

# Machine Health Report

Machine Health Snapshot, 14-day observation

SAMPLE DOCUMENT. SIMULATED VALUES.

Report RB-SAMPLE-0001  
Prepared for: Example Manufacturing Pte Ltd (fictional)  
Site: Illustrative plant, Singapore  
Prepared by: Robometric

## 1. EQUIPMENT SUMMARY AND MEASUREMENT PERIOD

### MACHINE

Cooling-water pump CWP-2, centrifugal, direct coupled to a 15 kW motor

### DUTY

Continuous. Two operating states observed: normal flow (day shift) and reduced flow (night)

### SENSING POINTS

Two vibration points, motor drive end and pump drive end, and one sound point near the pump casing. Positions photographed and recorded; no sensor moved during the period

### MEASUREMENT PERIOD

14 days. Days 1 to 7 learning the machine's normal pattern; days 8 to 14 monitoring against it

## 2. NORMAL VERSUS UNUSUAL BEHAVIOUR

### LEARNED NORMAL

Pump drive end 1.2 to 1.6 mm/s RMS during normal flow, 0.9 to 1.2 mm/s RMS during reduced flow. Motor drive end steady at 0.8 to 1.1 mm/s RMS in both states. Sound signature stable across both states. Levels are in the unit used on the plant contractor's severity charts, so the team can place them against the limits it already applies

### UNUSUAL BEHAVIOUR

From day 9 a rising trend at the pump drive end, reaching 2.3 mm/s RMS on day 12 during normal flow. Amber notice on day 11 when the level left the learned pattern; the plant's own alarm level was not reached at any point. From day 12 a change in the higher-frequency sound content near the pump casing. Motor drive end unchanged

## 3. OBSERVATIONS AND OPERATING CONDITIONS

- Run log shows no change in product, flow set point or duty cycle during the period. The night-time reduced-flow state recurred as usual.
- One planned stop on day 9 (filter change, 40 minutes). Levels on restart matched the levels before the stop.

- Pump bay conditions, from the plant's own records, stayed within their usual range. No coincident changes in nearby equipment were recorded.
- The next scheduled route reading for this pump was 19 days after the amber notice.
- Three amber notices in total, all on the pump drive end. All three were labelled by the maintenance team on the same day.

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#### 4. MAINTENANCE REVIEW

| INSPECTION, DAY 12                                                                                                                                                       | ACTION TAKEN                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Technician reported increased noise at the pump drive-end bearing and slightly raised housing temperature by hand. Lubrication record shows one missed greasing interval | Bearing greased on day 12. Bearing inspection scheduled for the next planned stop. Sensing points left in place                |
| AFTER THE ACTION                                                                                                                                                         | TEAM LABELS                                                                                                                    |
| Level at the pump drive end fell from 2.3 to 1.9 mm/s RMS within a day, then rose at a slower rate to 2.1 by day 14                                                      | Notice 1: worth checking. Notice 2: equipment concern (confirmed at inspection). Notice 3: known issue, action already planned |

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#### 5. OPEN QUESTIONS

- Whether the remaining rise after greasing is the bearing itself or coupling alignment. The sound change points to the bearing; an alignment check and a spectrum at the next reading would settle it.
- Whether the reduced-flow night state masks part of the trend. The daytime readings carry the finding; the night readings are consistent with it.

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#### 6. SUGGESTED NEXT STEPS

- Carry out the planned bearing inspection at the next planned stop, within two weeks, with an alignment check at the same time.
- Keep the two vibration sensing points on this pump for a further 30 days to confirm the outcome of the repair.
- Decide whether this pump justifies ongoing Machine Health Watch. On this evidence it is a candidate; the other pumps in the bay were not observed and no conclusion is drawn about them.

limit. The maintenance team's labels, not the system's notices, decide what counts as a useful alert.