



OIL ANALYSIS REPORT

| | |
|-----------------|---------------|
| WEAR | SEVERE |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Area
Industrial Mechanical/Conveyors [202400085076]

Machine Id
17-UGCNVY-CV-6680-4

Component
Drive End Conveyor Gearbox

Fluid
SHELL OMALA S2 G 220 (--- GAL)

RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|----------|
| Sample Number | | Client Info | | WC0866337 | WC0413454 | --- |
| Sample Date | | Client Info | | 07 Feb 2024 | 01 Jun 2022 | --- |
| Machine Age | hrs | Client Info | | 0 | 0 | --- |
| Oil Age | hrs | Client Info | | 0 | 0 | --- |
| Filter Age | hrs | Client Info | | 0 | 0 | --- |
| Oil Changed | | Client Info | | Not Chngd | N/A | --- |
| Filter Changed | | Client Info | | Not Chngd | N/A | --- |
| Sample Status | | | | SEVERE | SEVERE | --- |

WEAR

Lead ppm levels are severe.

| | | | | | | |
|--------------|--------|---------------|------|--------------|-------|-----|
| Iron | ppm | ASTM D5185(m) | >100 | 44 | ▲ 252 | --- |
| Chromium | ppm | ASTM D5185(m) | | 1 | 3 | --- |
| Nickel | ppm | ASTM D5185(m) | | <1 | 10 | --- |
| Titanium | ppm | ASTM D5185(m) | | 0 | <1 | --- |
| Silver | ppm | ASTM D5185(m) | | 0 | <1 | --- |
| Aluminum | ppm | ASTM D5185(m) | | 2 | ● 14 | --- |
| Lead | ppm | ASTM D5185(m) | >15 | ▲ 99 | ▲ 105 | --- |
| Copper | ppm | ASTM D5185(m) | >35 | <1 | 10 | --- |
| Tin | ppm | ASTM D5185(m) | | 0 | 0 | --- |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | --- |
| White Metal | scalar | Visual* | NONE | NONE | NONE | --- |
| Yellow Metal | scalar | Visual* | NONE | NONE | NONE | --- |

CONTAMINATION

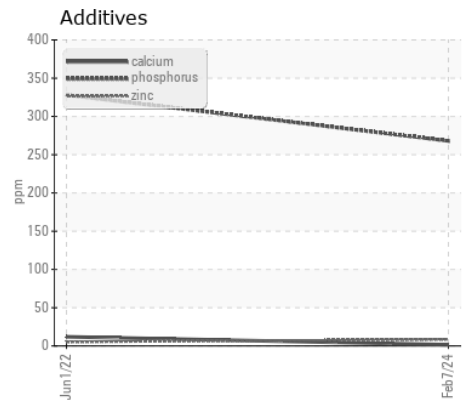
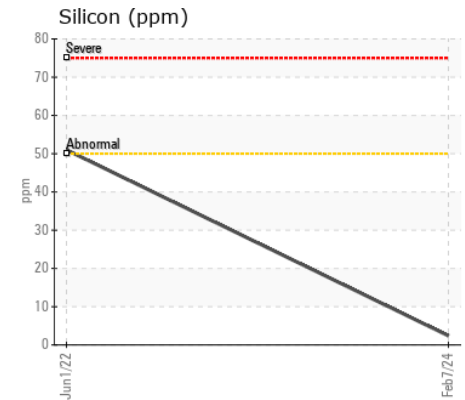
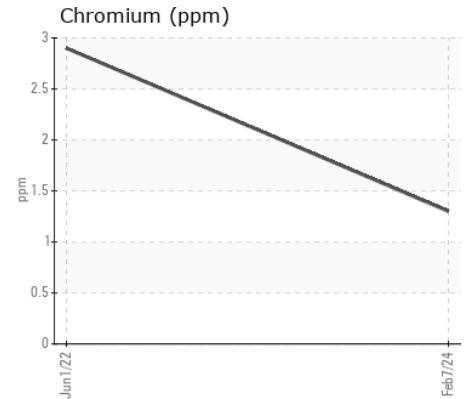
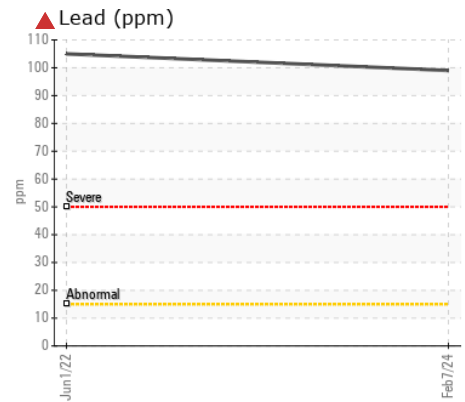
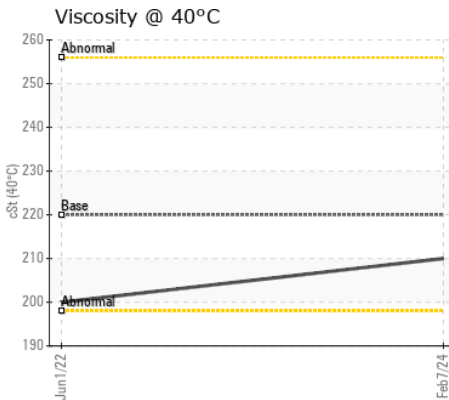
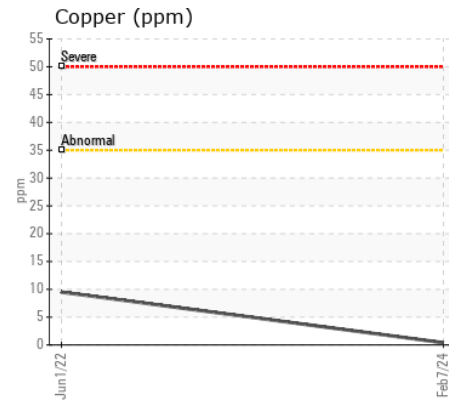
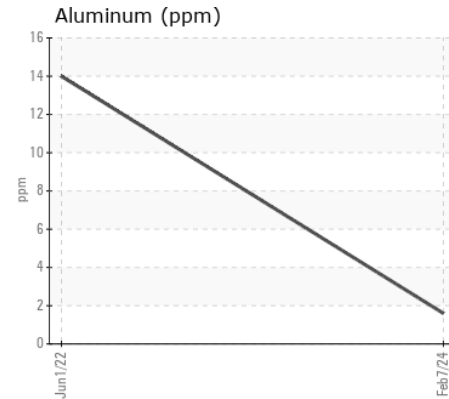
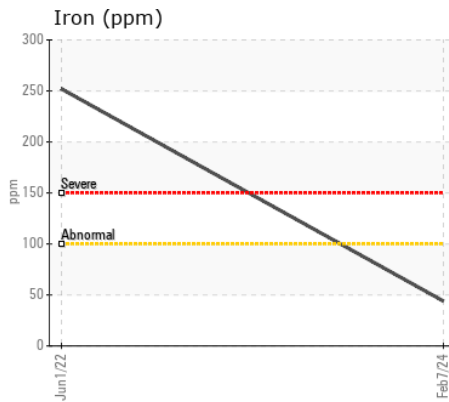
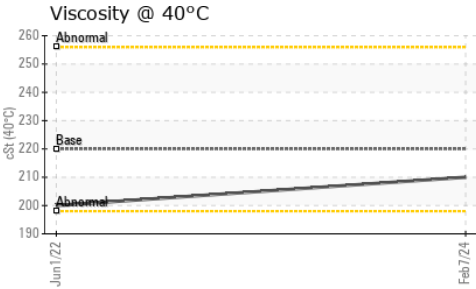
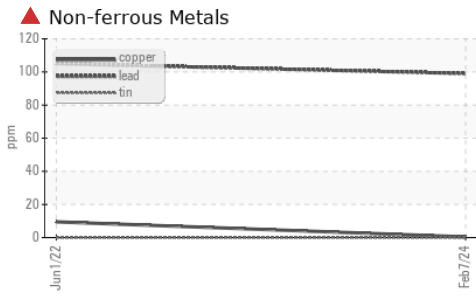
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|--------|---------------|-------|--------------|-------|-----|
| Silicon | ppm | ASTM D5185(m) | >50 | 2 | ▲ 51 | --- |
| Potassium | ppm | ASTM D5185(m) | >20 | 1 | 6 | --- |
| Water | | WC Method | >0.2 | NEG | NEG | --- |
| Silt | scalar | Visual* | NONE | NONE | LIGHT | --- |
| Debris | scalar | Visual* | NONE | NONE | LIGHT | --- |
| Sand/Dirt | scalar | Visual* | NONE | NONE | NONE | --- |
| Appearance | scalar | Visual* | NORML | NORML | NORML | --- |
| Odor | scalar | Visual* | NORML | NORML | NORML | --- |
| Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG | --- |

FLUID CONDITION

The oil is no longer serviceable as a result of the abnormal and/or severe wear.

| | | | | | | |
|-------------|-----|---------------|------|--------------|------|-----|
| Sodium | ppm | ASTM D5185(m) | | 1 | 4 | --- |
| Boron | ppm | ASTM D5185(m) | 4.4 | <1 | <1 | --- |
| Barium | ppm | ASTM D5185(m) | 0.0 | 0 | 0 | --- |
| Molybdenum | ppm | ASTM D5185(m) | 0 | 0 | <1 | --- |
| Manganese | ppm | ASTM D5185(m) | | 0 | 2 | --- |
| Magnesium | ppm | ASTM D5185(m) | 0 | 1 | 9 | --- |
| Calcium | ppm | ASTM D5185(m) | 0 | 2 | 12 | --- |
| Phosphorus | ppm | ASTM D5185(m) | 215 | 268 | 328 | --- |
| Zinc | ppm | ASTM D5185(m) | 0 | 8 | 5 | --- |
| Sulfur | ppm | ASTM D5185(m) | 7039 | 7552 | 3957 | --- |
| Visc @ 40°C | cSt | ASTM D7279(m) | 220 | 210 | 200 | --- |



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0866337
Lab Number : 02625397
Unique Number : 5750516
Test Package : MOB 1
Received : 28 Mar 2024
Tested : 28 Mar 2024
Diagnosed : 01 Apr 2024 - Kevin Marson

Vale - Creighton Mine
 CREIGHTON MINE MNTCE. (PLANT 17)
 COPPER CLIFF, ON
 CA P0M 1N0
 Contact: Igor Bozhyk
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 F: x:

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.