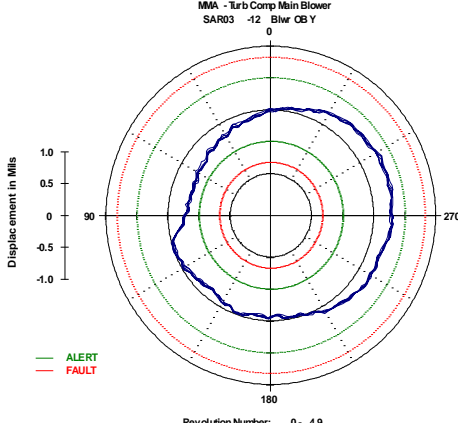
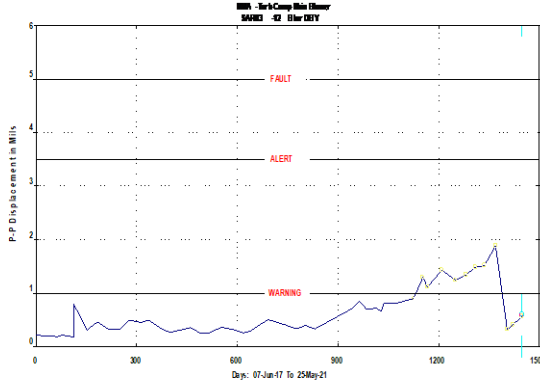




Client	Mitsubishi Chemicals	Survey Date	5-25-2021
Location	Memphis, TN	Report Date	6-11-2021
Machine	SAR 03 Turbine Compressor Main Blower	QMS No.	145447
Component	Point 12 data (Outboard Y)	Analyst	DWS

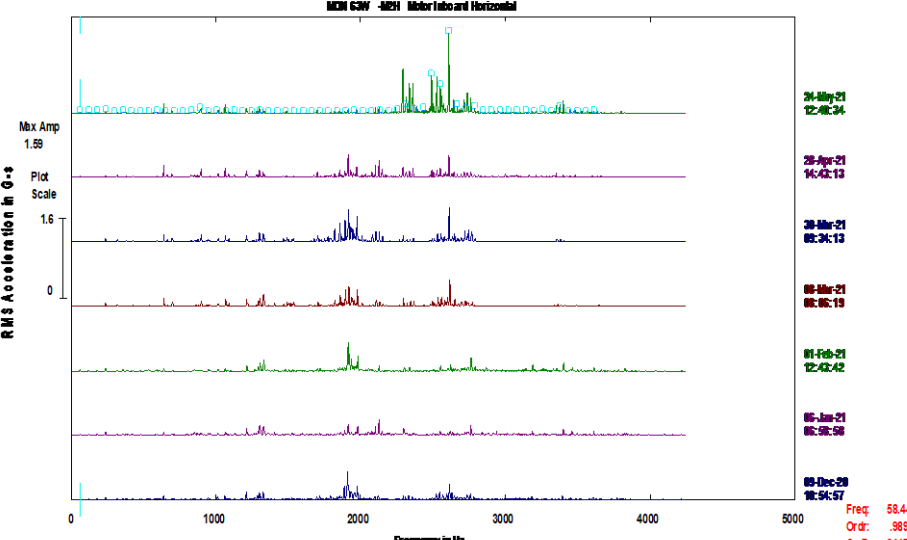
Defect Rating for this machine	NR
Defect Rating System	
<b>Class I:</b> Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	<b>Class III:</b> Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
<b>Class II:</b> Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	<b>Class IV:</b> Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. <b>Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs.</b>

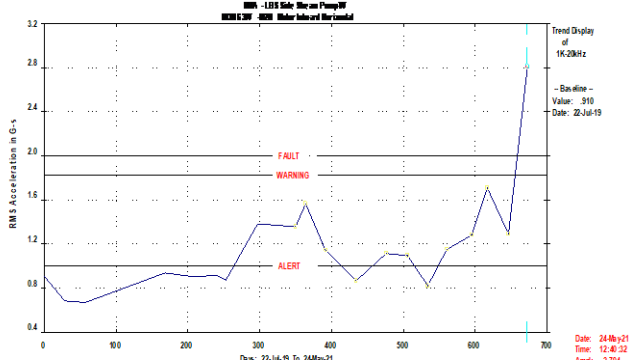
Vibration Data	Analysis
<p>MMA - Turb Comp Main Blower SAR03 -12 Blwr OBY</p>  <p>Displacement in Mils</p> <p>— ALERT — FAULT</p> <p>Revolution Number: .0 - 4.9</p> <p>Route Waveform 25-May21 09:26:55</p> <p>P-P = .5861 LOAD = 100.0 RPM = 4886. RPS = 81.43</p> <p>PK(+) = .3568 PK(-) = .3815 CRESTF = 1.85</p>	<p>Point 12 data. Slight increase.</p>
Discussion / Repair recommendations	Trend Data
<p>Vibrations still appear to be acceptable. <b>Non-rated.</b></p>	 <p>P-P Displacement in Mils</p> <p>Days: 07-Jun-17 To 25-May-21</p> <p>Trend Display of Overall Value</p> <p>— Baseline — Value: .291 Date: 07-Jun-17</p> <p>WARNING ALERT FAULT</p> <p>Date: 25-May-21 Time: 10:28:57 Ampl: .578</p>



Client	Mitsubishi Chemicals	Survey Date	5-24-2021
Location	Memphis, TN	Report Date	6-11-2021
Machine	MON 63W LBS Side Stream Pump West	QMS No.	145447
Component	Motor	Analyst	DWS

Defect Rating for this machine	<b>CLASS II</b>
Defect Rating System	
<b>Class I:</b> Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	<b>Class III:</b> 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.
<b>Class II:</b> Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	<b>Class IV:</b> Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. <b>Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs.</b>

Vibration Data	Analysis
<p>MON - LBS Side Stream Pump W MON 63W - 4000 Motor Inboard Horizontal</p>  <p>Max Amp 1.5g Plot Scale 1.6 RMS Acceleration in G</p> <p>Frequency in Hz</p> <p>24-May-21 12:42:34 20-Apr-21 16:42:13 20-Mar-21 08:24:13 09-Mar-21 08:06:19 01-Feb-21 12:42:42 05-Jan-21 08:38:58 09-Dec-20 10:34:57</p> <p>Freq: 58.44 Ord: .989 Sp 7: .01471</p>	<p>Increase in vibration peaks in the motor bearing data.</p>

Discussion / Repair recommendations	Trend Data
<p>Vibration data shows an increase in synchronous and non-synchronous peaks in the spectrum for the motor bearings. We suspect bearing defects are present. Ensure adequate bearing lubrication if applicable. Prepare to change out the motor in the future. <b>Rated a Class II Defect.</b></p>	 <p>Trend Display of 1K/20KHz Baseline Value: .910 Date: 22-Jul-19</p> <p>FAULT WARNING ALERT</p> <p>RMS Acceleration in G</p> <p>Days: 22-Jul-19 To 24-May-21</p> <p>Date: 24-May-21 Time: 12:48:22 Ampl: 2.754</p>