



QualiTest® Diagnostics

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August 1, 2023

Steve Benesch
Valero West Memphis Terminal
West Memphis, AR

Steve,

The following is a summary of findings from the July 2023 quarterly 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

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.

31-15-042 Short Horn Lateral Pump

Motor/Pump was not in service during this survey.

#1 Barge Loading Pump

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

#2 Barge Loading Pump

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

#3 Barge Loading Pump

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

#4 Barge Loading Pump

Motor/Pump was not in service during this survey.

#8 LX Truck Loading Pump

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

#12 LX Truck Loading Pump

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

#13 XX Truck Loading Pump

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

#14 XX Truck Loading Pump

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

#17 LS Truck Loading Pump

Motor/Pump was not in service during this survey.

#15NL Truck Loading Pump

Pump data shows some signs of bearing defects/wear in the pump. We will monitor this issue closely. Rated as a **CLASS I** defect.

#18 NL Truck Loading Pump

Vibration data indicates an increased 1 x rpm vibration in the axial direction of the pump. There is also a 2 x rpm vibration present in the outboard end of the pump. This may be caused by excessive pump shaft run out. Inspect the pump shaft as time allows. Perform a run out check and lift check using a dial indicator with magnetic base. Rated as a **CLASS II** defect.

#6 Transfer Pump

Motor/Pump was not in service during this survey.

#5 Truck Loading Pump

Motor data shows an increase in high frequency amplitude. Spectral data indicates some bearing defects may be present in the motor bearings. Inspect motor as time allows. Rated as a **CLASS II** defect.

#7 Truck Loading Pump

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

#43 Bio-Diesel Pump North

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

#44 Bio-Diesel Pump Middle

Motor data is still showing elevated 1 x rpm vibration, especially in the inboard axial. Amplitude is .9 ips. This is very high and could be coupling related. Inspect coupling and alignment. Ensure motor does not have a soft foot condition. Motor drive end bearing data also indicates bearing defects. Inspect unit for these issues as time allows. We will monitor these issues closely. Rated as a **CLASS II** defect.

#45 Bio-Diesel Pump South

Unit was out of service during this survey; however, the following likely still applies: Data of the motor and pump indicates motor bearing issues and pump cavitation. Unit will likely need attention in the next few months. Rated as a **CLASS II** defect for now.

Abbreviated Last Measurement Summary *****

Database: west memphis.rbm
Station: WEST MEMPHIS TERMINAL

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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#1 BARGE - #1 BARGE LOADING PUMP	(31-Jul-23)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.187 In/Sec	.587 G-s
MOV	.113 In/Sec	.414 G-s
MIH	.108 In/Sec	.735 G-s
MIV	.069 In/Sec	.356 G-s
MIA	.070 In/Sec	.405 G-s
#2 BARGE - #2 BARGE LOADING PUMP	(31-Jul-23)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.192 In/Sec	.536 G-s
MOV	.180 In/Sec	.760 G-s
MIH	.115 In/Sec	.376 G-s
MIV	.109 In/Sec	.334 G-s
MIA	.067 In/Sec	.362 G-s
#3 BARGE - #3 BARGE LOADING PUMP	(31-Jul-23)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.085 In/Sec	.715 G-s
MOV	.160 In/Sec	.372 G-s
MIH	.090 In/Sec	.198 G-s
MIV	.123 In/Sec	.360 G-s
MIA	.129 In/Sec	.114 G-s
#4 BARGE - #4 BARGE LOADING PUMP	(31-Jul-23)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.081 In/Sec	.730 G-s
MOV	.080 In/Sec	.385 G-s
MIH	.091 In/Sec	.609 G-s
MIV	.146 In/Sec	.769 G-s
MIA	.114 In/Sec	.065 G-s
#12LX PUMP - #12 LX TRUCK LOADING PUMP	(31-Jul-23)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.252 In/Sec	.110 G-s
MOV	.209 In/Sec	.031 G-s
MIH	.135 In/Sec	.153 G-s

MIV	.079 In/Sec	.047 G-s
MIA	.067 In/Sec	.072 G-s
#13XX PUMP - #13 XX TRUCK LOADING PUMP (31-Jul-23)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.062 In/Sec	.324 G-s
MOV	.061 In/Sec	.224 G-s
MIH	.041 In/Sec	.456 G-s
MIV	.054 In/Sec	.105 G-s
MIA	.042 In/Sec	.165 G-s
#14XX PUMP - #14 XX TRUCK LOADING PUMP (31-Jul-23)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.068 In/Sec	.487 G-s
MOV	.077 In/Sec	.227 G-s
MIH	.047 In/Sec	.637 G-s
MIV	.083 In/Sec	.173 G-s
MIA	.082 In/Sec	.146 G-s
#15NL PUMP - #15 NL TRUCK LOADING PUMP (31-Jul-23)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.062 In/Sec	.176 G-s
MOV	.055 In/Sec	.111 G-s
MIH	.050 In/Sec	.184 G-s
MIV	.049 In/Sec	.063 G-s
MIA	.061 In/Sec	.051 G-s
EIH	.150 In/Sec	1.440 G-s
EIV	.253 In/Sec	.565 G-s
EIA	.160 In/Sec	.499 G-s
EOH	.096 In/Sec	.500 G-s
EOV	.152 In/Sec	.436 G-s
EOA	.159 In/Sec	.290 G-s
#18NL PUMP - #18 NL TRUCK LOADING PUMP (31-Jul-23)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.073 In/Sec	.068 G-s
MOV	.242 In/Sec	.084 G-s
MIH	.076 In/Sec	.097 G-s
MIV	.556 In/Sec	.080 G-s
MIA	.140 In/Sec	.034 G-s
EIH	.361 In/Sec	.078 G-s
EIV	.562 In/Sec	.097 G-s
EIA	.374 In/Sec	.099 G-s
EOH	.157 In/Sec	.237 G-s
EOV	.328 In/Sec	.216 G-s
EOA	.478 In/Sec	.094 G-s
#5TRCKLOAD - #5 TRUCK LOADING PUMP (31-Jul-23)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.114 In/Sec	.243 G-s
MOV	.163 In/Sec	.113 G-s
MIH	.116 In/Sec	.404 G-s
MIV	.205 In/Sec	.194 G-s
MIA	.154 In/Sec	.125 G-s
EIH	.083 In/Sec	.226 G-s
EIV	.161 In/Sec	.084 G-s
EIA	.104 In/Sec	.052 G-s
EOH	.097 In/Sec	.160 G-s
EOV	.203 In/Sec	.156 G-s
EOA	.196 In/Sec	.226 G-s
#7TRCKLOAD - #7 TRUCK LOADING PUMP (31-Jul-23)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.127 In/Sec	.108 G-s
MOV	.101 In/Sec	.053 G-s
MIH	.079 In/Sec	.098 G-s
MIV	.126 In/Sec	.047 G-s
MIA	.091 In/Sec	.040 G-s
EIH	.110 In/Sec	.194 G-s
EIV	.195 In/Sec	.187 G-s

EIA	.111 In/Sec	.197 G-s
EOH	.230 In/Sec	.151 G-s
EOV	.167 In/Sec	.178 G-s
EOA	.134 In/Sec	.110 G-s

#43BOIDSLP - #43 BIO-DIESEL PUMP NORTH (31-Jul-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.140 In/Sec	.304 G-s
MOV	.167 In/Sec	.102 G-s
MIH	.137 In/Sec	.348 G-s
MIV	.186 In/Sec	.058 G-s
MIA	.127 In/Sec	.101 G-s
EIH	.098 In/Sec	.285 G-s
EIV	.234 In/Sec	.156 G-s
EIA	.232 In/Sec	.268 G-s
EOH	.093 In/Sec	.544 G-s
EOV	.322 In/Sec	.304 G-s
EOA	.112 In/Sec	.295 G-s

#44BOIDSLP - #44 BIO-DIESEL PUMP MIDDLE (31-Jul-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.501 In/Sec	1.474 G-s
MOV	.330 In/Sec	1.162 G-s
MIH	.205 In/Sec	2.963 G-s
MIV	.181 In/Sec	1.220 G-s
MIA	.586 In/Sec	.755 G-s
EIH	.213 In/Sec	.532 G-s
EIV	.236 In/Sec	.341 G-s
EIA	.135 In/Sec	.316 G-s
EOH	.170 In/Sec	.721 G-s
EOV	.269 In/Sec	.422 G-s
EOA	.317 In/Sec	.280 G-s

Clarification Of Vibration Units:

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

As always, it has been a pleasure to serve the Valero West Memphis Truck Terminal. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III



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