



CONDITION MONITORING & THE IMPORTANCE OF LUBRICATION

Working to achieve a more reliable and predictable plant operation through proactive condition monitoring and precision maintenance practices

THE PROBLEM

The asset in question was a critical pump supplying water to the facility’s sprinkler system. In the event of a fire, this pump ensures a reliable supply of water to protect both personnel and property.

As a safety-critical component, the pump must remain in optimal condition to perform without failure during emergencies. Regular monitoring and maintenance are therefore essential.



OUR APPROACH

AVT Reliability has delivered monthly condition monitoring services at MSD Dunboyne Biologics since 2019. As part of a comprehensive program, vibration data is collected on critical assets and logged within the Machine Sentry® database to identify developing faults before they lead to failure.

Each asset is configured in the Machine Sentry® system with dedicated vibration points and an associated visual inspection checklist. This ensures that engineers perform both data-driven and physical assessments, listening for unusual noise, inspecting for leaks or damage, and noting any signs of wear.

Beyond vibration monitoring, AVT also supports the site with thermographic electrical inspections, ultrasound leak detection, and steam trap surveys, providing a complete, multi-technology view of asset condition.

OUR FINDINGS

During a routine condition monitoring visit in April 2025, an AVT Reliability® Engineer observed a marked increase in acceleration amplitudes at the pump’s non-drive-end (NDE) bearing.

Spectral and waveform analysis revealed a high level of randomly generated noise, with elevated energy signals in both the acceleration spectrum and time waveform, characteristic of insufficient lubrication in the bearings.

The findings were communicated immediately to the site maintenance team, and an action note was raised. A work order was scheduled to inspect and lubricate the pump.

THE SOLUTION

An action was raised to inspect and lubricate the pump bearings. Following lubrication, AVT recommended implementing regular monthly greasing intervals to prevent future bearing deterioration.

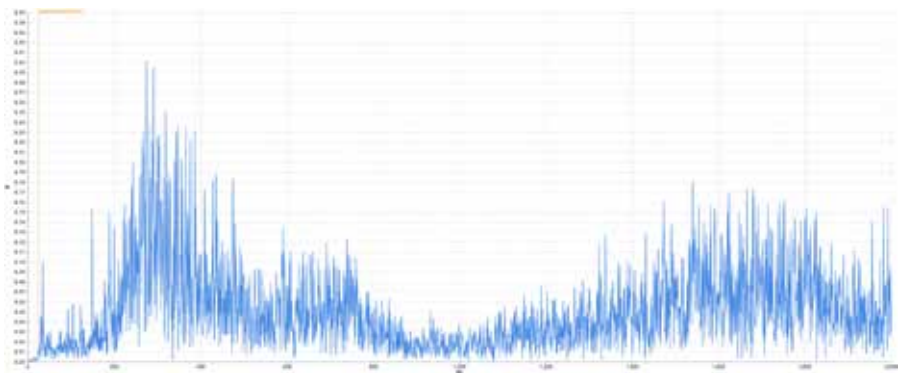
Ongoing condition monitoring remains crucial, as faults can progress at varying rates. Routine vibration analysis allows changes to be tracked accurately over time, enabling maintenance teams to respond proactively before faults escalate or secondary damage occurs.

FOLLOW UP

On the following monthly visit, AVT engineers confirmed that the pump had been correctly lubricated. Vibration readings returned to acceptable levels, and there were no signs of ongoing bearing distress.

Had the issue gone unnoticed, the bearings could have seized, resulting in pump failure. This would not only have caused potential damage to surrounding components but may also have compromised the site’s fire protection system, creating both safety risks and costly unplanned downtime.

Taken	Running	Velocity Overall (FFT) 10-1000	Overall Acceleration (Signal)	Peak Acceleration (Signal)
		mm/s rms	g rms	g
17/6/2025, 11:05:00	▶	5.724	1.205	5.181
10/6/2025, 11:10:00	▶	5.233	1.12	4.619
6/6/2025, 11:25:00	▶	5.269	1.176	4.916
29/5/2025, 09:50:00	▶	5.07	1.175	4.445
24/5/2025, 15:40:00	▶	7.019	2.251	9.967
20/5/2025, 09:55:00	▶	8.87	2.308	11.553
13/5/2025, 10:05:00	▶	9.014	2.28	12.175
29/4/2025, 08:05:00	▶	8.898	2.451	10.549
22/4/2025, 09:00:00	▶	9.586	2.238	15.335
15/4/2025, 09:20:00	▶	11.501	2.332	11.126



SERVICE MATTERS

“It’s often the simplest action, like regular greasing, that make the biggest difference to reliability. This case shows how early detection and a minor intervention can prevent major failures.”

— AVT Reliability® Engineer

CONTACT

If your plant is facing similar issues, reach out to AVT Reliability for expert support in condition monitoring, pipework vibration and lubrication management.

We’re here to keep your operations running smoothly.

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