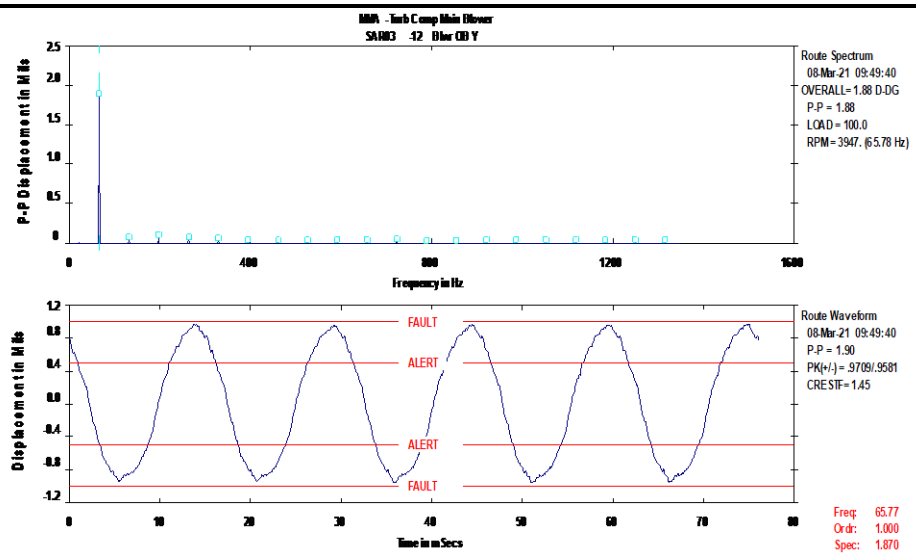
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	Lucite	**Survey Date**	3-8-21
Location	Memphis, TN	**Report Date**	3-10-21
Machine	SAR 03 turbine compressor main blower	**QMS No.**	144639
Component		**Analyst**	DWS

Defect Rating for this machine	**Class II**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
Class II: Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	**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.***

Vibration Data



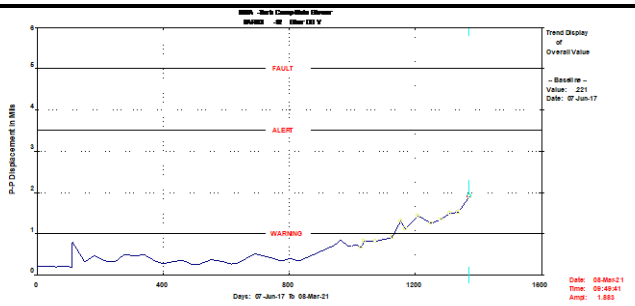
Analysis

Point 12 proximity probe vibration continues to slowly climb in amplitude.

Discussion / Repair recommendations

Proximity probe 12 data shows a dominant shaft speed vibration in the data. The vibration amplitude continues to slowly increase in amplitude. A motion amplification survey might be helpful in determining the root cause of the vibration. **Rated a Class II Defect.**

Trend Data



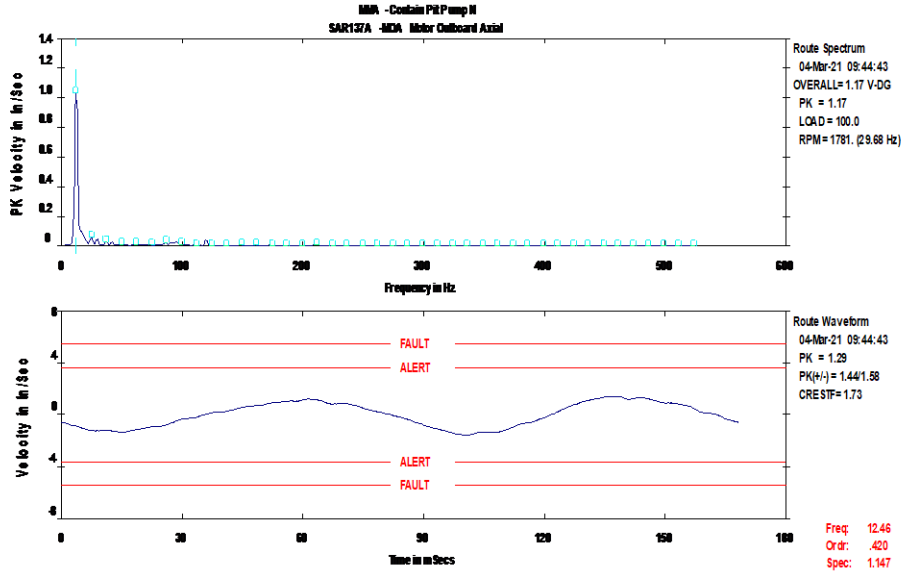
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	Lucite	**Survey Date**	3-8-21
Location	Memphis, TN	**Report Date**	3-10-21
Machine	SAR 137A Containment Pit Pump North	**QMS No.**	144639
Component	Motor	**Analyst**	DWS

Defect Rating for this machine	**Class III**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
Class II: Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	**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.***

Vibration Data

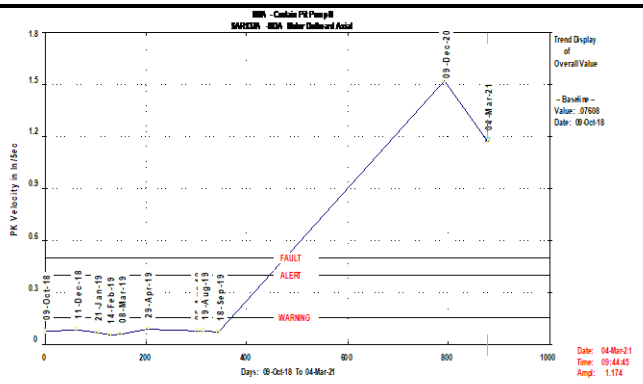


Analysis

Discussion / Repair recommendations

This unit runs infrequently; however, it has an extremely large resonant sub-synchronous vibration over 1.1"/second velocity peak overall at 12.46 Hz. Inspect the unit for defects in structure or fasteners soon. **Rated a Class III Defect.**

Trend Data



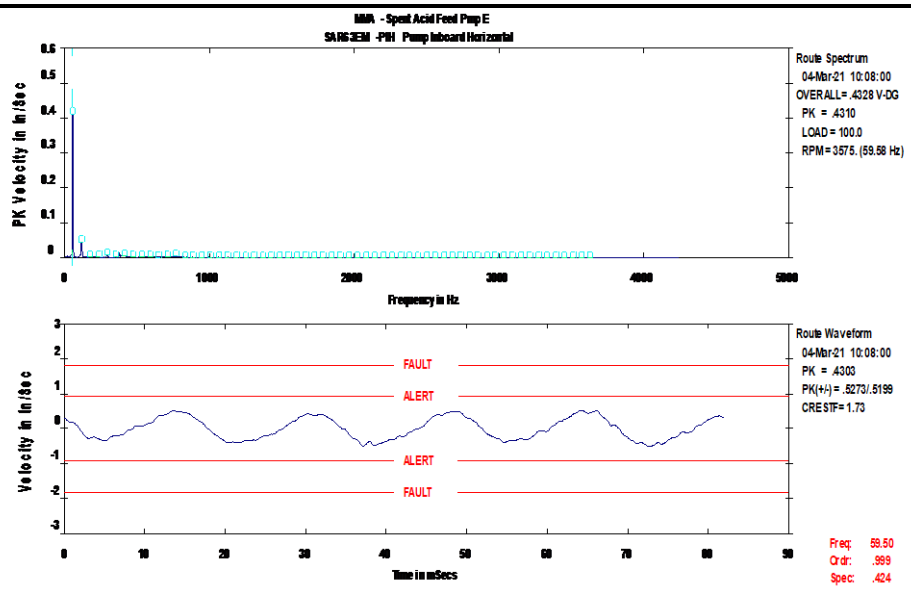
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	Lucite	**Survey Date**	3-8-21
Location	Memphis, TN	**Report Date**	3-10-21
Machine	SAR 63 EM Spent Acid Feed Pump E	**QMS No.**	144639
Component	Pump/coupling	**Analyst**	DWS

Defect Rating for this machine	**Class III**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
Class II: Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	**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.***

Vibration Data



Analysis

Dominant shaft speed vibration in the pump inboard horizontal.

Discussion / Repair recommendations

The inboard pump 1x RPM vibration has jumped up considerably since the last survey. Inspect the coupling, unit fasteners and the alignment at the next opportunity. **Rated a Class III Defect due to the large increase in amplitude.**

Trend Data