



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

Machine Id
SIGNET CHALLENGER

Component
Port Main Engine

Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | MW0051956 | MW0051872 | MW0051867 |
| Sample Date | | Client Info | | 22 May 2024 | 05 Mar 2024 | 30 Dec 2023 |
| Machine Age | hrs | Client Info | | 27523 | 27303 | 27150 |
| Oil Age | hrs | Client Info | | 28 | 477 | 250 |
| Filter Age | hrs | Client Info | | 28 | 477 | 250 |
| Oil Changed | | Client Info | | Changed | Not Changd | Not Changd |
| Filter Changed | | Client Info | | Changed | Not Changd | Not Changd |
| Sample Status | | | | NORMAL | ABNORMAL | ABNORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >120 | 5 | 5 | 4 |
| Chromium | ppm | ASTM D5185m | >10 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | <1 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| Silver | ppm | ASTM D5185m | >5 | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 5 | 3 | 2 |
| Lead | ppm | ASTM D5185m | >40 | 2 | 3 | 1 |
| Copper | ppm | ASTM D5185m | >300 | 1 | 4 | 3 |
| Tin | ppm | ASTM D5185m | >10 | <1 | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

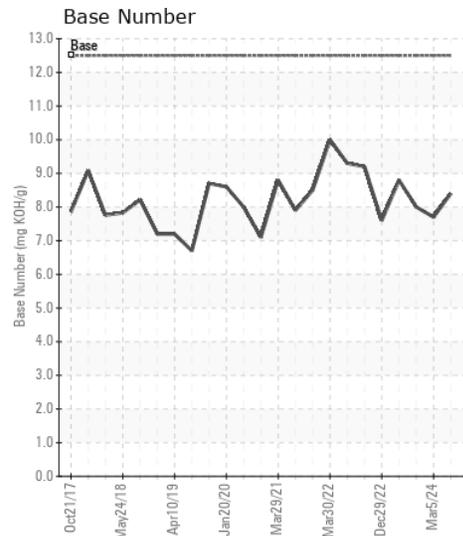
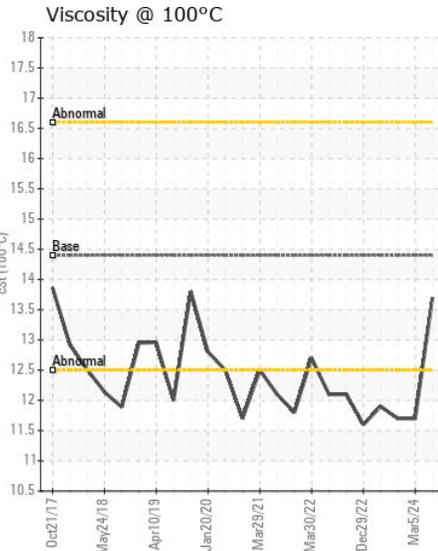
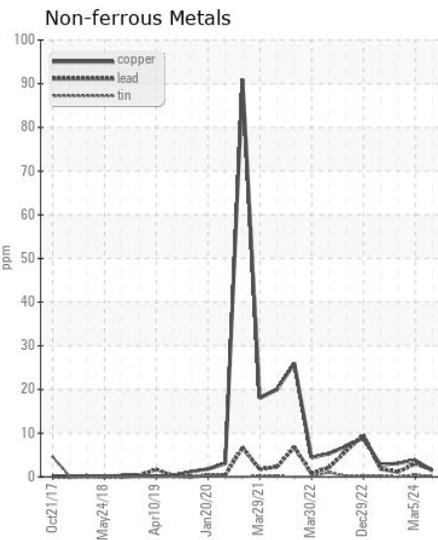
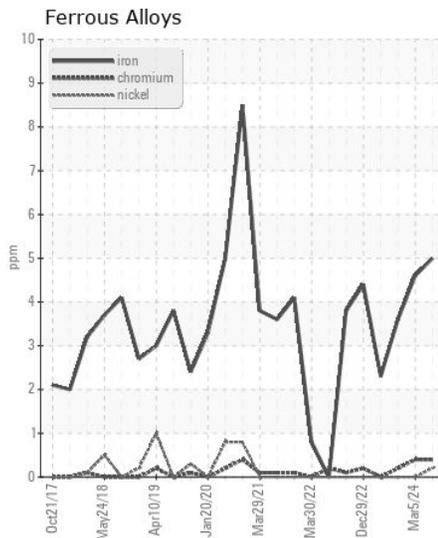
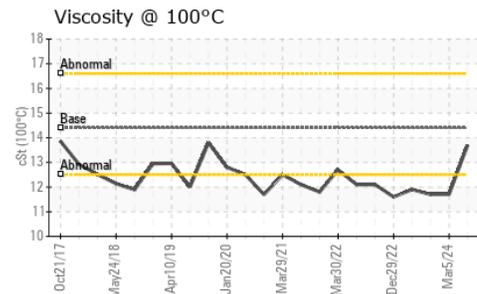
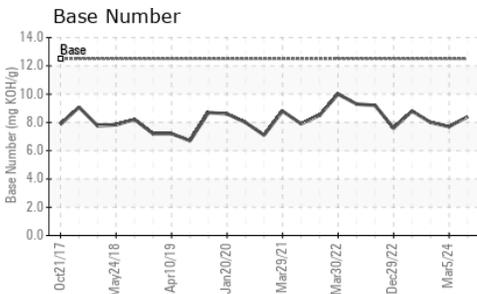
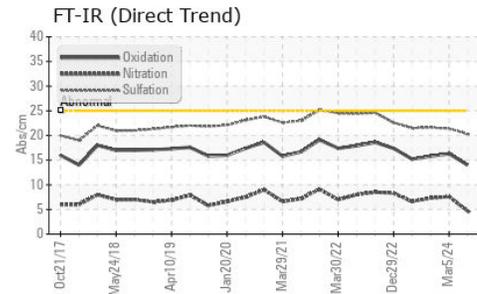
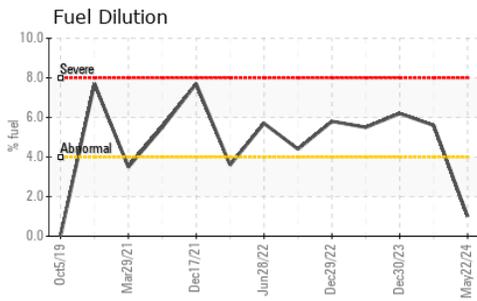
Fuel content negligible. There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 11 | 5 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 2 | 2 |
| Fuel | % | ASTM D3524 | >4.0 | 1.0 | ▲ 5.6 | ▲ 6.2 |
| Water | | WC Method | >0.1 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | | 0.1 | 0.1 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 4.7 | 7.6 | 7.3 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 20.3 | 21.4 | 21.6 |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | NONE |
| 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 | >0.1 | NEG | NEG | NEG |

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|------|--------------|--------|--------|
| Sodium | ppm | ASTM D5185m | | 5 | <1 | 0 |
| Boron | ppm | ASTM D5185m | 151 | 711 | 262 | 250 |
| Barium | ppm | ASTM D5185m | 0.4 | 1 | 2 | 5 |
| Molybdenum | ppm | ASTM D5185m | 250 | 165 | 109 | 107 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | 0 | 967 | 652 | 655 |
| Calcium | ppm | ASTM D5185m | 2046 | 2263 | 1449 | 1294 |
| Phosphorus | ppm | ASTM D5185m | 1043 | 1583 | 768 | 670 |
| Zinc | ppm | ASTM D5185m | 943 | 1762 | 905 | 836 |
| Sulfur | ppm | ASTM D5185m | 5012 | 5546 | 2852 | 2461 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 14.0 | 16.3 | 15.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 12.5 | 8.4 | 7.7 | 8.0 |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 13.7 | ▲ 11.7 | ▲ 11.7 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0051956 **Received** : 31 May 2024
Lab Number : 06196272 **Tested** : 04 Jun 2024
Unique Number : 11058395 **Diagnosed** : 04 Jun 2024 - Jonathan Hester
Test Package : MAR 2 (Additional Tests: PercentFuel)

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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