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August 1, 2025

Steve Benesch
Valero West Memphis Terminal
West Memphis, AR

Steve,

The following is a summary of findings from the August 2025 (3rd quarter) quarterly vibration survey at your facility.

***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

## *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 appeared to be operating at acceptable vibration levels during this survey.

**#4 Barge Loading Pump**
Motor/Pump appeared to be operating at acceptable vibration levels 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 was not in service 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 was not in service 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 high1 x rpm vibration. Ensure couplings and alignment are good. Inspect motor base for issues. Rated as a **CLASS III** defect.

**#45 Bio-Diesel Pump South**
***Unit was not running; however, the following likely still applies:*** Motor data shows defects are present in motor bearings. Pump also has some high overall vibration amplitude. Data shows a 3 x rpm vertical vibration. This may be a coupling issue but could be base related or an issue with the pump shaft such as bent shaft, excessive clearances. Rated as a **CLASS II** defect.

***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**
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**Database: west memphis.rbm**
**Station: WEST MEMPHIS TERMINAL**

| MEASUREMENT POINT | OVERALL LEVEL | HFD / VHFD |
|---|---|---|
| #1 BARGE - #1 BARGE LOADING PUMP | (01-Aug-25) | |
| | OVERALL LEVEL | 1 - 20 KHz |
| MOH | .251 In/Sec | .861 G-s |
| MOV | .129 In/Sec | .132 G-s |
| MIH | .115 In/Sec | .669 G-s |
| MIV | .092 In/Sec | .166 G-s |
| MIA | .087 In/Sec | .228 G-s |
| #2 BARGE - #2 BARGE LOADING PUMP | (01-Aug-25) | |
| | OVERALL LEVEL | 1 - 20 KHz |
| MOH | .217 In/Sec | .577 G-s |
| MOV | .121 In/Sec | .175 G-s |
| MIH | .105 In/Sec | .465 G-s |
| MIV | .097 In/Sec | .123 G-s |
| MIA | .067 In/Sec | .130 G-s |
| #3 BARGE - #3 BARGE LOADING PUMP | (01-Aug-25) | |
| | OVERALL LEVEL | 1 - 20 KHz |
| MOH | .182 In/Sec | .276 G-s |
| MOV | .451 In/Sec | .069 G-s |
| MIH | .144 In/Sec | .237 G-s |
| MIV | .265 In/Sec | .121 G-s |

| | | | |
|---|---|---|---|
| | MIA | .052 In/Sec | .090 G-s |

#4 BARGE - #4 BARGE LOADING PUMP (01-Aug-25)

| | OVERALL LEVEL | 1 - 20 KHz |
|---|---|---|
| MOH | .336 In/Sec | .129 G-s |
| MOV | .367 In/Sec | .019 G-s |
| MIH | .113 In/Sec | .231 G-s |
| MIV | .108 In/Sec | .061 G-s |
| MIA | .131 In/Sec | .030 G-s |

#8LX PUMP - #8 LX TRUCK LOADING PUMP (01-Aug-25)

| | OVERALL LEVEL | 1 - 20 KHz |
|---|---|---|
| MOH | .057 In/Sec | .525 G-s |
| MOV | .115 In/Sec | .085 G-s |
| MIH | .043 In/Sec | .474 G-s |
| MIV | .090 In/Sec | .097 G-s |
| MIA | .045 In/Sec | .091 G-s |

#13XX PUMP - #13 XX TRUCK LOADING PUMP (01-Aug-25)

| | OVERALL LEVEL | 1 - 20 KHz |
|---|---|---|
| MOH | .054 In/Sec | .388 G-s |
| MOV | .075 In/Sec | .142 G-s |
| MIH | .038 In/Sec | .538 G-s |
| MIV | .052 In/Sec | .086 G-s |
| MIA | .038 In/Sec | .120 G-s |

#15NL PUMP - #15 NL TRUCK LOADING PUMP (01-Aug-25)

| | OVERALL LEVEL | 1 - 20 KHz |
|---|---|---|
| MOH | .051 In/Sec | .309 G-s |
| MOV | .053 In/Sec | .068 G-s |
| MIH | .043 In/Sec | .300 G-s |
| MIV | .046 In/Sec | .043 G-s |
| MIA | .043 In/Sec | .055 G-s |
| EIH | .123 In/Sec | .865 G-s |
| EIV | .161 In/Sec | .551 G-s |
| EIA | .129 In/Sec | .319 G-s |
| EOH | .127 In/Sec | .791 G-s |
| EOV | .151 In/Sec | .308 G-s |
| EOA | .113 In/Sec | .359 G-s |

#18NL PUMP - #18 NL TRUCK LOADING PUMP (01-Aug-25)

| | OVERALL LEVEL | 1 - 20 KHz |
|---|---|---|
| MOH | .072 In/Sec | .281 G-s |
| MOV | .050 In/Sec | .064 G-s |
| MIH | .043 In/Sec | .261 G-s |
| MIV | .176 In/Sec | .038 G-s |
| MIA | .084 In/Sec | .031 G-s |
| EIH | .164 In/Sec | .593 G-s |
| EIV | .239 In/Sec | .317 G-s |
| EIA | .200 In/Sec | .305 G-s |
| EOH | .077 In/Sec | .735 G-s |
| EOV | .189 In/Sec | .169 G-s |
| EOA | .152 In/Sec | .382 G-s |

#5TRCKLOAD - #5 TRUCK LOADING PUMP (01-Aug-25)

| | OVERALL LEVEL | 1 - 20 KHz |
|---|---|---|
| MOH | .134 In/Sec | .317 G-s |
| MOV | .159 In/Sec | .097 G-s |
| MIH | .141 In/Sec | .393 G-s |
| MIV | .210 In/Sec | .110 G-s |
| MIA | .157 In/Sec | .080 G-s |
| EIH | .139 In/Sec | .421 G-s |
| EIV | .188 In/Sec | .249 G-s |
| EIA | .161 In/Sec | .150 G-s |
| EOH | .141 In/Sec | .527 G-s |
| EOV | .213 In/Sec | .222 G-s |
| EOA | .212 In/Sec | .214 G-s |

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#7TRCKLOAD - #7 TRUCK LOADING PUMP          (01-Aug-25)
                                OVERALL LEVEL      1 - 20 KHz
        MOH                      .103 In/Sec        .230 G-s
        MOV                      .092 In/Sec        .055 G-s
        MIH                      .058 In/Sec        .249 G-s
        MIV                      .102 In/Sec        .039 G-s
        MIA                      .112 In/Sec        .063 G-s
        EIH                      .089 In/Sec        .394 G-s
        EIV                      .268 In/Sec        .271 G-s
        EIA                      .100 In/Sec        .283 G-s
        EOH                      .120 In/Sec        .677 G-s
        EOV                      .154 In/Sec        .233 G-s
        EOA                      .166 In/Sec        .275 G-s

#43BOIDSLP - #43 BIO-DIESEL PUMP NORTH      (01-Aug-25)
                                OVERALL LEVEL      1 - 20 KHz
        MOH                      .079 In/Sec        .292 G-s
        MOV                      .113 In/Sec        .108 G-s
        MIH                      .078 In/Sec        .384 G-s
        MIV                      .124 In/Sec        .074 G-s
        MIA                      .123 In/Sec        .092 G-s
        EIH                      .110 In/Sec        .523 G-s
        EIV                      .190 In/Sec        .165 G-s
        EIA                      .120 In/Sec        .242 G-s
        EOH                      .110 In/Sec        .431 G-s
        EOV                      .328 In/Sec        .161 G-s
        EOA                      .126 In/Sec        .235 G-s

#44BOIDSLP - #44 BIO-DIESEL PUMP MIDDLE     (01-Aug-25)
                                OVERALL LEVEL      1 - 20 KHz
        MOH                      .135 In/Sec       1.883 G-s
        MOV                      .726 In/Sec       1.138 G-s
        MIH                      .330 In/Sec       2.631 G-s
        MIV                      .378 In/Sec        .621 G-s
        MIA                      .777 In/Sec        .785 G-s
        EIH                      .200 In/Sec        .411 G-s
        EIV                      .239 In/Sec        .172 G-s
        EIA                      .200 In/Sec        .198 G-s
        EOH                      .113 In/Sec        .819 G-s
        EOV                      .277 In/Sec        .216 G-s
        EOA                      .198 In/Sec        .269 G-s

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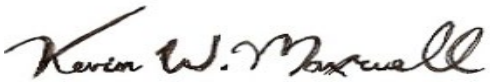
As always, it has been a pleasure to serve the Valero West Memphis Truck Terminal. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



**ISO Certified Vibration Analyst, Category III**

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