LCM
LUCIDE CONDITION MONITORING LTD

SPECTRAL VIBRATION SURVEY

NEW ZEALAND

OPPORTUNITY STREET

2023-03-19

Survey Intention:

It was the intent of this survey to inspect the operating rotating equipment in the below listed areas with the VB7 data logger to identify any potential problems. The areas with high readings caused by wear or mass imbalance, these anomalies will be digitally recorded and presented in this report.

The areas inspected were:

- Main Engine Room
- Water pumps
- Vacuum pumps

Inspection details and Chronology:

This inspection was a part of our regular maintenance and is performed in these areas on a three monthly basis.

The inspection was carried out on the 2023-03-19 with a completion of the report on the 2023-03-20

The inspection was performed by David Lambert – Lucide Condition Monitoring – with an accompanying refrigeration engineer.

Results:

The results have been listed in the order of severity according to their amplitude. The following repair priority table is a guideline only. Responsibility for any repair rests with the area supervisor or maintenance manager.

Danger	Asset Not OK is cause for immediate concern. Anomaly perceived to be high risk to availability or safety
Alert	Asset has a higher level anomaly that needs addressing and unit should be repaired ASAP. Anomaly Elevated.
Warning	Asset has an anomaly that needs addressing but the unit can continue to run. Anomaly moderate.
HF	Anomaly requires regular greasing to obtain better bearing life
OK	Asset is OK
MNO	Machine Not Operational During Survey

Exception Report

Site: Site - Site

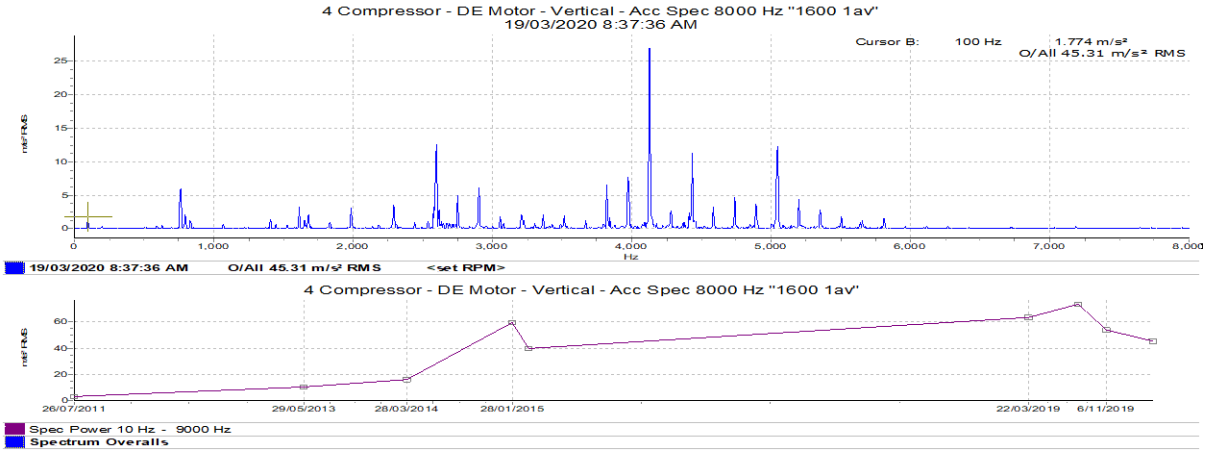
Folder: Sample Engine Room

Issued: 19/03/2023 1:57:10 PM

Machine: **NH3 Compressor**	Danger

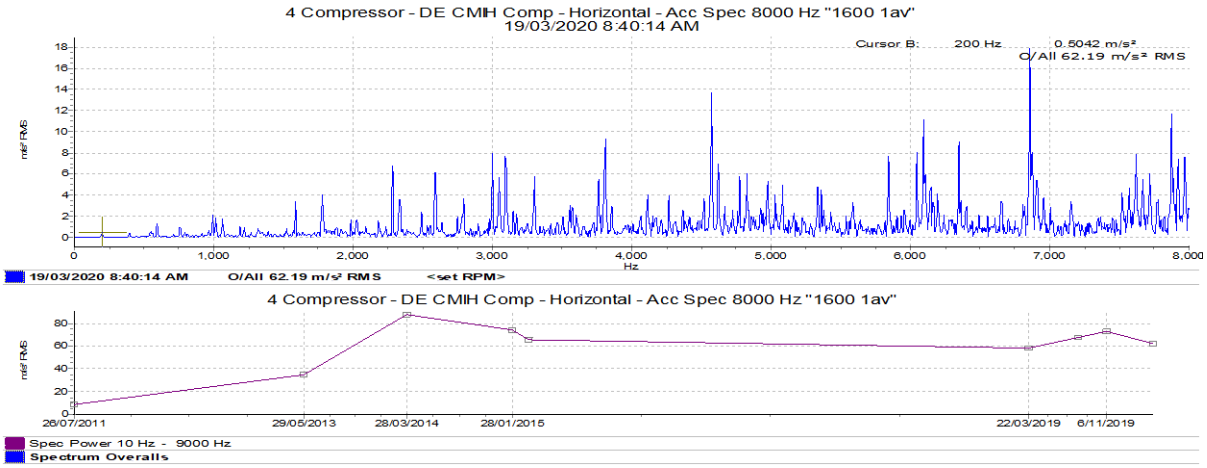
NH3 Compressor - DE Motor - Vertical - Acc Spec 8000 Hz "1600 1av"

Power 10 Hz - 9000 Hz Danger by 100.7% (Danger). The motor drive bearing has a third stage bearing wear alarm. The historical trend shows no increase. This requires a replacement bearing as soon as possible; I will continue to monitor this.



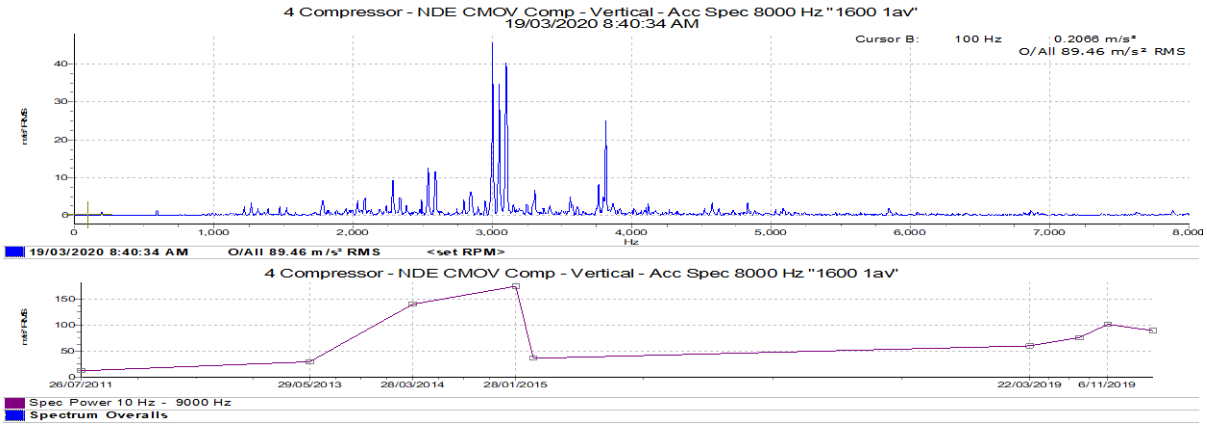
NH3 Compressor - DE CMIH Comp - Horizontal - Acc Spec 8000 Hz "1600 1av"

Power 10 Hz - 9000 Hz Danger by 138.2% (Danger). The compressor input bearing has a critical stage bearing wear alarm. The historical trend shows no increase. This requires a replacement bearing as soon as possible; I will continue to monitor this.



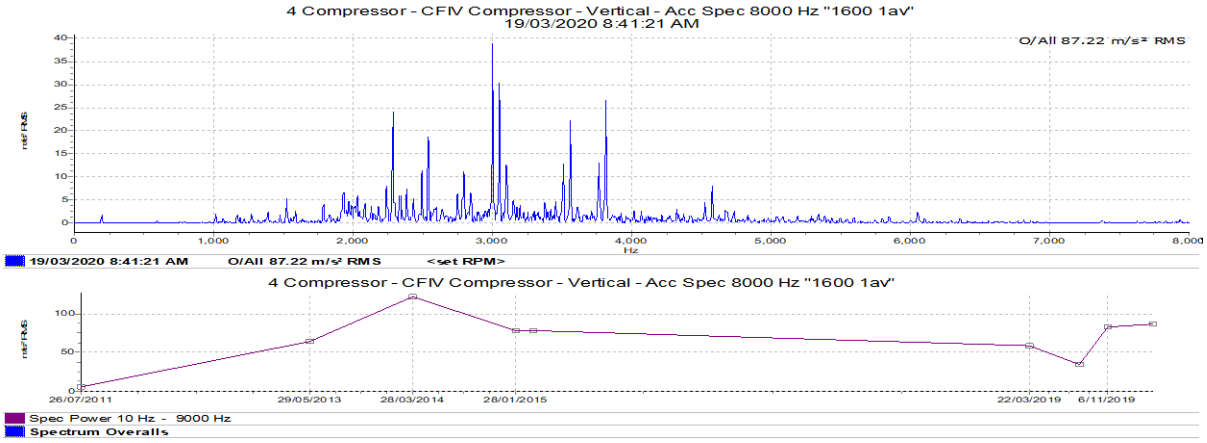
NH3 Compressor - NDE CMOV Comp - Vertical - Acc Spec 8000 Hz "1600 1av"

Power 10 Hz - 9000 Hz Danger by 198.8% (Danger). The compressor male output bearing has an acute stage bearing wear alarm. The historical trend shows no increase. This requires a replacement bearing as soon as possible; I will continue to monitor this.



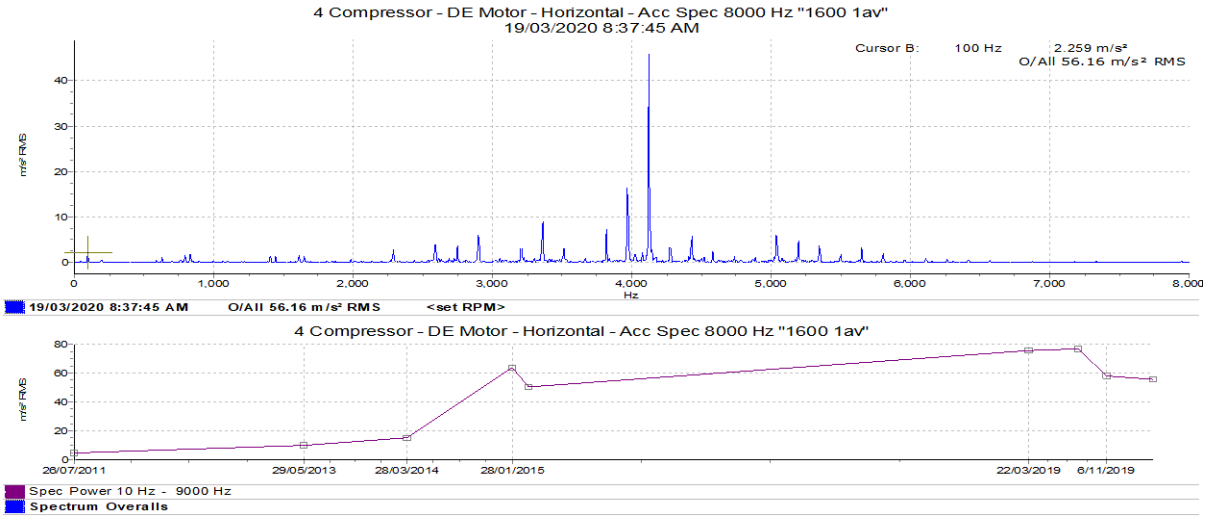
NH3 Compressor - CFIV Compressor - Vertical - Acc Spec 8000 Hz "1600 1av"

Power 10 Hz - 9000 Hz Danger by 193.8% (Danger). The compressor female input bearing has an acute stage bearing wear alarm. The historical trend shows no increase. This requires a replacement bearing as soon as possible; I will continue to monitor this.



NH3 Compressor - DE Motor - Horizontal - Acc Spec 8000 Hz "1600 1av"

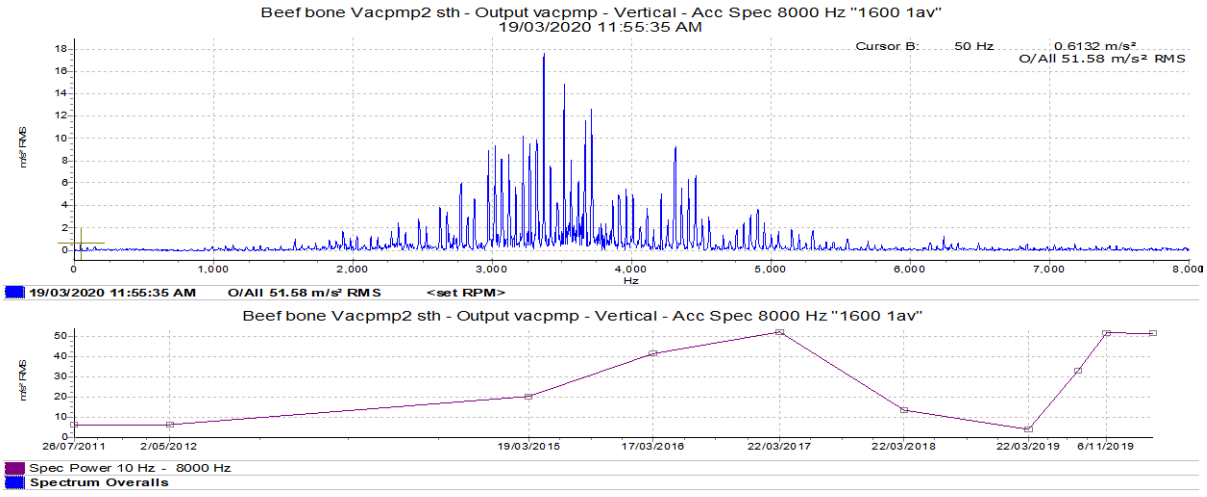
Power 10 Hz - 9000 Hz Danger by 124.8% (Danger). The motor drive bearing has a critical stage bearing wear alarm. The historical trend shows no increase. This requires a replacement bearing as soon as possible; I will continue to monitor this.



Machine: **Vacuum pump #2**	Danger

Vacuum pump #2 sth - Output vacpmp - Vertical - Acc Spec 8000 Hz "1600 1av"

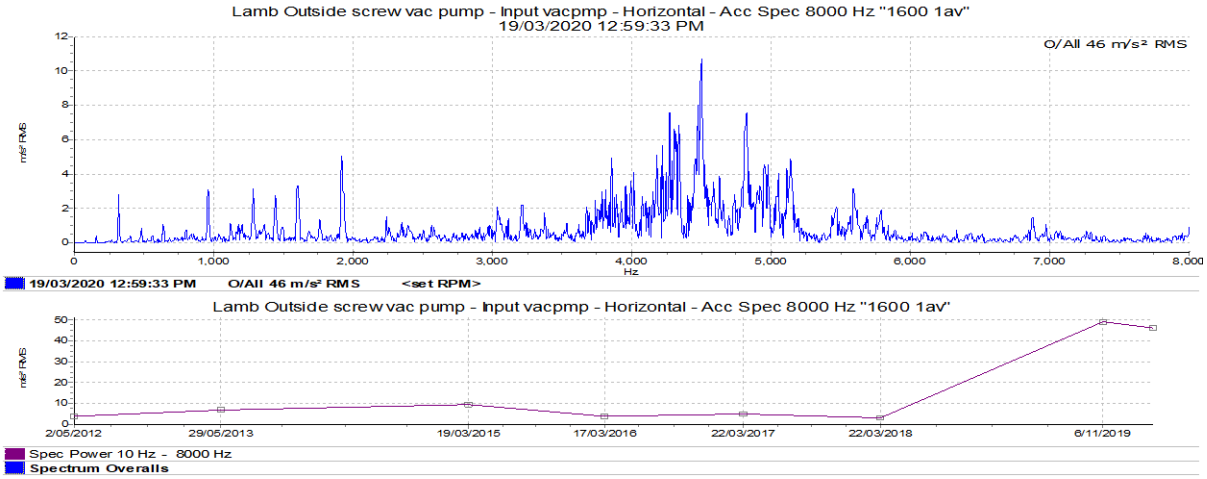
Power 10 Hz - 8000 Hz Danger by 114.6% (Danger). The vac. pump output bearing has a critical stage bearing wear alarm. The historical trend shows no increase. This requires a replacement bearing as soon as possible; I will continue to monitor this.



Machine: **Screw vacuum pump**	Danger

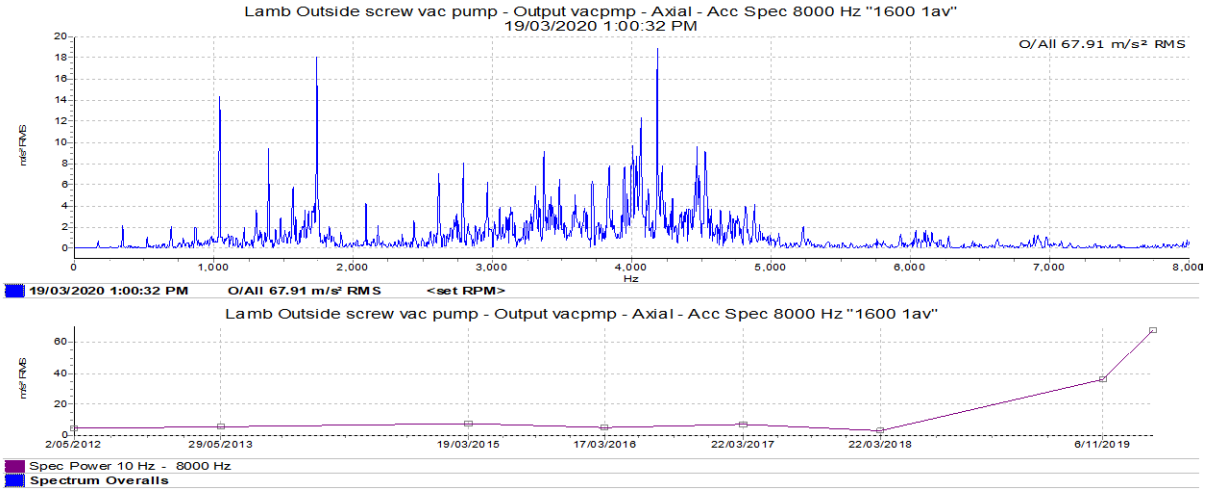
Screw vac pump - Input vacpmp - Horizontal - Acc Spec 8000 Hz "1600 1av"

Power 10 Hz - 8000 Hz Danger by 102.2% (Danger). The screw input bearing has a second stage bearing wear alarm. The historical trend shows no increase. This requires a replacement bearing when possible; I will continue to monitor this.



Screw vac pump - Output vacpmp - Axial - Acc Spec 8000 Hz "1600 1av"

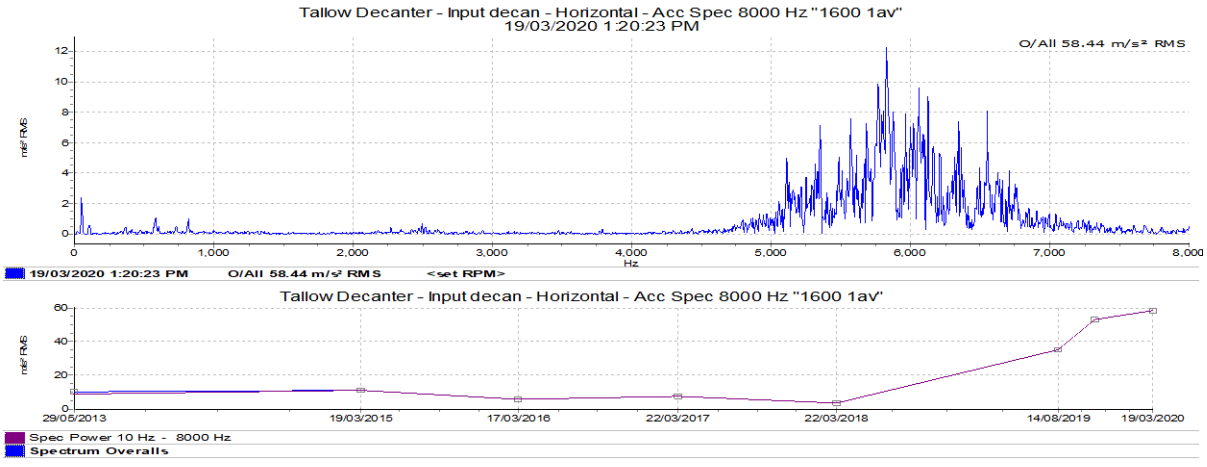
Power 10 Hz - 8000 Hz Danger by 150.9% (Danger). The screw output bearing has a critical stage bearing wear alarm. The historical trend shows a rapid increase. This requires a replacement bearing as soon as possible; I will continue to monitor this.



Machine: **Rendering Decanter**	Danger

Tallow Decanter - Input decan - Horizontal - Acc Spec 8000 Hz "1600 1av"

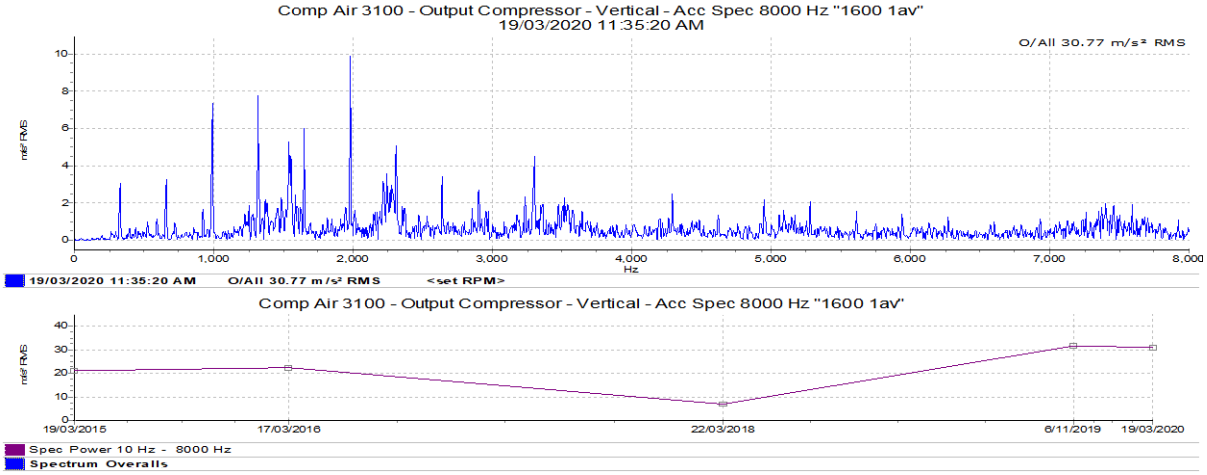
Power 10 Hz - 8000 Hz Danger by 129.9% (Danger) The decanter input bearing has a critical stage bearing wear alarm. The historical trend shows a rapid increase. This requires a replacement bearing as soon as possible; I will continue to monitor this.



Machine: **Air Compressor 3100**	Alert

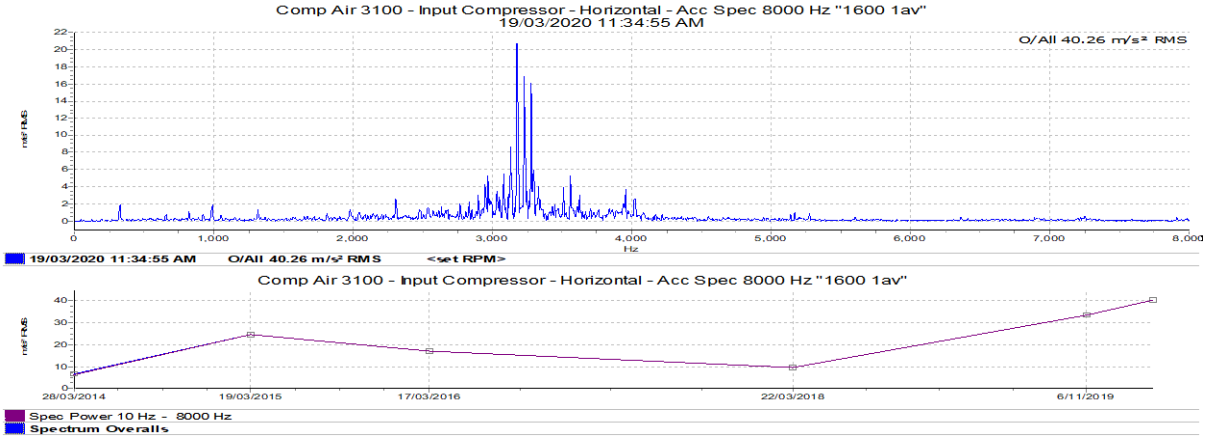
Comp Air 3100 - Output Compressor - Vertical - Acc Spec 8000 Hz "1600 1av"

Power 10 Hz - 8000 Hz Alert by 102.6% (Alert). The compressor output bearing has a second stage bearing wear alarm. The historical trend shows no increase. This requires lubrication and further attention; I will continue to monitor this.



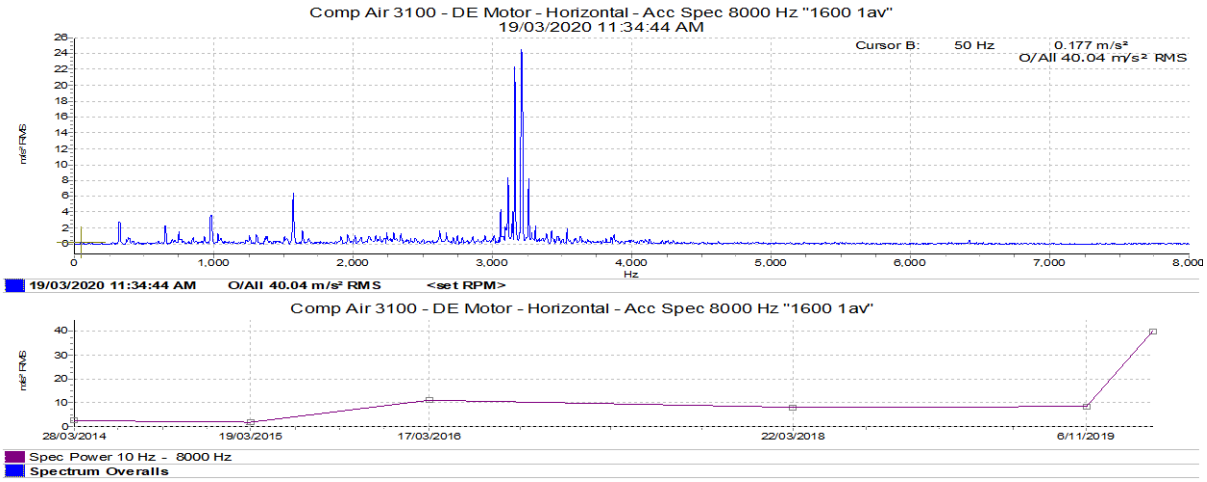
Comp Air 3100 - Input Compressor - Horizontal - Acc Spec 8000 Hz "1600 1av"

Power 10 Hz - 8000 Hz Alert by 134.2% (Alert). The compressor input bearing has a second stage bearing wear alarm. The historical trend shows a rapid increase. This requires a replacement bearing when possible; I will continue to monitor this.



Air Compressor 3100 - DE Motor - Horizontal - Acc Spec 8000 Hz "1600 1av"

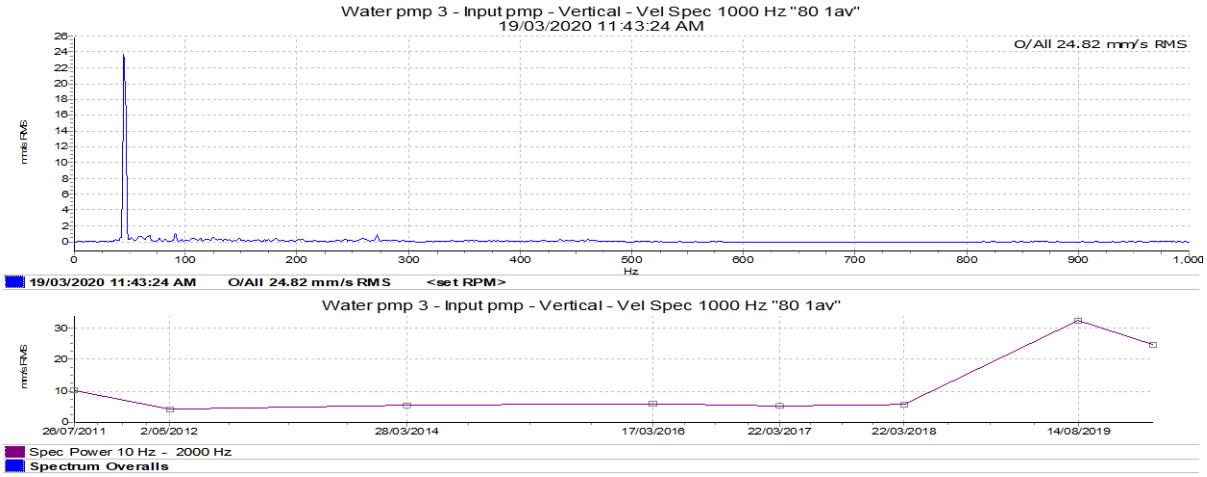
Power 10 Hz - 8000 Hz Alert by 133.5% (Alert). The motor drive end bearing has a second stage bearing wear alarm. The historical trend shows a rapid increase. This requires a replacement bearing when possible; I will continue to monitor this.



Machine: **Water pump #3**	Alert

Water pmp 3 - Input pmp - Vertical - Vel Spec 1000 Hz "80 1av"

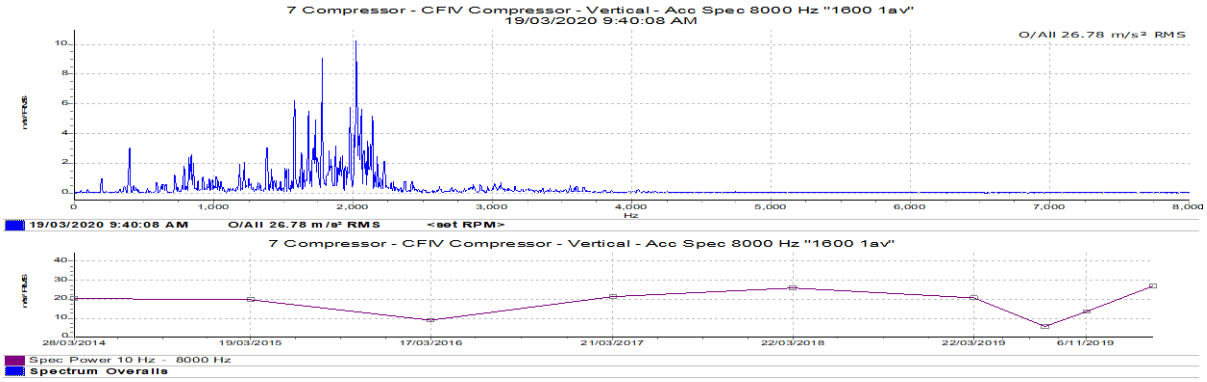
Power 10 Hz - 2000 Hz Alert by 124.1% (Alert).The pump has a second stage coupling alignment alarm, this requires realigning as soon as possible. Check coupling condition.



Machine: **NH3 Compressor #7**	Warning

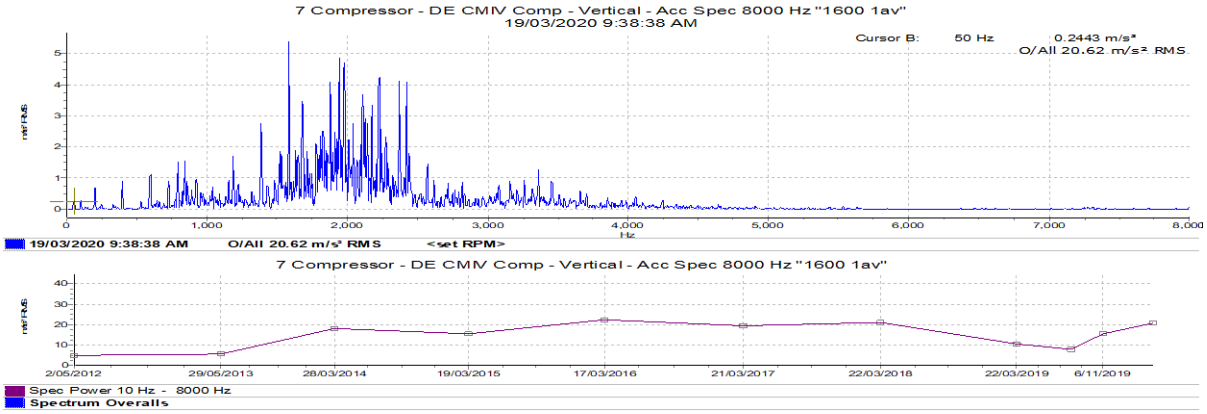
7 Compressor - CFIV Compressor - Vertical - Acc Spec 8000 Hz "1600 1av"

Power 10 Hz - 8000 Hz Warning by 133.9% (Warning). The compressor female input bearing has a first stage wear alarm. The 50hz defects are electrical discharge. The historical trend shows an increase in amplitude.



7 Compressor - DE CMIV Comp - Vertical - Acc Spec 8000 Hz "1600 1av"

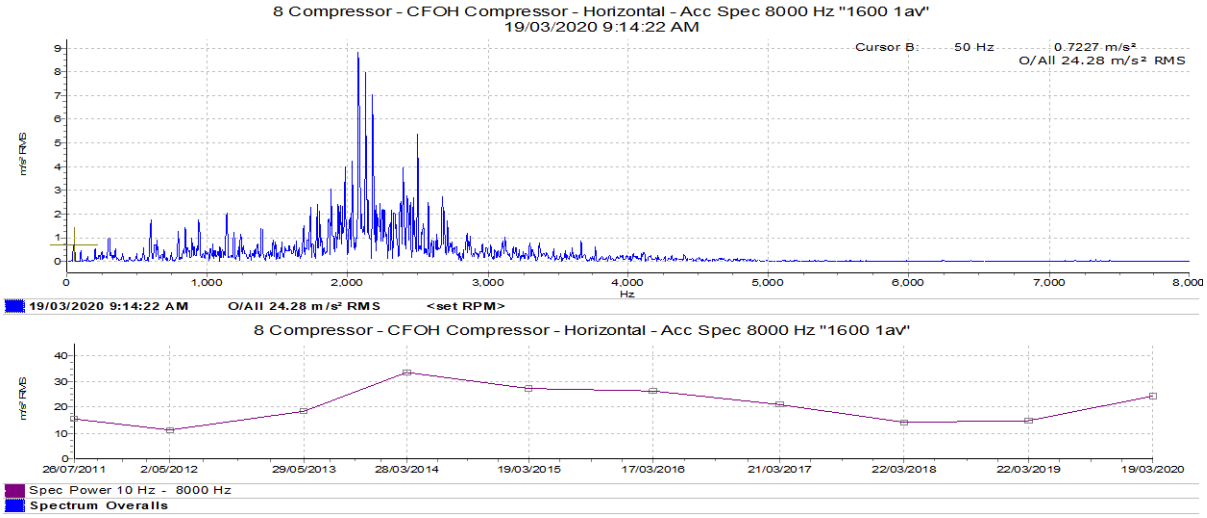
Power 10 Hz - 8000 Hz Warning by 103.1% (Warning). The compressor male input bearing has a first stage wear alarm. The 50hz defects are electrical discharge. The historical trend shows an increase in amplitude.



Machine: **NH3 Compressor #8**	Warning

8 Compressor - CFOH Compressor - Horizontal - Acc Spec 8000 Hz "1600 1av"

Power 10 Hz - 8000 Hz Warning by 121.4% (Warning). The compressor female output bearing has a first stage wear alarm. The 50hz defects are electrical discharge. The historical trend shows an increase in amplitude.



Machine: **10 Comp oilpump**	OK

Machine: **Boiler FD fan**	OK

Machine: **Boiler ID fan**	OK

Machine: **Ctower pmp1**	OK

Machine: **Ctower pmp2**	OK

Machine: **Ctower pmp3**	OK

Disclaimer:

The measurements taken during this routine inspection are only an indication of the vibration characteristics at the time of inspection and no responsibility for changes in the mechanical loading after the visit are implied.

Any removed Bearings should be retained for analysis by LCM at the next visit.