



OIL ANALYSIS REPORT

| | |
|-----------------|----------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | ABNORMAL |

Area
[202401326077]
 Machine Id
CAGE HOIST BRAKE LUBE
 Component
Brake
 Fluid
SHELL TELLUS 68 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

WEAR

All component wear rates are normal.

CONTAMINATION

There is no indication of any contamination in the fluid.

FLUID CONDITION

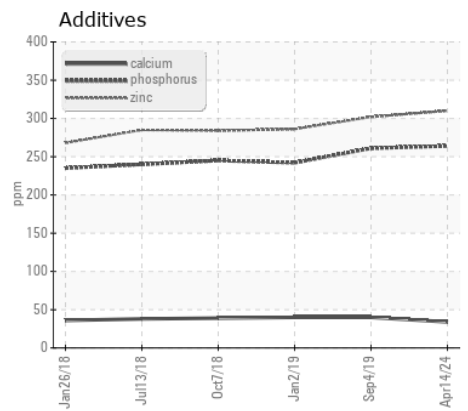
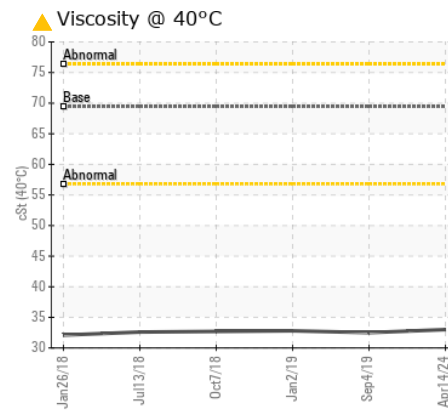
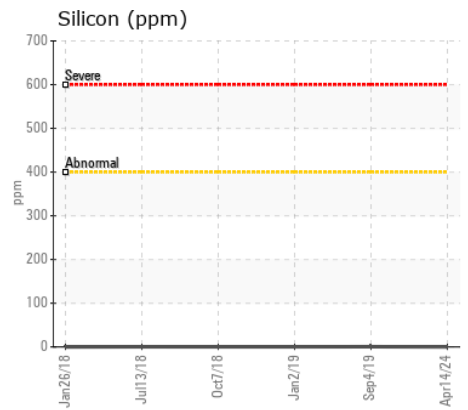
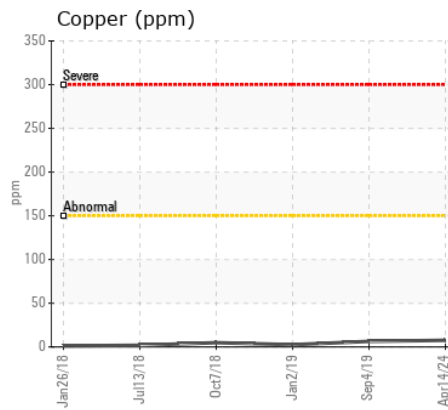
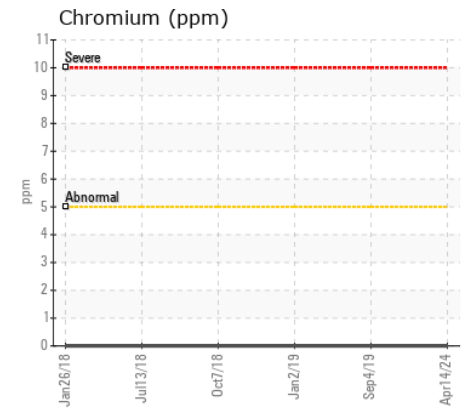
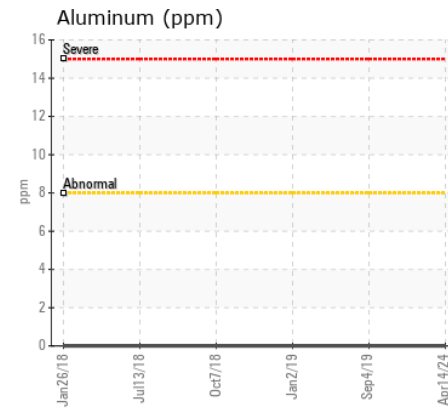
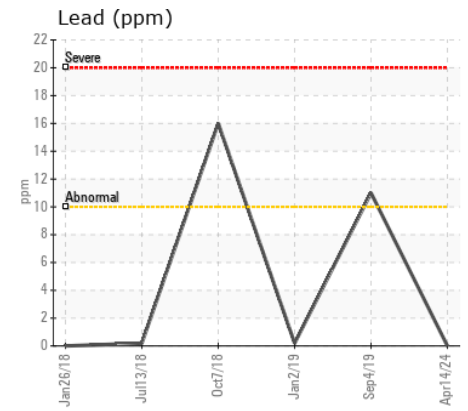
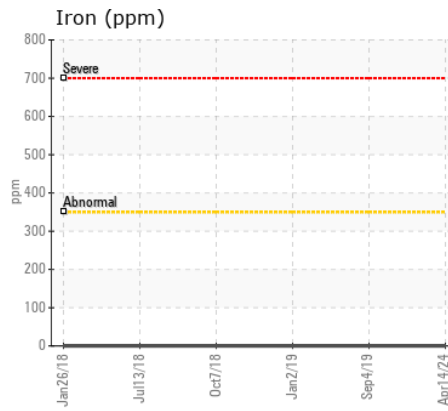
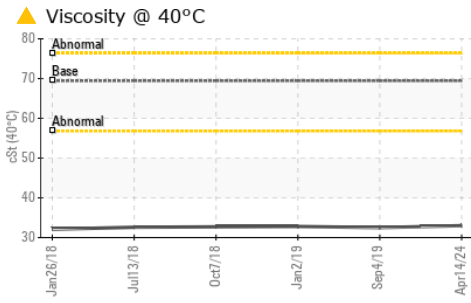
Viscosity of sample indicates oil is within ISO 32 range, advise investigate. The condition of the fluid is acceptable for the time in service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|------|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | WC0866399 | WC0285254 | WC0300573 |
| Sample Date | | Client Info | | 14 Apr 2024 | 04 Sep 2019 | 02 Jan 2019 |
| Machine Age | days | Client Info | | 0 | 0 | 0 |
| Oil Age | days | Client Info | | 0 | 0 | 0 |
| Filter Age | days | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Not Changed | N/A | N/A |
| Filter Changed | | Client Info | | Not Changed | N/A | N/A |
| Sample Status | | | | ABNORMAL | NORMAL | NORMAL |

| | | | | | | |
|--------------|--------|---------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185(m) | >350 | 0 | 0 | 0 |
| Chromium | ppm | ASTM D5185(m) | >5 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >5 | <1 | <1 | 0 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >8 | 0 | 0 | 0 |
| Lead | ppm | ASTM D5185(m) | >10 | 0 | 11 | <1 |
| Copper | ppm | ASTM D5185(m) | >150 | 8 | 6 | 3 |
| Tin | ppm | ASTM D5185(m) | >5 | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| White Metal | scalar | Visual* | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | Visual* | NONE | NONE | NONE | NONE |

| | | | | | | |
|------------------|--------|---------------|-------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185(m) | >400 | 0 | <1 | <1 |
| Potassium | ppm | ASTM D5185(m) | >20 | 0 | <1 | <1 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Silt | scalar | Visual* | NONE | NONE | NONE | NONE |
| Debris | scalar | Visual* | NONE | NONE | VLITE | VLITE |
| Sand/Dirt | scalar | Visual* | NONE | NONE | NONE | NONE |
| Appearance | scalar | Visual* | NORML | NORML | NORML | NORML |
| Odor | scalar | Visual* | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG | NEG |

| | | | | | | |
|-------------|-----|---------------|-------|---------------|------|------|
| Sodium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Boron | ppm | ASTM D5185(m) | | 0 | <1 | 0 |
| Barium | ppm | ASTM D5185(m) | | <1 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 11 | 18 | 7 | 10 |
| Calcium | ppm | ASTM D5185(m) | 39 | 34 | 40 | 40 |
| Phosphorus | ppm | ASTM D5185(m) | 260 | 264 | 261 | 242 |
| Zinc | ppm | ASTM D5185(m) | 279 | 310 | 302 | 286 |
| Sulfur | ppm | ASTM D5185(m) | 2109 | 1226 | 1894 | 2342 |
| Visc @ 40°C | cSt | ASTM D7279(m) | 69.43 | ▲ 33.0 | 32.5 | 32.8 |



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0866399 **Received** : 07 May 2024
Lab Number : 02633890 **Tested** : 07 May 2024
Unique Number : 5775043 **Diagnosed** : 07 May 2024 - Kevin Marson
Test Package : MOB 1

Vale - Copper Cliff Smelter
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 COPPER CLIFF, ON
 CA P0M 1N0
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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.