



OIL ANALYSIS REPORT

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

Machine Id
402 CRANE BRIDGE GEARBOX SOUTH WEST

Component
Gearbox

Fluid
SHELL OMALA S4 GX 220 (24 LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

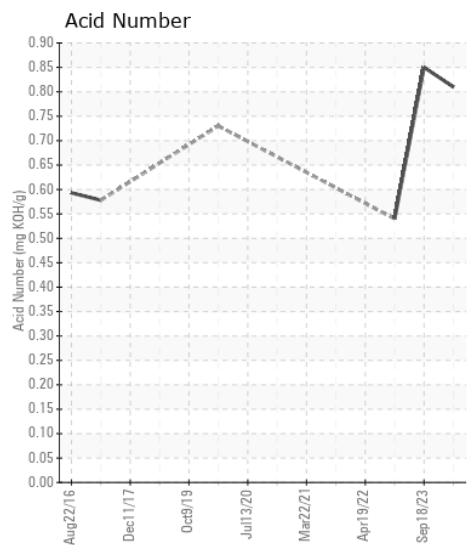
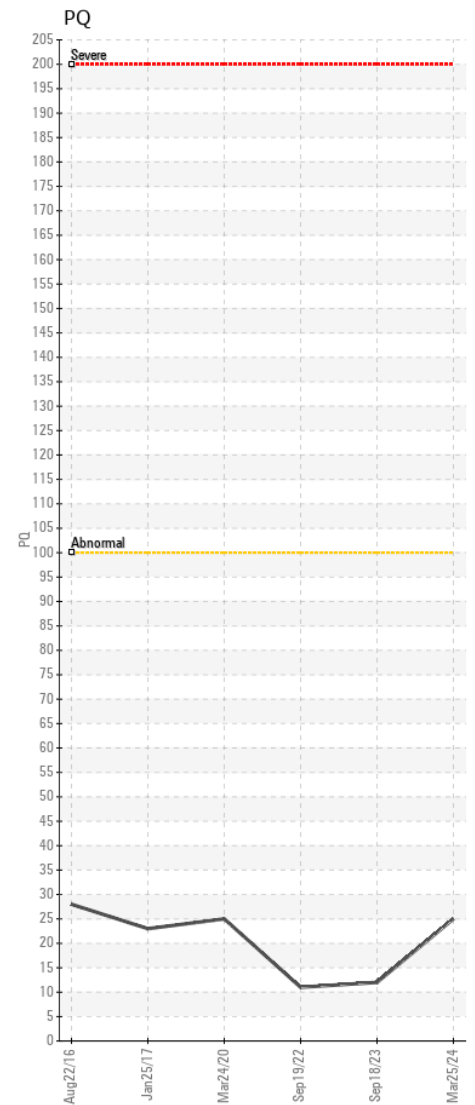
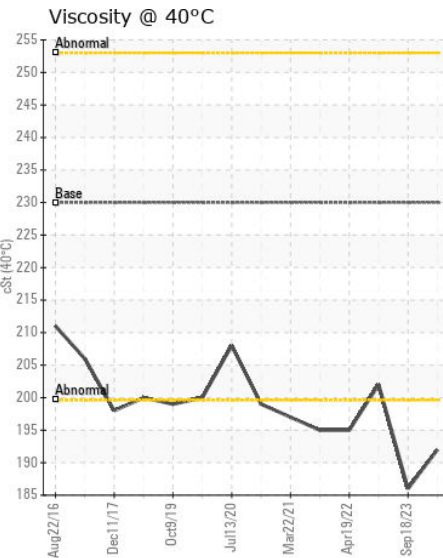
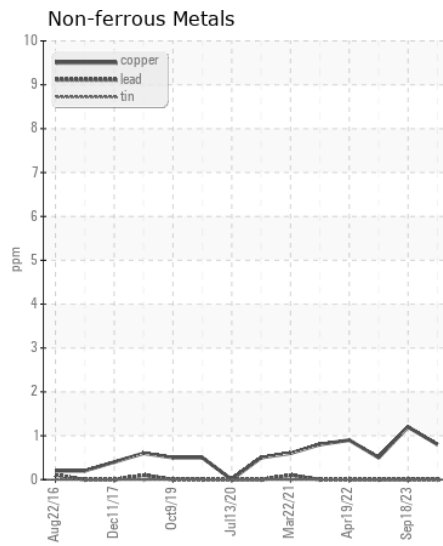
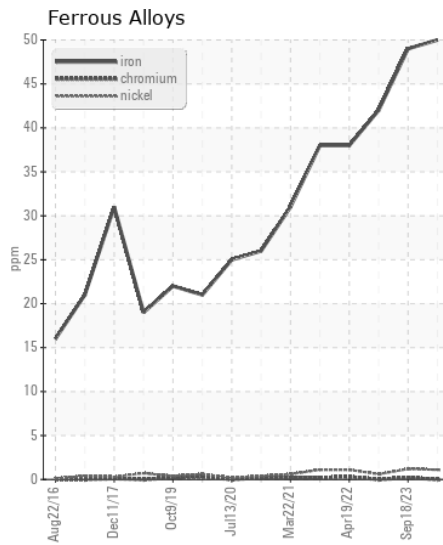
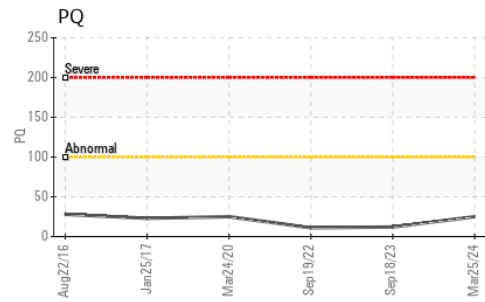
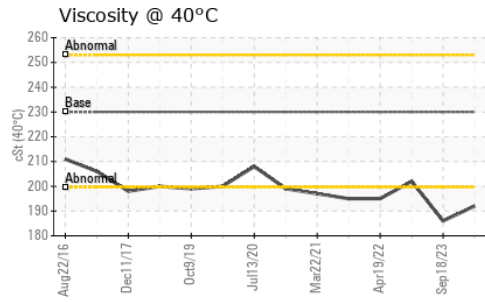
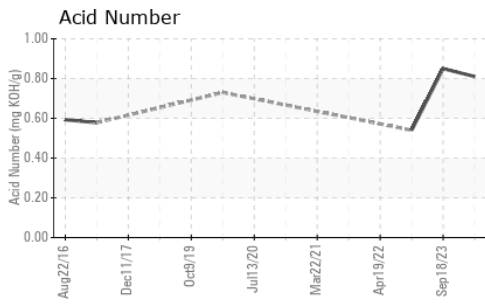
CONTAMINATION

There is no indication of any contamination in the oil.

FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|------------------|----------|---------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | WC0716511 | WC0811781 | WC0665413 |
| Sample Date | | Client Info | | 25 Mar 2024 | 18 Sep 2023 | 19 Sep 2022 |
| Machine Age | yrs | Client Info | | 0 | 0 | 0 |
| Oil Age | yrs | Client Info | | 0 | 0 | 0 |
| Filter Age | yrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Not Changd | Not Changd | Not Changd |
| Filter Changed | | Client Info | | Not Changd | N/A | Not Changd |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| PQ | | ASTM D8184* | | 25 | 12 | 11 |
| Iron | ppm | ASTM D5185(m) | >200 | 50 | 49 | 42 |
| Chromium | ppm | ASTM D5185(m) | >15 | 0 | <1 | 0 |
| Nickel | ppm | ASTM D5185(m) | >15 | 1 | 1 | <1 |
| Titanium | ppm | ASTM D5185(m) | | <1 | 0 | <1 |
| Silver | ppm | ASTM D5185(m) | | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >25 | <1 | <1 | <1 |
| Lead | ppm | ASTM D5185(m) | >100 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185(m) | >200 | <1 | 1 | <1 |
| Tin | ppm | ASTM D5185(m) | >25 | 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) | >50 | 17 | 17 | 16 |
| Potassium | ppm | ASTM D5185(m) | >20 | 3 | 2 | 2 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Silt | scalar | Visual* | NONE | NONE | NONE | NONE |
| Debris | scalar | Visual* | NONE | VLITE | NONE | NONE |
| Sand/Dirt | scalar | Visual* | NONE | VLITE | LIGHT | 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) | | 2 | 3 | 2 |
| Boron | ppm | ASTM D5185(m) | | 16 | 17 | 19 |
| Barium | ppm | ASTM D5185(m) | | <1 | 1 | <1 |
| Molybdenum | ppm | ASTM D5185(m) | | 24 | 24 | 17 |
| Manganese | ppm | ASTM D5185(m) | | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185(m) | | <1 | 1 | 0 |
| Calcium | ppm | ASTM D5185(m) | | 22 | 22 | 19 |
| Phosphorus | ppm | ASTM D5185(m) | | 378 | 381 | 447 |
| Zinc | ppm | ASTM D5185(m) | | 8 | 10 | 6 |
| Sulfur | ppm | ASTM D5185(m) | | 5614 | 5575 | 5547 |
| Acid Number (AN) | mg KOH/g | ASTM D974* | | 0.81 | 0.85 | 0.54 |
| Visc @ 40°C | cSt | ASTM D7279(m) | 230 | 192 | 186 | 202 |



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0716511
Lab Number : 02626731
Unique Number : 5759863
Test Package : IND 2 (Additional Tests: TAN Man)

Received : 04 Apr 2024
Tested : 04 Apr 2024
Diagnosed : 05 Apr 2024 - Kevin Marson

Vale - Copper Cliff Smelter
 COPPER CLIFF SMELTER WAREHOUSE, 155 BALSAM ST.
 COPPER CLIFF, ON
 CA P0M 1N0
 Contact: Andy Kozachanko
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 T: (705)682-6687
 F: (705)682-6939

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.