



OIL ANALYSIS REPORT

Sample Rating Trend

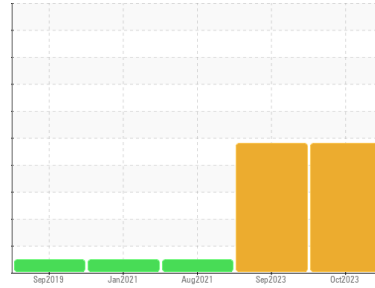
GLYCOL

Area
[41819384]

Machine Id
R258

Component
Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)



DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Test for glycol is positive. There is a light concentration of glycol present in the oil.

Fluid Condition

The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|-------------|-------------|-------------|
| Sample Number | Client Info | | WC0853513 | WC0853399 | WC0581040 |
| Sample Date | Client Info | | 19 Oct 2023 | 30 Sep 2023 | 17 Aug 2021 |
| Machine Age | kms | Client Info | 193349 | 193471 | 109271 |
| Oil Age | kms | Client Info | 0 | 0 | 0 |
| Oil Changed | Client Info | | Changed | Not Changd | N/A |
| Sample Status | | | ABNORMAL | ABNORMAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|-------|-----------|------------|---------|----------|----------|
| Fuel | WC Method | >2.0 | <1.0 | <1.0 | <1.0 |
| Water | WC Method | >0.2 | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 | |
|-----------|--------|---------------|---------|----------|----------|----|
| Iron | ppm | ASTM D5185(m) | >100 | 8 | 27 | 37 |
| Chromium | ppm | ASTM D5185(m) | >20 | 0 | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) | >4 | <1 | 0 | <1 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >3 | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | 2 | 5 | 3 |
| Lead | ppm | ASTM D5185(m) | >40 | <1 | 4 | 1 |
| Copper | ppm | ASTM D5185(m) | >330 | <1 | 4 | 5 |
| Tin | ppm | ASTM D5185(m) | >15 | 0 | <1 | <1 |
| Antimony | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | <1 |
| Beryllium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 | |
|------------|--------|---------------|---------|----------|----------|------|
| Boron | ppm | ASTM D5185(m) | 250 | 63 | 12 | 37 |
| Barium | ppm | ASTM D5185(m) | 10 | 0 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 100 | 5 | 16 | 14 |
| Manganese | ppm | ASTM D5185(m) | | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 450 | 719 | 781 | 745 |
| Calcium | ppm | ASTM D5185(m) | 3000 | 1313 | 1382 | 1361 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | 707 | 752 | 768 |
| Zinc | ppm | ASTM D5185(m) | 1350 | 759 | 822 | 850 |
| Sulfur | ppm | ASTM D5185(m) | 4250 | 2671 | 2634 | 2583 |
| Lithium | ppm | ASTM D5185(m) | | <1 | <1 | <1 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 | |
|-----------|--------|---------------|---------|----------|----------|-----|
| Silicon | ppm | ASTM D5185(m) | >25 | 4 | 7 | 6 |
| Sodium | ppm | ASTM D5185(m) | | ▲ 37 | ▲ 162 | 3 |
| Potassium | ppm | ASTM D5185(m) | >20 | ▲ 34 | ▲ 147 | 3 |
| Glycol | % | ASTM D7922* | | ▲ 0.022 | ▲ 0.019 | NEG |

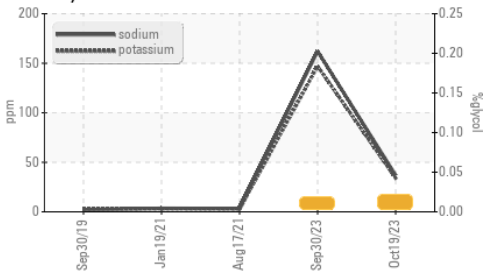
INFRA-RED

| | method | limit/base | current | history1 | history2 | |
|-----------|----------|-------------|---------|----------|----------|------|
| Soot % | % | ASTM D7844* | >3 | 0.4 | 1.4 | 1.2 |
| Nitration | Abs/cm | ASTM D7624* | >20 | 8.2 | 12.5 | 11.9 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 19.2 | 23.8 | 23.1 |



OIL ANALYSIS REPORT

▲ Glycol Contamination



FLUID DEGRADATION

| method | limit/base | current | history1 | history2 |
|----------|-------------|---------|----------|----------|
| Abs./1mm | ASTM D7414* | >25 | 17.2 | 17.5 |

VISUAL

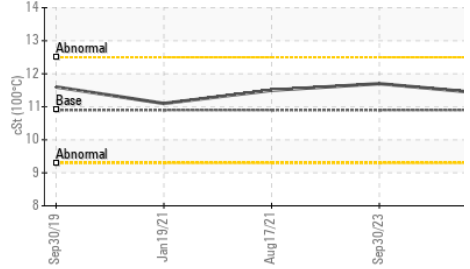
| method | limit/base | current | history1 | history2 |
|--------|------------|---------|----------|----------|
| scalar | Visual* | >0.2 | NEG | NEG |
| scalar | Visual* | NEG | NEG | NEG |

FLUID PROPERTIES

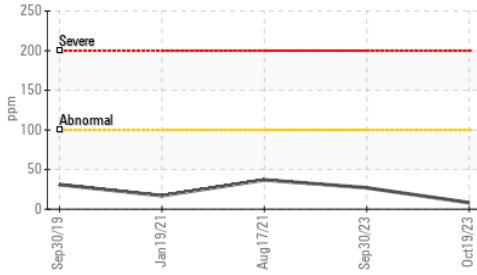
| method | limit/base | current | history1 | history2 |
|--------|---------------|---------|----------|----------|
| cSt | ASTM D7279(m) | 10.9 | 11.7 | 11.5 |

GRAPHS

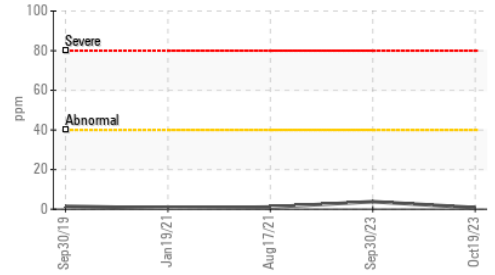
Viscosity @ 100°C



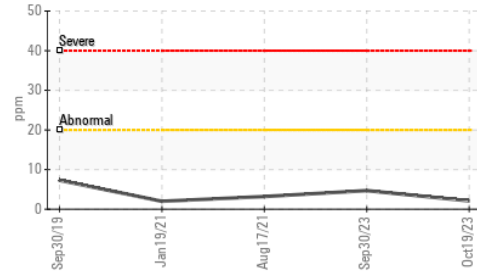
Iron (ppm)



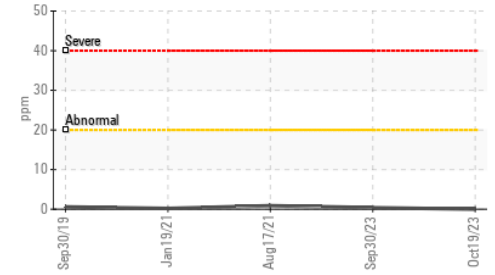
Lead (ppm)



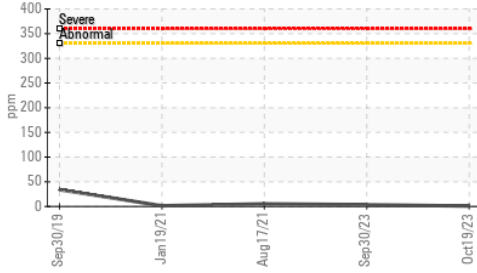
Aluminum (ppm)



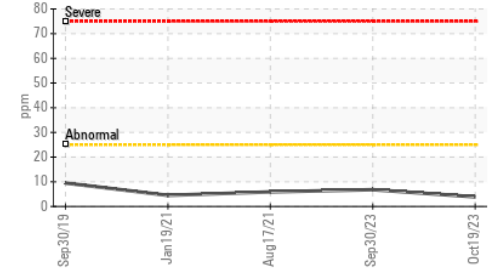
Chromium (ppm)



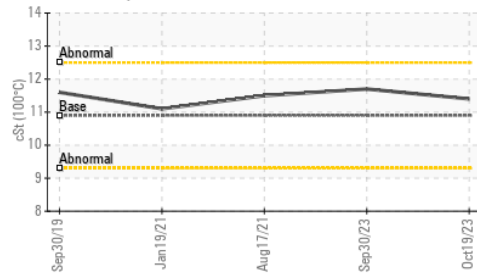
Copper (ppm)



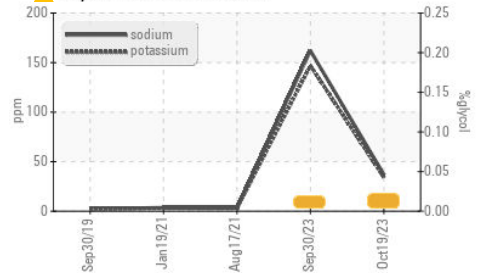
Silicon (ppm)



Viscosity @ 100°C



▲ Glycol Contamination



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0853513 **Received** : 09 Jan 2024
Lab Number : 02607432 **Diagnosed** : 09 Jan 2024
Unique Number : 5708518 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: Glycol)

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.

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