



QualiTest® Diagnostics

7030 Ryburn Dr. Millington, TN

Phone: (901) 873-5300

Fax: (901) 873-5301

www.gohispeed.com

August 1, 2025

North Shelby Plant
Millington, TN

The following is a summary of findings from the July 2025 monthly vibration survey at the North Shelby site.

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.

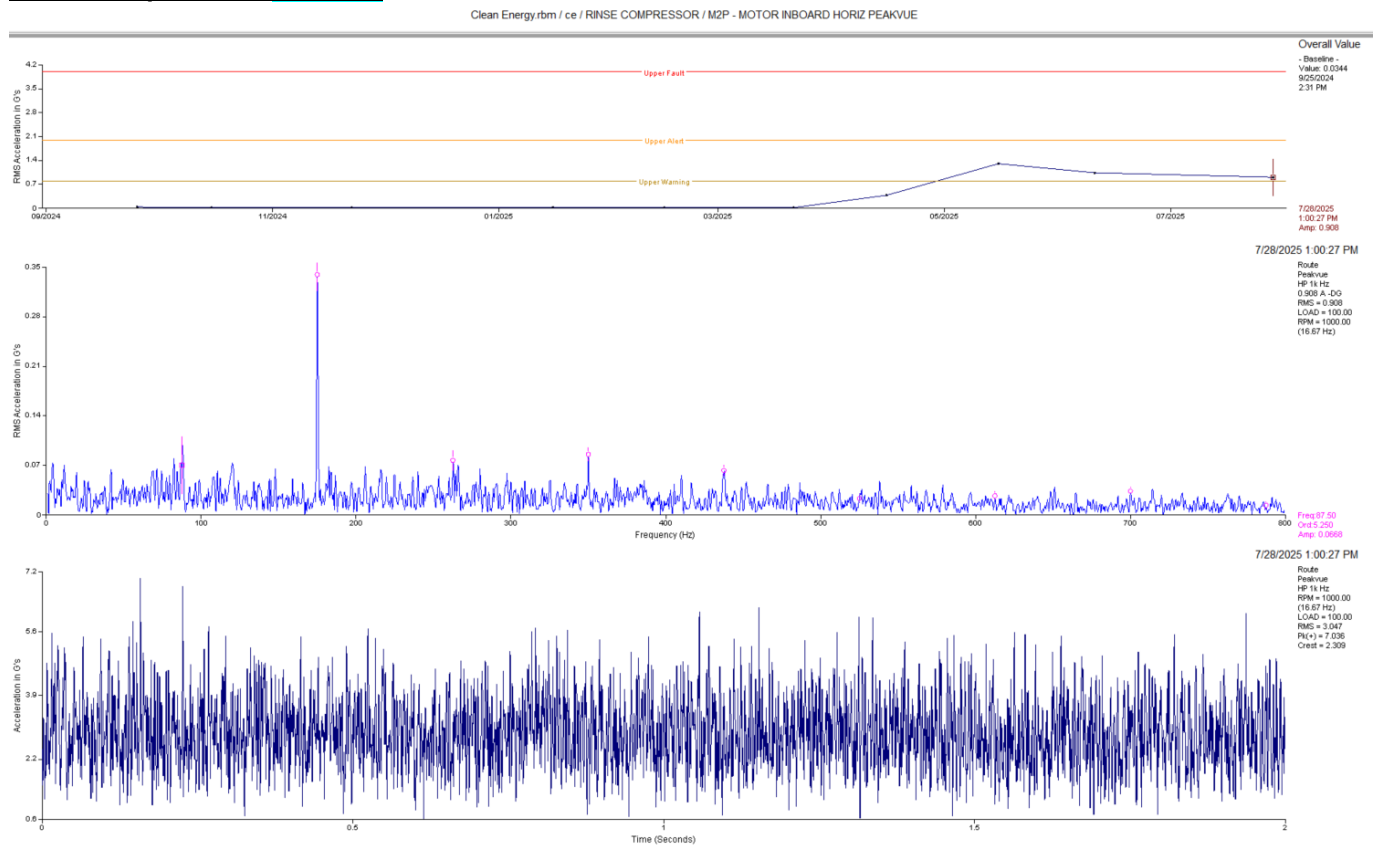
Class III: Defect (s) present that may cause failure in short term (less than 2 months). This should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.

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.

Defects

Rinse Compressor **CLASS II**



Observations:

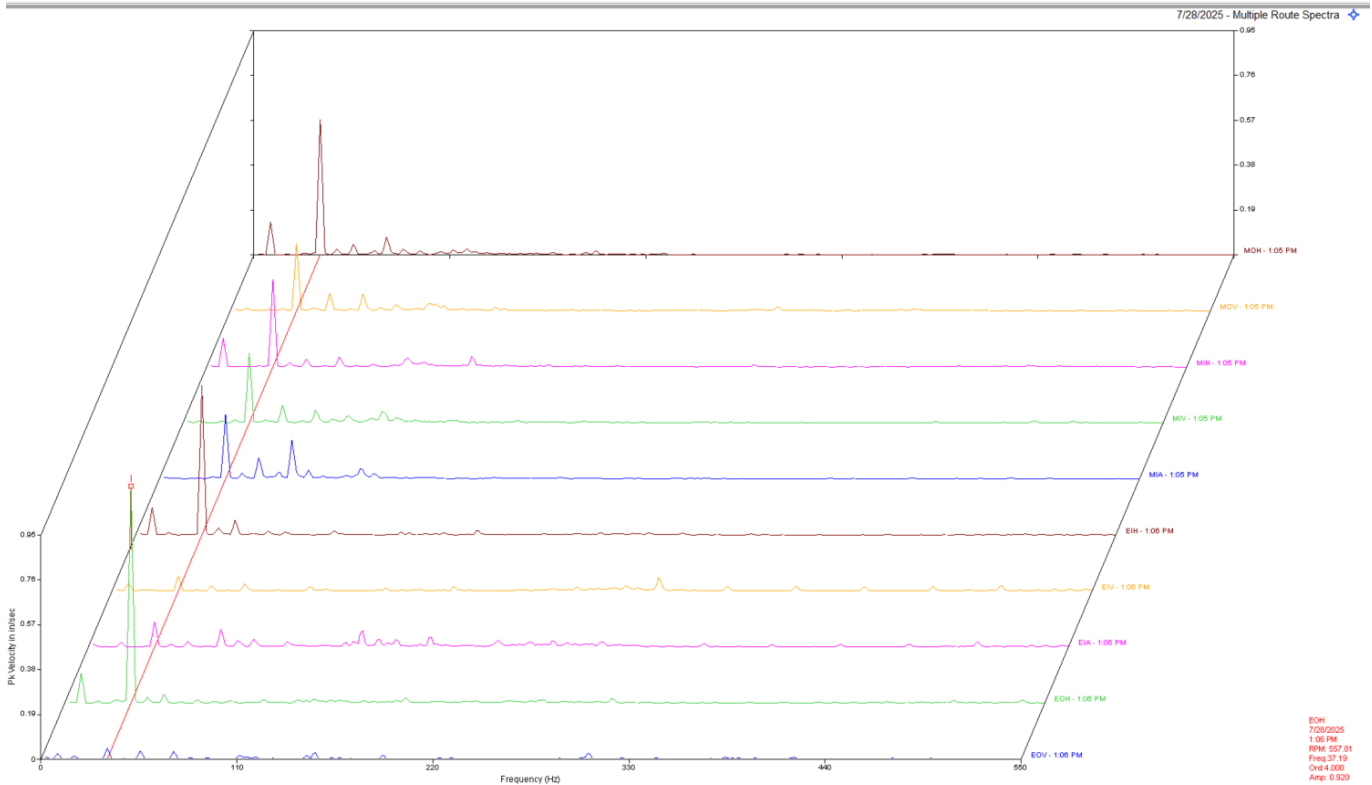
Drive motor data shows some high frequency vibration. Motor is also making a squealing type noise. Peakvue data shows some harmonics at 5.2 orders of rpm which is likely a bearing defect fundamental. MIH data also shows waveform peak amplitude is around 7 g's.

Recommendations:

Vibration characteristics indicate a lube issue or bearing wear. Motor likely needs attention during next extended shutdown. We are monitoring this closely. Rated as a **CLASS II** defect for now.

Vac/Rinse Cooling Fan #2 (Belt driven Fan) **CLASS II**

Clean Energy.rbm / ce / COOLING FAN 2



Observations:

Data above is the motor/fan multipoint spectral waterfall. There is a dominant vibration in the motor and the fan at a frequency that appears to be 4 x fan speed.

Recommendations:

We need to confirm the number of blades on the fan to help determine the 4 x fan rpm vibration in the unit.

Abbreviated Last Measurement Summary

Database: Clean Energy.rbm
Area: millington plant

MEASUREMENT POINT -----	OVERALL LEVEL -----	HFD / VHFD -----
301 FLARE - 301 FLARE BLOWER (10-Jun-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.072 In/Sec	1.052 G-s
MOV	.263 In/Sec	.292 G-s
MIH	.115 In/Sec	2.109 G-s
MIV	.154 In/Sec	.141 G-s
MIA	.050 In/Sec	.495 G-s
EIH	.176 In/Sec	.258 G-s
EIV	.082 In/Sec	.310 G-s
EIA	.068 In/Sec	.099 G-s
EOH	.096 In/Sec	.329 G-s
EOV	.240 In/Sec	.283 G-s
303 FLARE - 303 FLARE BLOWER (28-Jul-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.056 In/Sec	1.412 G-s
MOV	.082 In/Sec	.183 G-s
MIH	.102 In/Sec	.987 G-s
MIV	.098 In/Sec	.167 G-s
MIA	.049 In/Sec	.315 G-s
EIH	.080 In/Sec	.261 G-s
EIV	.044 In/Sec	.173 G-s
EIA	.045 In/Sec	.181 G-s
EOH	.044 In/Sec	.579 G-s
EOV	.210 In/Sec	.156 G-s
TX301 FAN - TX301 AFTERCOOLER FAN (28-Jul-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.322 In/Sec	.614 G-s
MIH	.092 In/Sec	1.051 G-s
MIA	.194 In/Sec	.437 G-s
FIH	.055 In/Sec	.072 G-s
FOH	.139 In/Sec	.137 G-s
RINSE COMP - RINSE COMPRESSOR (28-Jul-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.128 In/Sec	2.295 G-s
M1P	1.479 G-s	
MIH	.082 In/Sec	1.580 G-s
M2P	.908 G-s	
MIA	.093 In/Sec	.206 G-s
IIH	.075 In/Sec	.765 G-s
IIA	.076 In/Sec	.172 G-s
IOH	.103 In/Sec	.484 G-s
OIH	.076 In/Sec	.831 G-s
OIA	.125 In/Sec	.146 G-s
OOH	.095 In/Sec	.861 G-s
VAC COMP - VACUUM COMPRESSOR (28-Jul-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.070 In/Sec	1.040 G-s
MIH	.107 In/Sec	1.308 G-s
MIA	.076 In/Sec	.214 G-s
IIH	.098 In/Sec	.496 G-s
IIA	.078 In/Sec	.087 G-s
IOH	.070 In/Sec	.733 G-s
OIH	.074 In/Sec	.492 G-s
OIA	.054 In/Sec	.182 G-s
OOH	.105 In/Sec	.900 G-s

COOLFAN1	- COOLING FAN 1	(10-Jun-25)
	OVERALL LEVEL	1K-20KHz
MOH	.030 In/Sec	.803 G-s
MOV	.028 In/Sec	.243 G-s
MIH	.023 In/Sec	.747 G-s
MIV	.026 In/Sec	.190 G-s
MIA	.021 In/Sec	.133 G-s

COOLFAN2	- COOLING FAN 2	(28-Jul-25)
	OVERALL LEVEL	1K-20KHz
MOH	.604 In/Sec	.494 G-s
MOV	.319 In/Sec	.099 G-s
MIH	.407 In/Sec	.556 G-s
MIV	.330 In/Sec	.178 G-s
MIA	.352 In/Sec	.098 G-s
EIH	.653 In/Sec	.874 G-s
EIV	.152 In/Sec	.335 G-s
EIA	.225 In/Sec	.275 G-s
EOH	.937 In/Sec	.411 G-s
EOV	.111 In/Sec	.134 G-s

101A COMP	- 101A FEED COMPRESSOR	(10-Jun-25)
	OVERALL LEVEL	1K-20KHz
MOH	.250 In/Sec	.326 G-s
MIH	.189 In/Sec	.247 G-s
MIA	.075 In/Sec	.297 G-s
IIH	.208 In/Sec	1.384 G-s
IIA	.372 In/Sec	1.514 G-s
IOH	.247 In/Sec	1.452 G-s
OIH	.203 In/Sec	1.243 G-s
OIA	.113 In/Sec	2.382 G-s
OOH	.137 In/Sec	1.218 G-s

101B COMP	- 101B FEED COMPRESSOR	(28-Jul-25)
	OVERALL LEVEL	1K-20KHz
MOH	.448 In/Sec	.238 G-s
MIH	.158 In/Sec	.211 G-s
MIA	.114 In/Sec	.224 G-s
IIH	.104 In/Sec	1.511 G-s
IIA	.144 In/Sec	1.048 G-s
IOH	.174 In/Sec	.688 G-s
OIH	.137 In/Sec	.691 G-s
OIA	.124 In/Sec	3.264 G-s
OOH	.220 In/Sec	1.929 G-s

HX132A FAN	- HX132A GAS OIL COOLER FAN	(10-Jun-25)
	OVERALL LEVEL	1K-20KHz
EIH	.041 In/Sec	.051 G-s
EOH	.051 In/Sec	.096 G-s

HX132B FAN	- HX132B GAS OIL COOLER FAN	(28-Jul-25)
	OVERALL LEVEL	1K-20KHz
MOH	.052 In/Sec	.022 G-s
MIH	.089 In/Sec	.120 G-s
EIH	.109 In/Sec	.082 G-s
EOH	.061 In/Sec	.029 G-s

451A PUMP	- 451A VACCUM PUMP	(28-Jul-25)
	OVERALL LEVEL	1K-20KHz
MOH	.076 In/Sec	.645 G-s
MOV	.074 In/Sec	.296 G-s
MIH	.087 In/Sec	.566 G-s
MIV	.113 In/Sec	.292 G-s
MIA	.048 In/Sec	.151 G-s
EIH	.145 In/Sec	1.397 G-s
EIV	.121 In/Sec	.200 G-s
EIA	.074 In/Sec	.397 G-s
EOH	.164 In/Sec	.361 G-s
EOV	.103 In/Sec	.140 G-s

HX453A FAN - HX453A VAC PUMP OIL COOL FAN (28-Jul-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.215 In/Sec	.140 G-s
MIH	.123 In/Sec	.101 G-s
451B PUMP - 451B VACCUM PUMP (28-Jul-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.045 In/Sec	.800 G-s
MOV	.057 In/Sec	.153 G-s
MIH	.059 In/Sec	.706 G-s
MIV	.061 In/Sec	.201 G-s
MIA	.030 In/Sec	.178 G-s
EIH	.168 In/Sec	.429 G-s
EIV	.137 In/Sec	.209 G-s
EIA	.129 In/Sec	.207 G-s
EOH	.208 In/Sec	.696 G-s
EOV	.199 In/Sec	.128 G-s
HX453B FAN - HX453B VAC PUMP OIL COOL FAN (28-Jul-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.160 In/Sec	.217 G-s
MIH	.108 In/Sec	.140 G-s
451C PUMP - 451C VACCUM PUMP (28-Jul-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.067 In/Sec	1.167 G-s
MOV	.105 In/Sec	.174 G-s
MIH	.090 In/Sec	.377 G-s
MIV	.108 In/Sec	.075 G-s
MIA	.065 In/Sec	.073 G-s
EIH	.108 In/Sec	.764 G-s
EIV	.094 In/Sec	.132 G-s
EIA	.083 In/Sec	.138 G-s
EOH	.142 In/Sec	.707 G-s
EOV	.140 In/Sec	.132 G-s
HX453C FAN - HX453C VAC PUMP OIL COOL FAN (28-Jul-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.157 In/Sec	.427 G-s
MIH	.123 In/Sec	.219 G-s
451D PUMP - 451D VACCUM PUMP (28-Jul-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.058 In/Sec	1.372 G-s
MOV	.078 In/Sec	.377 G-s
MIH	.079 In/Sec	1.289 G-s
MIV	.077 In/Sec	.246 G-s
MIA	.037 In/Sec	.264 G-s
EIH	.173 In/Sec	.566 G-s
EIV	.138 In/Sec	.149 G-s
EIA	.093 In/Sec	.105 G-s
EOH	.190 In/Sec	.563 G-s
EOV	.176 In/Sec	.164 G-s
HX453D FAN - HX453D VAC PUMP OIL COOL FAN (28-Jul-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.215 In/Sec	.117 G-s
MIH	.185 In/Sec	.091 G-s
506A COMP - 506A PRODUCT COMPRESSOR (28-Jul-25)		
	OVERALL LEVEL	1K-20KHz
MOH	.036 In/Sec	.366 G-s
MIH	.050 In/Sec	.562 G-s
MIA	.075 In/Sec	.566 G-s
IIH	.246 In/Sec	.962 G-s
IIA	.153 In/Sec	1.232 G-s
IOH	.227 In/Sec	2.376 G-s
OIH	.282 In/Sec	2.014 G-s
OIA	.147 In/Sec	1.503 G-s
OOH	.283 In/Sec	2.388 G-s

HX507A FAN - HX507A GAS COOL FAN		(28-Jul-25)
	OVERALL LEVEL	1K-20KHz
MOH	.157 In/Sec	1.216 G-s
MIH	.227 In/Sec	.897 G-s

506B COMP - 506B PRODUCT COMPRESSOR		(10-Jun-25)
	OVERALL LEVEL	1K-20KHz
MOH	.044 In/Sec	.241 G-s
MIH	.093 In/Sec	.299 G-s
MIA	.079 In/Sec	.402 G-s
IIH	.124 In/Sec	.870 G-s
IIA	.148 In/Sec	.980 G-s
IOH	.187 In/Sec	2.200 G-s
OIH	.263 In/Sec	.889 G-s
OIA	.126 In/Sec	1.317 G-s
OOH	.212 In/Sec	1.558 G-s

HX507B FAN - HX507B GAS COOL FAN		(10-Jun-25)
	OVERALL LEVEL	1K-20KHz
MOH	.096 In/Sec	.047 G-s
MIH	.123 In/Sec	.084 G-s

Clarification Of Vibration Units:

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

As always, it has been a pleasure to serve North Shelby-Archaea Energy. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III



QualiTest® Diagnostics

Cell: 901-486-4565

Email: kwilliam@gohispeed.com