



QualiTest® Diagnostics

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November 8, 2023

Maria Adams
City of West Memphis
West Memphis, AR

Maria,

The following is a summary report from the initial vibration survey of the City Flood Pumps throughout the city of West Memphis, AR.

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.

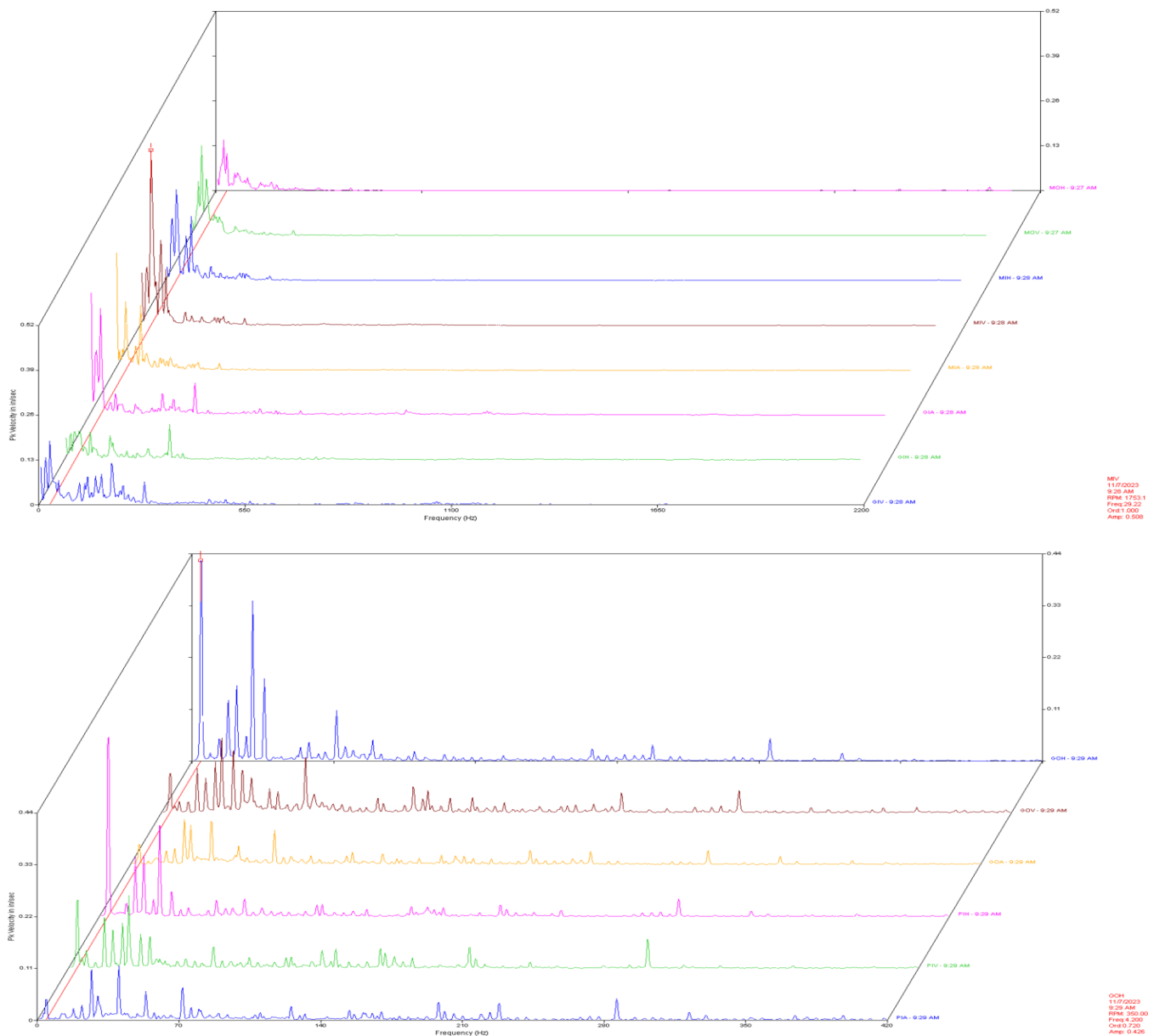
CLASS III: Defect (s) present that may cause failure in short term (less than 2 months). This should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.

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.

Defect Summary

Airport Road Pump **CLASS II**



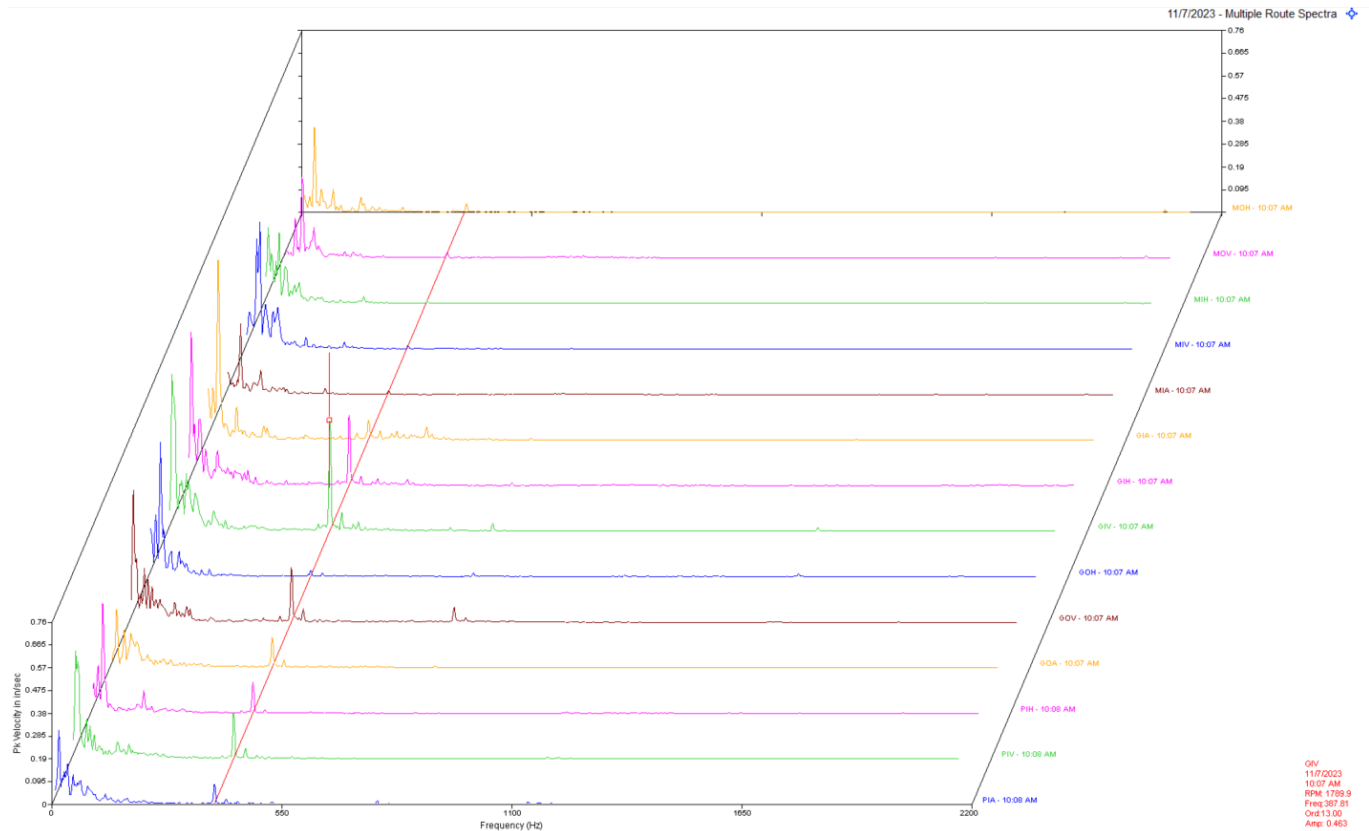
Observation:

Data above is a multipoint spectral waterfall. The first plot is the motor and input of the gearbox. Second plot is the output of gearbox and inboard pump. The first plot shows some 1 x motor rpm vibration while the second plot shows some output speed vibration with some harmonics of pump speed.

Recommendation:

For now, check sheaves for wear and misalignment and check belts for wear also. Gearbox appears to have some slight wear of the output end.

Ingram Road North Pump **CLASS II**



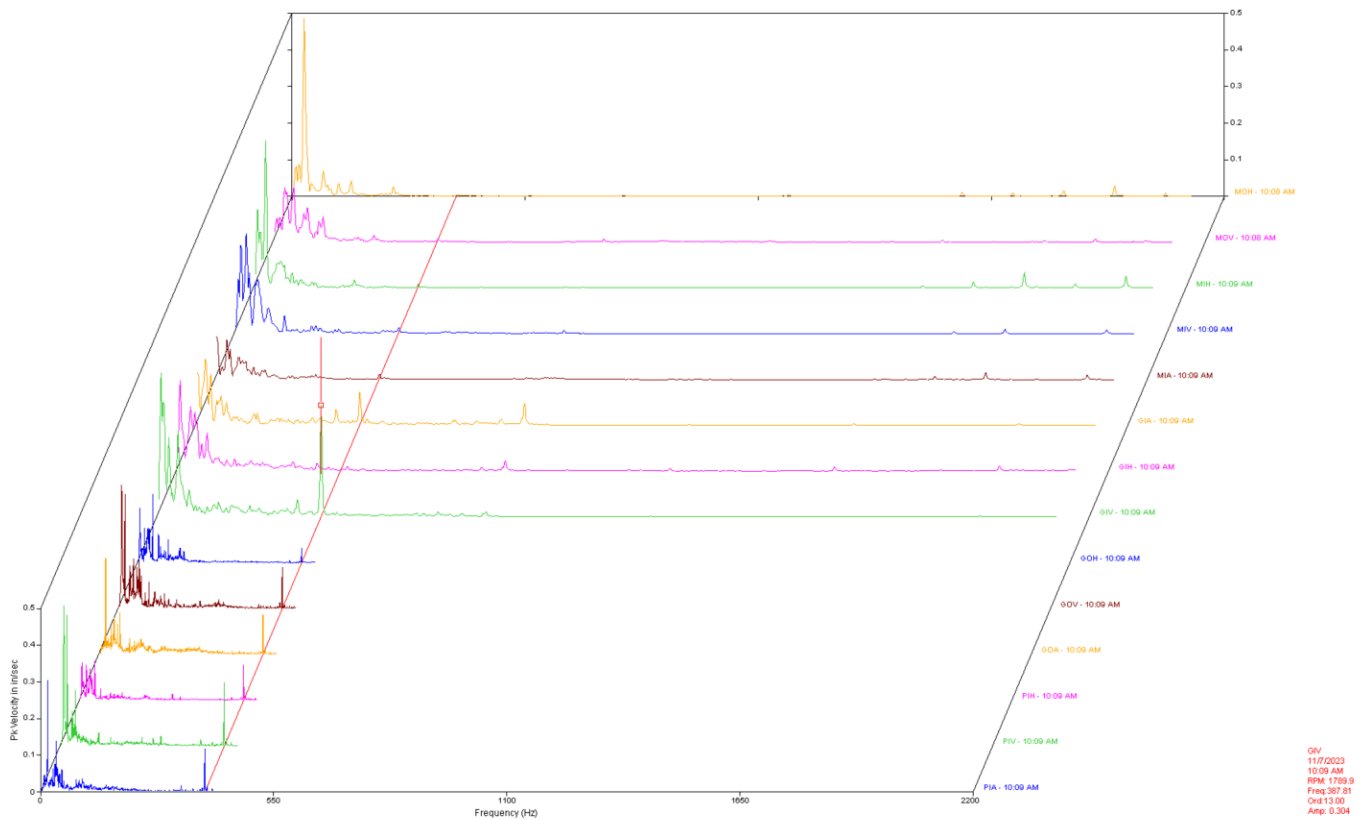
Observation:

Data above is a multi-point spectral waterfall for the motor, geardrive, and pump. Data shows a low frequency vibration that is likely pump related. There is also a peak at 13 orders which may be gear related.

Recommendation:

The pump shaft may be bent or some other shaft issue with pump may be present. Geardrive may also have some slight gear wear.

Ingram Road South Pump CLASS I



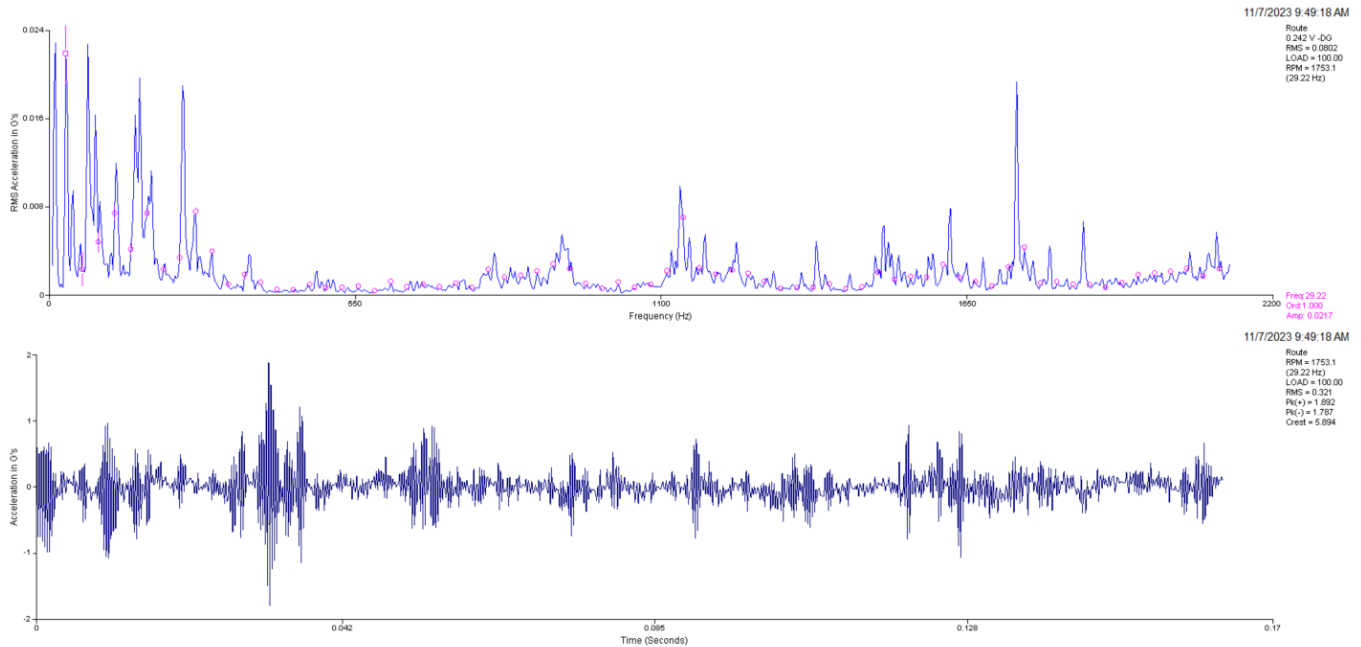
Observation:

Data above is a multi-point spectral waterfall for the motor, gear drive, and pump. Motor data shows a high 1 x motor rpm vibration. There is also a peak at 13 orders which may be gear related.

Recommendation:

For now, check sheaves for wear and misalignment and check belts for wear also. Gearbox appears to have some slight wear of the input gear.

Rice Road Pump CLASS I



Observation:

Data above is the drive end of the motor. Data shows some non-synchronous peaks and waveform data below spectrum shows some impacting.

Recommendation:

Motor bearings appear to be noisy. Data suggests bearings need to be lubricated. Ensure that Mobil Polyrex EM grease is used.

Abbreviated Last Measurement Summary

Database: CITY OF WEST MEMPHIS.rbm
Area: PUMPS
Route No. 1: PUMPS

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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PUMP-1 - AIRPORT ROAD PUMP (07-Nov-23)		
	OVERALL LEVEL	1K-20KHz
MOH	.256 In/Sec	.447 G-s
MOV	.433 In/Sec	.214 G-s
MIH	.490 In/Sec	.384 G-s
MIV	.795 In/Sec	.071 G-s
MIA	.450 In/Sec	.096 G-s
GIA	.569 In/Sec	.368 G-s
GIH	.300 In/Sec	1.034 G-s
GIV	.437 In/Sec	.388 G-s
GOH	.698 In/Sec	.937 G-s
GOV	.406 In/Sec	.748 G-s
GOA	.251 In/Sec	1.297 G-s
PIH	.545 In/Sec	.623 G-s
PIV	.361 In/Sec	.388 G-s
PIA	.269 In/Sec	.359 G-s
PUMP-2 - INGRAM ROAD NORTH PUMP (07-Nov-23)		
	OVERALL LEVEL	1K-20KHz
MOH	.442 In/Sec	.299 G-s
MOV	.480 In/Sec	.248 G-s
MIH	.647 In/Sec	.867 G-s
MIV	.896 In/Sec	.147 G-s
MIA	.389 In/Sec	.129 G-s
GIA	.977 In/Sec	.550 G-s
GIH	.997 In/Sec	2.866 G-s
GIV	1.251 In/Sec	.776 G-s
GOH	.783 In/Sec	.832 G-s
GOV	.867 In/Sec	.163 G-s
GOA	.494 In/Sec	.207 G-s
PIH	.621 In/Sec	.456 G-s
PIV	.808 In/Sec	.267 G-s
PIA	.553 In/Sec	.373 G-s
PUMP-3 - INGRAM ROAD SOUTH PUMP (07-Nov-23)		
	OVERALL LEVEL	1K-20KHz
MOH	.588 In/Sec	1.671 G-s
MOV	.394 In/Sec	.583 G-s
MIH	.564 In/Sec	2.563 G-s
MIV	.587 In/Sec	.852 G-s
MIA	.260 In/Sec	.726 G-s
GIA	.431 In/Sec	.510 G-s
GIH	.523 In/Sec	2.587 G-s
GIV	.799 In/Sec	.433 G-s
GOH	.439 In/Sec	.899 G-s
GOV	.810 In/Sec	.187 G-s
GOA	.482 In/Sec	.206 G-s
PIH	.341 In/Sec	.599 G-s
PIV	.804 In/Sec	.189 G-s
PIA	.481 In/Sec	.199 G-s
PUMP-4 - RICE ROAD PUMP (07-Nov-23)		
	OVERALL LEVEL	1K-20KHz
MOH	.217 In/Sec	.595 G-s
MOV	.319 In/Sec	.120 G-s
MIH	.242 In/Sec	1.675 G-s
MIV	.201 In/Sec	.343 G-s
MIA	.264 In/Sec	.236 G-s
PIH	.200 In/Sec	.156 G-s

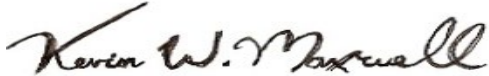
PIV	.152 In/Sec	.057 G-s
PIA	.129 In/Sec	.062 G-s

Clarification Of Vibration Units:

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

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

Sincerely,



ISO Certified Vibration Analyst, Category III



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