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January 15, 2025

Steve Benesch Valero West Memphis Terminal West Memphis, AR

Steve,

The following is a summary of findings from the January 2025 quarterly vibration survey at your facility.

QualiTest® uses a four-step rating system for defects.

<u>Class I:</u> Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

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

<u>Class III</u>: 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.

<u>Class IV</u>; 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.

Defect Summary

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 data is starting to show elevated noise floor in spectral data. This is likely a combination of bearing wear and lubrication issue. We will continue to monitor this issue closely. Rated as a **CLASS I** defect for now.

#3 Barge Loading Pump

Motor/Pump was not in service 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 is still showing some signs of low level bearing defects/wear in the pump.. We will monitor this issue closely. Rated as a **CLASS I** defect.

#18 NL Truck Loading Pump

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

#6 Transfer Pump

Motor/Pump was not in service during this survey.

#5 Truck Loading Pump

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

#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 indicates defects in the motor bearings. Motor also has some 1 x rpm vibration. Ensure couplings and alignment are good. Rated as a **CLASS III** defect.

#45 Bio-Diesel Pump South

Motor/Pump was not in service during this survey.

We recommend changing the coupling type of the Bio-Diesel Pumps. The type of coupling that we recommend is the Rexnord Omega Coupling. TB Woods couplings tend to cause high vibration in high speed pumps when couplings begin to wear.

See link below for coupling information.

Omega Elastomeric Couplings Elastomeric Couplings - Couplings | Rexnord

Abbreviated Last Measurement Summary								

Database: west memphis.rbm Station: WEST MEMPHIS TERMINAL								
MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD						
#1 BARGE - #1 BARGE LOADING	PUMP (14-3	Jan-25)						
	OVERALL LEVEL	1 - 20 KHz						
MOH	.118 In/Sec	.713 G-s						
MOV	.082 In/Sec	.148 G-s						
MIH	.077 In/Sec	.663 G-s						
MIV	.093 In/Sec	.117 G-s						
MIA	.069 In/Sec	.171 G-s						
#2 BARGE - #2 BARGE LOADING	PUMP (14-3	Jan-25)						
	OVERALL LEVEL	1 - 20 KHz						
MOH	.094 In/Sec	.692 G-s						
MOV	.128 In/Sec	.203 G-s						
MIH	.054 In/Sec	.469 G-s						
MIV	.056 In/Sec	.159 G-s						
MIA	.050 In/Sec	.164 G-s						
#8LX PUMP - #8 LX TRUCK LOAD	ING PUMP (14-3	Jan-25)						
	OVERALL LEVEL	1 - 20 KHz						
MOH	.038 In/Sec	.601 G-s						
MOV	.049 In/Sec	.093 G-s						
MIH	.022 In/Sec	.510 G-s						
MIV	.047 In/Sec	.069 G-s						

MIA					.038	In/Sec	.08	2 G-s
#12TY DIMD	_	#10	τv	TDUCK	TOADTNC D		(14-Tap-2	5)
#IZLA POMP	-	#12	ТУ	TRUCK	LOADING P	OMP T.T. T.F.VFT	(14-Jan-2)	20 KH4
MOH					246	In/Sec	24	1 G-s
MOV					.209	In/Sec	.03	6 G-s
MIH					.155	In/Sec	.18	6 G-s
MIV					.095	In/Sec	.04	1 G-s
MIA					.065	In/Sec	.03	6 G-s
#13XX PUMP	-	#13	XX	TRUCK	LOADING P	UMP	(14-Jan-2	5)
					OVERA	LL LEVEI	. 1-	20 KHz
MOH					.084	In/Sec	. 44	5 G-S
MOV					.093	In/Sec	.09	IG-S
MIH					.000	In/Sec	.54	0 C-s
MTA					.005	In/Sec	.05	0 G-s
					.050	111, 000	.05	005
#14XX PUMP	-	#14	xx	TRUCK	LOADING P	UMP	(14-Jan-2	5)
					OVERA	LL LEVEI	1 -	20 KHz
MOH					.231	In/Sec	.85	5 G-s
MOV					.106	In/Sec	.17	9 G-s
MIH					.138	In/Sec	. 82	1 G-s
MIV					.088	In/Sec	.10	4 G-s
MIA					.092	In/Sec	.19	6 G-s
#15NL PUMP	_	#15	NL	TRUCK	LOADING P	UMP	(14-Jan-2	5)
					OVERA	LL LEVEI	. 1-	20 KHz
MOH					.037	In/Sec	.15	0 G-s
MOV					.042	In/Sec	.04	2 G-s
MIH					.031	In/Sec	.18	7 G-s
MIV					.063	In/Sec	.03	5 G-s
MIA					.045	In/Sec	.04	3 G-s
EIH					.120	In/Sec	1.29	3 G-s
EIV					.202	In/Sec	. 38	4 G-s
EIA					.130	In/Sec	.16	7 G-s
EOH					.149	In/Sec	.46	7 G-s
EOV					.158	In/Sec	.10	1 G-s 4 G-s
2011						111, 566		105
#18NL PUMP	-	#18	NL	TRUCK	LOADING P	UMP	(14-Jan-2	5)
					OVERA	LL LEVEI	. 1-	20 KHz
MOH					.043	In/Sec	. 12	4 G-s
MOV					.093	In/Sec	.03	
MIH					227	In/Sec	.00	5 G-e
MTA					056	In/Sec	.01	2 G-s
EIH					.197	In/Sec	.07	6 G-s
EIV					.337	In/Sec	.07	8 G-s
EIA					.168	In/Sec	.12	6 G-s
EOH					.072	In/Sec	. 33	1 G-s
EOV					.161	In/Sec	.09	6 G-s
EOA					.167	In/Sec	.08	7 G-s
#5TRCKLOAD	_	#5 J	RUC	K LOAI	TNG PUMP		(14Tan-2	5)
#01110112012D		"0 -			OVERA	LL LEVEI	1 -	20 KHz
MOH					.125	In/Sec	.29	1 G-s
MOV					.170	In/Sec	.06	9 G-s
MIH					.132	In/Sec	.46	4 G-s
MIV					.223	In/Sec	.11	7 G-s
MIA					.178	In/Sec	.07	6 G-s
EIH					.146	In/Sec	.02	2 G-s
EIV					.161	In/Sec	.11	9 G-s
EIA					.155	In/Sec	.03	2 G-s
EOH					.146	In/Sec	. 52	2 G-s
EOV					.221	In/Sec	.13	IG-S
EOA					.227	in/Sec	.19	o G-S
#7TRCKLOAD	-	#7 I	ruc	CK LOAI	DING PUMP OVERA	LL LEVEI	(14-Jan-2	5) 20 KHz
								_

MOH	.152 In/Sec	.098 G-s	
MOV	.193 In/Sec	.029 G-s	
MIH	.098 In/Sec	.122 G-s	
MIV	.244 In/Sec	.022 G-s	
MIA	.142 In/Sec	.030 G-s	
EIH	.183 In/Sec	.167 G-s	
EIV	.325 In/Sec	.048 G-s	
EIA	.263 In/Sec	.065 G-s	
EOH	.225 In/Sec	.433 G-s	
EOV	.167 In/Sec	.091 G-s	
EOA	.221 In/Sec	.078 G-s	
#43BOIDSLP - #43 BIO-DIESEL	PUMP NORTH	(14-Jan-25)	
	OVERALL LEVEI	1 - 20 KHz	
MOH	.147 In/Sec	.543 G-s	
MOV	.184 In/Sec	.151 G-s	
MIH	.098 In/Sec	.625 G-s	
MIV	.138 In/Sec	.133 G-s	
MIA	.106 In/Sec	.166 G-s	
EIH	.115 In/Sec	.358 G-s	
EIV	.203 In/Sec	.161 G-s	
EIA	.072 In/Sec	.324 G-s	
EOH	.099 In/Sec	.773 G-s	
EOV	.308 In/Sec	.215 G-s	
EOA	.154 In/Sec	.238 G-s	
#44BOIDSLP - #44 BIO-DIESEL	PUMP MIDDLE	(14-Jan-25)	
	OVERALL LEVEI	1 - 20 KHz	
MOH	.348 In/Sec	2.111 G-s	
MOV	.201 In/Sec	.871 G-s	
MIH	.312 In/Sec	3.825 G-s	
MIV	.389 In/Sec	.710 G-s	
MIA	.503 In/Sec	.604 G-s	
EIH	.258 In/Sec	.415 G-s	
EIV	.348 In/Sec	.193 G-s	
EIA	.180 In/Sec	.257 G-s	
EOH	.095 In/Sec	.712 G-s	
EOV	.253 In/Sec	.200 G-s	
EOA	.207 In/Sec	.246 G-s	
Clarification of Vibration Unit	·		-
VEL / IN/SEC PR			

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,

Keven W. Maxwell /

ISO Certified Vibration Analyst, Category III



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