



QualiTest® Diagnostics

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July 14th, 2023

Nathan Allen
North Shelby Plant
Millington, TN

Nathan,

The following is a summary of findings from the July 2023 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

101-B Feed Compressor

Compressor data shows some high frequency acceleration amplitude. Peaks in spectral data suggest possible wear of internal compressor components. We are watching this closely. Rated as a **CLASS I** defect.

506 B Product Compressor

Motor data shows defects are present in motor bearings. Motor will need to be swapped out as soon as practical. It is recommended to swap compressors if this has not been done already. Rated as a **CLASS III** defect.

Abbreviated Last Measurement Summary

Database: Clean Energy.rbm
Area: millington plant
Route No. 1: CLEAN ENERGY

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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301 FLARE - 301 FLARE BLOWER	(05-Jul-23)	
	OVERALL LEVEL	1K-20KHz
MOH	.086 In/Sec	.701 G-s
MOV	.262 In/Sec	.180 G-s
MIH	.116 In/Sec	.692 G-s
MIV	.161 In/Sec	.339 G-s
MIA	.054 In/Sec	.430 G-s
EIH	.195 In/Sec	.276 G-s
EIV	.072 In/Sec	.366 G-s
EIA	.043 In/Sec	.297 G-s
EOH	.150 In/Sec	.351 G-s
EOV	.118 In/Sec	.518 G-s
RINSE COMP - RINSE COMPRESSOR	(05-Jul-23)	
	OVERALL LEVEL	1K-20KHz
MOH	.087 In/Sec	2.062 G-s
MIH	.077 In/Sec	1.584 G-s
MIA	.047 In/Sec	.162 G-s
IIH	.090 In/Sec	1.123 G-s
IIA	.093 In/Sec	.436 G-s
IOH	.082 In/Sec	.554 G-s
VAC COMP - VACUUM COMPRESSOR	(05-Jul-23)	
	OVERALL LEVEL	1K-20KHz
MOH	.064 In/Sec	1.095 G-s
MIH	.057 In/Sec	2.102 G-s
MIA	.079 In/Sec	.250 G-s
IIH	.068 In/Sec	1.058 G-s
IIA	.072 In/Sec	.553 G-s
IOH	.101 In/Sec	.646 G-s
OIH	.069 In/Sec	1.031 G-s
OIA	.059 In/Sec	.519 G-s
OOH	.090 In/Sec	1.183 G-s
101B COMP - 101B FEED COMPRESSOR	(05-Jul-23)	
	OVERALL LEVEL	1K-20KHz
MOH	.131 In/Sec	.237 G-s
MIH	.134 In/Sec	.237 G-s
MIA	.041 In/Sec	.213 G-s
IIH	.131 In/Sec	2.015 G-s
IIA	.301 In/Sec	1.786 G-s
IOH	.137 In/Sec	1.612 G-s

OIH	.142 In/Sec	4.267 G-s
OIA	.147 In/Sec	4.366 G-s
OOH	.138 In/Sec	2.037 G-s

HX132B FAN - HX132B GAS OIL COOLER FAN (05-Jul-23)

	OVERALL LEVEL	1K-20KHz
MOH	.058 In/Sec	.025 G-s
MIH	.140 In/Sec	.103 G-s
EIH	.227 In/Sec	.075 G-s
EOH	.061 In/Sec	.027 G-s

451A PUMP - 451A VACCUM PUMP (05-Jul-23)

	OVERALL LEVEL	1K-20KHz
MOH	.071 In/Sec	.742 G-s
MOV	.080 In/Sec	.279 G-s
MIH	.094 In/Sec	.443 G-s
MIV	.130 In/Sec	.701 G-s
MIA	.055 In/Sec	.323 G-s
EIH	.175 In/Sec	.380 G-s
EIV	.112 In/Sec	.406 G-s
EIA	.117 In/Sec	.375 G-s
EOH	.206 In/Sec	.428 G-s
EOV	.161 In/Sec	.450 G-s

HX453A FAN - HX453A VAC PUMP OIL COOL FAN (05-Jul-23)

	OVERALL LEVEL	1K-20KHz
MOH	.216 In/Sec	.146 G-s
MIH	.122 In/Sec	.115 G-s

451B PUMP - 451B VACCUM PUMP (05-Jul-23)

	OVERALL LEVEL	1K-20KHz
MOH	.049 In/Sec	.474 G-s
MOV	.063 In/Sec	.377 G-s
MIH	.063 In/Sec	1.363 G-s
MIV	.064 In/Sec	.236 G-s
MIA	.029 In/Sec	.127 G-s
EIH	.162 In/Sec	.492 G-s
EIV	.123 In/Sec	.229 G-s
EIA	.128 In/Sec	.298 G-s
EOH	.211 In/Sec	.624 G-s
EOV	.188 In/Sec	.376 G-s

HX453B FAN - HX453B VAC PUMP OIL COOL FAN (05-Jul-23)

	OVERALL LEVEL	1K-20KHz
MOH	.156 In/Sec	.203 G-s
MIH	.116 In/Sec	.169 G-s

451C PUMP - 451C VACCUM PUMP (05-Jul-23)

	OVERALL LEVEL	1K-20KHz
MOH	.119 In/Sec	.500 G-s
MOV	.108 In/Sec	.134 G-s
MIH	.145 In/Sec	.533 G-s
MIV	.206 In/Sec	.120 G-s
MIA	.076 In/Sec	.096 G-s
EIH	.128 In/Sec	.617 G-s
EIV	.123 In/Sec	.241 G-s
EIA	.090 In/Sec	.303 G-s
EOH	.127 In/Sec	.687 G-s
EOV	.112 In/Sec	.213 G-s

HX453C FAN - HX453C VAC PUMP OIL COOL FAN (05-Jul-23)

	OVERALL LEVEL	1K-20KHz
MOH	.148 In/Sec	.283 G-s
MIH	.093 In/Sec	.194 G-s

451D PUMP - 451D VACCUM PUMP (05-Jul-23)

	OVERALL LEVEL	1K-20KHz
MOH	.104 In/Sec	1.647 G-s
MOV	.098 In/Sec	.316 G-s
MIH	.115 In/Sec	3.563 G-s

MIV	.077 In/Sec	.381 G-s
MIA	.048 In/Sec	.403 G-s
EIH	.200 In/Sec	.515 G-s
EIV	.135 In/Sec	.151 G-s
EIA	.129 In/Sec	.142 G-s

506B COMP - 506B PRODUCT COMPRESSOR (05-Jul-23)

OVERALL LEVEL 1K-20KHz

MOH	.129 In/Sec	3.025 G-s
MIH	.133 In/Sec	5.696 G-s
MIA	.110 In/Sec	3.598 G-s
IIH	.176 In/Sec	.486 G-s
IIA	.118 In/Sec	1.181 G-s
IOH	.219 In/Sec	1.895 G-s
OIH	.208 In/Sec	1.372 G-s
OIA	.192 In/Sec	1.375 G-s

HX507B FAN - HX507B GAS COOL FAN (05-Jul-23)

OVERALL LEVEL 1K-20KHz

MOH	.091 In/Sec	.047 G-s
MIH	.151 In/Sec	.097 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



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