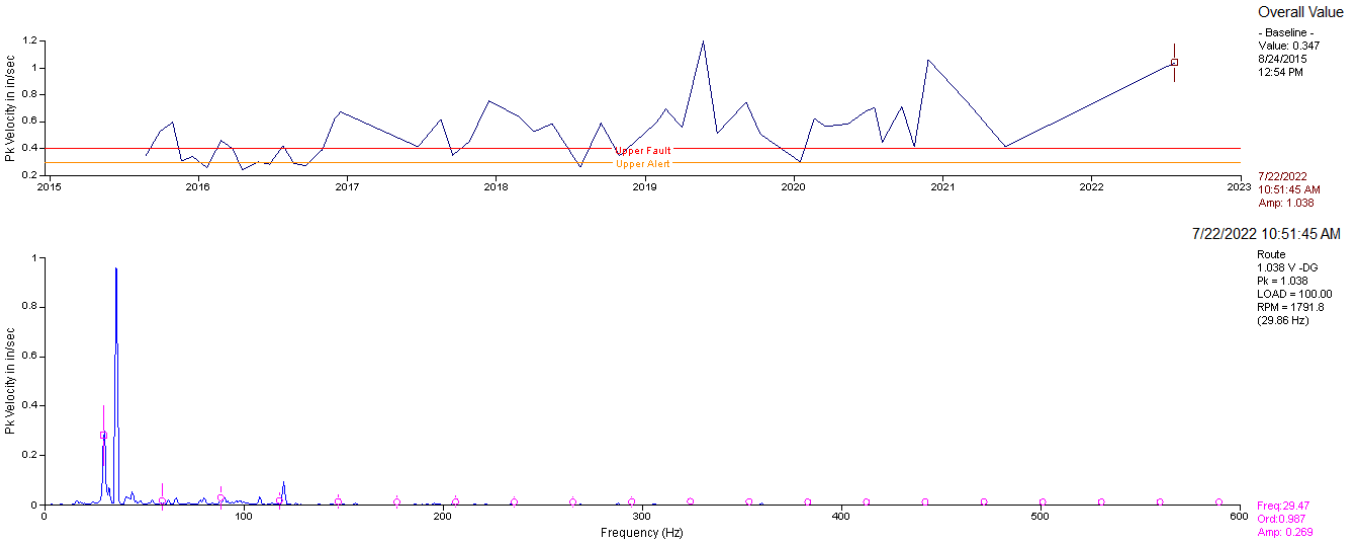
Observation:

Multipoint spectra of the motor shows quite a bit of non-synchronous peaks in the spectra. Inboard axial data shows the highest amount of vibration. 1K-20KHz. acceleration trend data shows some increase in amplitude.

Recommendation:

This motor has had this issue for a while now. We are monitoring this closely, however, the presence o such high acceleration is concerning. Motor may need to be replaced in the near future.

C-3 Ammonia Compressor CLASS III



Observation:

Motor outboard horizontal spectrum shows a dominant vibration at 2 x compressor rpm. Amplitude of this peak is .96 ips-pk.

Recommendation:

Motor vibration is still suggesting possible belt and or sheave issue. Data shows a dominant peak of vibration at what appears to be 2 x compressor rpm. Inspect belts and sheaves for wear and misalignment and ensure all base and feet fasteners are tight. This is a **CLASS III** defect considering amplitude is over 1 ips-pk in the MOH.

Abbreviated Last Measurement Summary

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Database: Coca-Cola.rbm
Area: W.MEMPHIS PLANT

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
FILL 1 - FILLER 1 MOTOR	(22-Jul-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.178 In/Sec	.913 G-s
MIH - MOTOR INBOARD HORIZONTAL	.181 In/Sec	1.231 G-s
MIA - MOTOR INBOARD AXIAL	.109 In/Sec	.310 G-s
FILL 2 - FILLER 2 MOTOR	(22-Jul-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.101 In/Sec	1.410 G-s
MIH - MOTOR INBOARD HORIZONTAL	.119 In/Sec	2.606 G-s
MIA - MOTOR INBOARD AXIAL	.102 In/Sec	.906 G-s
C-1 - AMMONIA COMPRESSOR C-1	(22-Jul-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.190 In/Sec	2.840 G-s
MIH - MOTOR INBOARD HORIZONTAL	.334 In/Sec	4.298 G-s
MIA - MOTOR INBOARD AXIAL	.177 In/Sec	1.548 G-s
PIA - PUMP INBOARD AXIAL	.174 In/Sec	.235 G-s
PIH - PUMP INBOARD HORIZONTAL	.172 In/Sec	.578 G-s
POH - PUMP OUTBOARD HORIZONTAL	.175 In/Sec	.234 G-s
C-2 - AMMONIA COMPRESSOR C-2	(22-Jul-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.410 In/Sec	.329 G-s
MIH - MOTOR INBOARD HORIZONTAL	.344 In/Sec	.550 G-s
MIA - MOTOR INBOARD AXIAL	.294 In/Sec	1.171 G-s
PIA - PUMP INBOARD AXIAL	.186 In/Sec	1.198 G-s
PIH - PUMP INBOARD HORIZONTAL	.178 In/Sec	1.241 G-s
POH - PUMP OUTBOARD HORIZONTAL	.142 In/Sec	.843 G-s
C-3 - AMMONIA COMPRESSOR C-3	(22-Jul-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	1.038 In/Sec	.230 G-s
MIH - MOTOR INBOARD HORIZONTAL	.743 In/Sec	1.079 G-s
MIA - MOTOR INBOARD AXIAL	.210 In/Sec	.340 G-s
PIA - PUMP INBOARD AXIAL	.154 In/Sec	.217 G-s
PIH - PUMP INBOARD HORIZONTAL	.158 In/Sec	.459 G-s
POH - PUMP OUTBOARD HORIZONTAL	.183 In/Sec	.399 G-s
C-4 - AMMONIA COMPRESSOR C-4	(22-Jul-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.154 In/Sec	.116 G-s
MIH - MOTOR INBOARD HORIZONTAL	.155 In/Sec	.100 G-s
MIA - MOTOR INBOARD AXIAL	.141 In/Sec	.044 G-s
PIA - PUMP INBOARD AXIAL	.046 In/Sec	.112 G-s
PIH - PUMP INBOARD HORIZONTAL	.224 In/Sec	.228 G-s
POH - PUMP OUTBOARD HORIZONTAL	.157 In/Sec	.157 G-s
C-5 - AMMONIA COMPRESSOR C-5	(22-Jul-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.566 In/Sec	.222 G-s
MIH - MOTOR INBOARD HORIZONTAL	.559 In/Sec	.352 G-s
MIA - MOTOR INBOARD AXIAL	.237 In/Sec	.332 G-s
PIA - PUMP INBOARD AXIAL	.112 In/Sec	.229 G-s
PIH - PUMP INBOARD HORIZONTAL	.110 In/Sec	.483 G-s
POH - PUMP OUTBOARD HORIZONTAL	.154 In/Sec	.191 G-s
C-6 - AMMONIA COMPRESSOR C-6	(22-Jul-22)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.311 In/Sec	.842 G-s
MIH - MOTOR INBOARD HORIZONTAL	.346 In/Sec	1.158 G-s

MIA - MOTOR INBOARD AXIAL	.200 In/Sec	.331 G-s
PIA - PUMP INBOARD AXIAL	.142 In/Sec	.401 G-s
PIH - PUMP INBOARD HORIZONTAL	.139 In/Sec	.509 G-s
POH - PUMP OUTBOARD HORIZONTAL	.119 In/Sec	.673 G-s

C-7 - AMMONIA COMPRESSOR C-7 (22-Jul-22)

	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.414 In/Sec	.273 G-s
MIH - MOTOR INBOARD HORIZONTAL	.357 In/Sec	.427 G-s
MIA - MOTOR INBOARD AXIAL	.240 In/Sec	.653 G-s
PIA - PUMP INBOARD AXIAL	.169 In/Sec	.218 G-s
PIH - PUMP INBOARD HORIZONTAL	.379 In/Sec	.733 G-s
POH - PUMP OUTBOARD HORIZONTAL	.330 In/Sec	.655 G-s

CWP2 - CITY WATER PUMP 2 (22-Jul-22)

	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.068 In/Sec	.833 G-s
MIH - MOTOR INBOARD HORIZONTAL	.115 In/Sec	.191 G-s
MIA - MOTOR INBOARD AXIAL	.084 In/Sec	.141 G-s

PWP1 - PROCESS WATER PUMP 1 (22-Jul-22)

	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.250 In/Sec	.847 G-s
MIH - MOTOR INBOARD HORIZONTAL	.170 In/Sec	.898 G-s
MIA - MOTOR INBOARD AXIAL	.051 In/Sec	.398 G-s

PWP2 - PROCESS WATER PUMP 2 (22-Jul-22)

	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.156 In/Sec	.302 G-s
MIH - MOTOR INBOARD HORIZONTAL	.084 In/Sec	.358 G-s
MIA - MOTOR INBOARD AXIAL	.072 In/Sec	.275 G-s

PWP3 - PROCESS WATER PUMP 3 (22-Jul-22)

	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.076 In/Sec	.088 G-s
MIH - MOTOR INBOARD HORIZONTAL	.073 In/Sec	.114 G-s
MIA - MOTOR INBOARD AXIAL	.071 In/Sec	.122 G-s

34-P-201-2 - RO #2 PUMP (22-Jul-22)

	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.116 In/Sec	.577 G-s
MOV - MOTOR OUTBOARD VERTICAL	.069 In/Sec	.124 G-s
MIH - MOTOR INBOARD HORIZONTAL	.072 In/Sec	.366 G-s
MIV - MOTOR INBOARD VERTICAL	.042 In/Sec	.198 G-s
MIA - MOTOR INBOARD AXIAL	.057 In/Sec	.249 G-s

26-P-101-1 - UF FILTRATE PUMP #1 (22-Jul-22)

	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.051 In/Sec	.656 G-s
MOV - MOTOR OUTBOARD VERTICAL	.032 In/Sec	.190 G-s
MIH - MOTOR INBOARD HORIZONTAL	.032 In/Sec	.479 G-s
MIV - MOTOR INBOARD VERTICAL	.036 In/Sec	.228 G-s
MIA - MOTOR INBOARD AXIAL	.033 In/Sec	.163 G-s

38-P-101-1 - RO PERMEATE PUMP #1 (22-Jul-22)

	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.093 In/Sec	.894 G-s
MOV - MOTOR OUTBOARD VERTICAL	.208 In/Sec	.128 G-s
MIH - MOTOR INBOARD HORIZONTAL	.093 In/Sec	.599 G-s
MIV - MOTOR INBOARD VERTICAL	.184 In/Sec	.119 G-s
MIA - MOTOR INBOARD AXIAL	.135 In/Sec	.285 G-s

SC-2 - SCREW COMPRESSOR 2 (22-Jul-22)

	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.097 In/Sec	.284 G-s
MOV - MOTOR OUTBOARD VERTICAL	.338 In/Sec	.701 G-s
MIH - MOTOR INBOARD HORIZONTAL	.092 In/Sec	.320 G-s
MIV - MOTOR INBOARD VERTICAL	.268 In/Sec	.365 G-s
MIA - MOTOR INBOARD AXIAL	.075 In/Sec	.780 G-s

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   1IA - COMPRESSOR INPUT INBOARD AXIAL          .125 In/Sec      1.080 G-s
   1IH - COMPRESSOR INPUT IB HORIZONTAL          .066 In/Sec       .557 G-s
   1IV - COMPRESSOR INPUT IB VERTICAL            .188 In/Sec       .481 G-s
   1OH - COMPRESSOR INPUT OB HORIZONTAL          .100 In/Sec      1.233 G-s
   1OV - COMPRESSOR INPUT OB VERTICAL            .169 In/Sec       .853 G-s
   2IA - COMPRESSOR OUTPUT INBOARD AXIAL         .143 In/Sec       .972 G-s

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   Clarification Of Vibration Units:
      Acc       -->  G-s       RMS
      Vel       -->  In/Sec    PK
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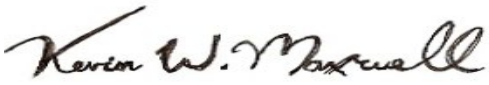
As always, it has been a pleasure to serve Coca-Cola West Memphis. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III

HI-SPEED INDUSTRIAL SERVICE

QualiTest® Diagnostics

Cell: 901-486-4565

Email: kwilliam@gohispeed.com