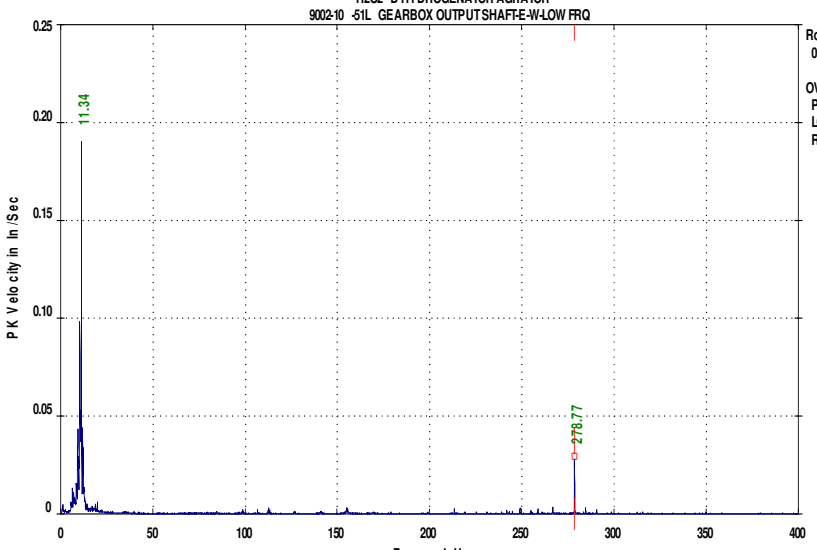
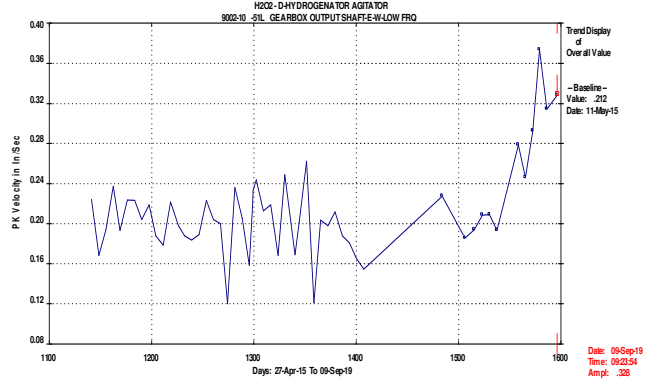




Client	ARKEMA	Survey Date	9-9-19
Location	Memphis, TN	Report Date	9-9-19
Machine	D- Hydrogenator Agitator	QMS No.	140595
Component	Gearbox	Analyst	DWS

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
<p>H202- D-HYDROGENATOR AGITATOR 9002-10 -51L GEARBOX OUTPUT SHAFT-LOW FREQ</p>  <p>Route Spectrum 09-Sep-19 09:23:54</p> <p>OVERALL= .3280 V-DG PK = .3269 LOAD = 100.0 RPM = 1185. (19.75 Hz)</p> <p>Freq: 278.75 Ord: 14.11 Spec: .02796</p>	<p>Multiple close vibrations are still producing a beat vibration in the gearbox.</p>

Discussion / Repair recommendations	Data
<p>Data sets for the gearbox bearings show overall vibrations are still near 0.38"/sec velocity peak. Shaft speed fundamental is below the accelerometer high pass filter. Vibrations of interest are around 11 and 278 HZ. Modulation around the 11 HZ peak is causing a beat vibration. Gearbox and structure could be resonant. An internal inspection and oil analysis should be considered. Also, check the unit fasteners for tightness. Rated a Class II Defect. Please provide detailed information on the gearbox for further analysis.</p>	 <p>Date: 09-Sep-19 Time: 09:23:54 Ampl: .328</p>