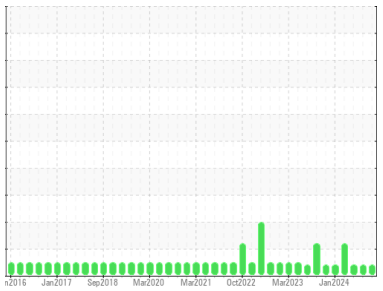
# OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY

Area
**ELEANOR G MCDONALD**
Machine Id
**[ELEANOR G MCDONALD] 007 552824-7**
Component
**Port Genset**
Fluid
**CHEVRON DELO 400 XLE 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Oil and filter change at the time of sampling has been noted. 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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **MW0068233** | MW0065703 | MW0065698 |
| Sample Date | | Client Info | | **01 Jun 2024** | 21 Mar 2024 | 02 Mar 2024 |
| Machine Age | hrs | Client Info | | **6716** | 6011 | 5565 |
| Oil Age | hrs | Client Info | | **207** | 400 | 361 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **ATTENTION** | ATTENTION | ATTENTION |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >4.0 | **<1.0** | <1.0 | <1.0 |
| Water | | WC Method | >0.1 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **1** | 7 | 6 |
| Chromium | ppm | ASTM D5185m | >4 | **0** | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >2 | **<1** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Silver | ppm | ASTM D5185m | >5 | **0** | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >12 | **2** | 4 | 3 |
| Lead | ppm | ASTM D5185m | >17 | **0** | <1 | <1 |
| Copper | ppm | ASTM D5185m | >70 | **36** | 41 | 58 |
| Tin | ppm | ASTM D5185m | >15 | **0** | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **2** | <1 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **421** | 351 | 314 |
| Barium | ppm | ASTM D5185m | | **0** | 2 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **114** | 115 | 112 |
| Manganese | ppm | ASTM D5185m | | **2** | 2 | 3 |
| Magnesium | ppm | ASTM D5185m | | **593** | 587 | 614 |
| Calcium | ppm | ASTM D5185m | | **1572** | 1457 | 1487 |
| Phosphorus | ppm | ASTM D5185m | 760 | **648** | 643 | 677 |
| Zinc | ppm | ASTM D5185m | 830 | **783** | 779 | 804 |
| Sulfur | ppm | ASTM D5185m | 2770 | **2564** | 2461 | 2761 |

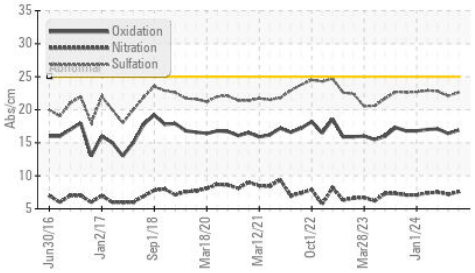
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **4** | 6 | 7 |
| Sodium | ppm | ASTM D5185m | | **4** | 2 | 1 |
| Potassium | ppm | ASTM D5185m | >20 | **3** | 2 | 0 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | | **0.1** | 0.1 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **7.6** | 7.2 | 7.5 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **22.6** | 22.1 | 22.8 |

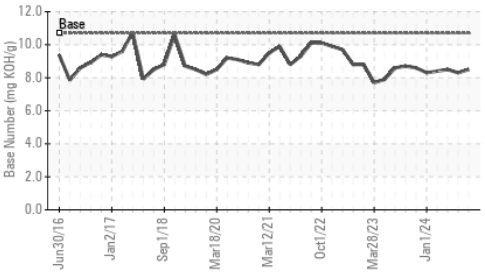
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **16.9** | 16.4 | 17.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.7 | **8.5** | 8.3 | 8.5 |

# OIL ANALYSIS REPORT

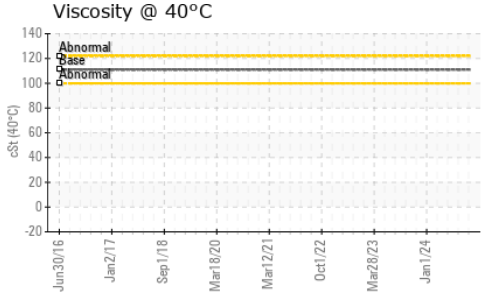
FT-IR (Direct Trend)



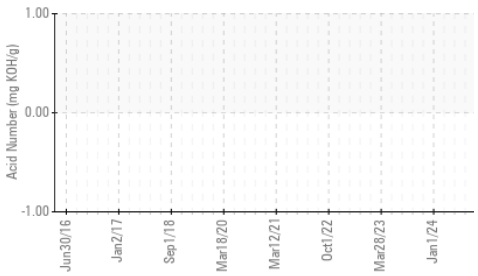

Base Number



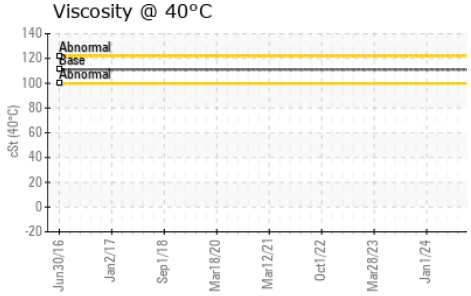

Viscosity @ 40°C




Acid Number




Viscosity @ 40°C

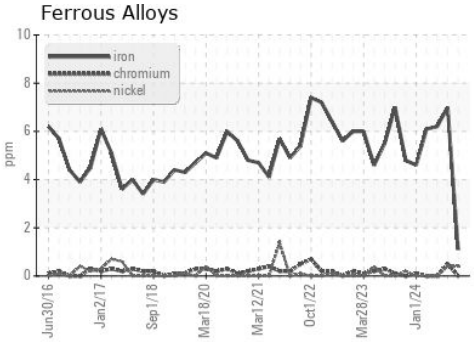



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

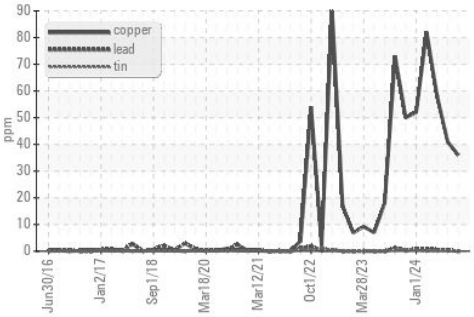
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 14.9 | **12.1** | 12.0 | 12.4 |

## GRAPHS

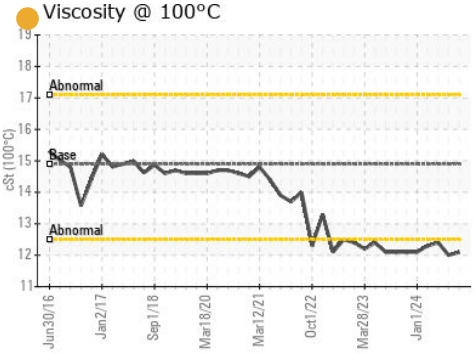
Ferrous Alloys



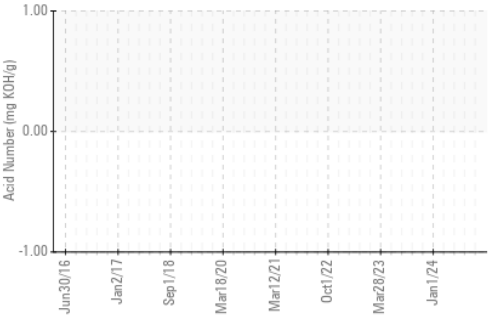

Non-ferrous Metals




Viscosity @ 100°C




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : MW0068233 **Received** : 13 Jun 2024
**Lab Number** : 06209487 **Tested** : 17 Jun 2024
**Unique Number** : 11076948 **Diagnosed** : 17 Jun 2024 - Don Baldridge
**Test Package** : MAR 2 ( Additional Tests: KV40, TAN Man )

*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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Report Id: INGPAD [WUSCAR] 06209487 (Generated: 06/17/2024 14:49:35) Rev: 1
Contact/Location: ANTHONY VAN CURA - INGPAD