



OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

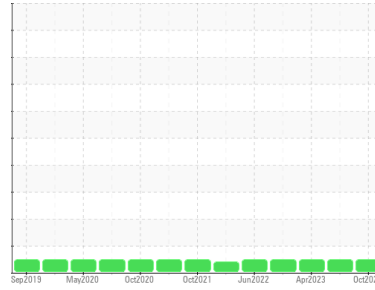


Area
[4166856]

Machine Id
9533

Component
Diesel Engine

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



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

Fluid Condition

The condition of the oil is acceptable for the time in service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|--------------------|-------------|-------------|------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | | WC0853346 | WC0796221 | WC0796644 |
| Sample Date | Client Info | | | 07 Oct 2023 | 17 Jun 2023 | 01 Apr 2023 |
| Machine Age | kms | Client Info | | 513157 | 475879 | 462483 |
| Oil Age | kms | Client Info | | 0 | 0 | 0 |
| Oil Changed | Client Info | | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

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

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|---------------|------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185(m) | >100 | 63 | 16 | 33 |
| Chromium | ppm | ASTM D5185(m) | >20 | 2 | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) | >4 | <1 | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | <1 |
| Silver | ppm | ASTM D5185(m) | >3 | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | 17 | 4 | 7 |
| Lead | ppm | ASTM D5185(m) | >40 | <1 | <1 | 0 |
| Copper | ppm | ASTM D5185(m) | >330 | 3 | 2 | 2 |
| Tin | ppm | ASTM D5185(m) | >15 | 0 | 0 | 0 |
| 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 | 35 | 45 | 30 |
| Barium | ppm | ASTM D5185(m) | 10 | <1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 100 | 26 | 2 | 4 |
| Manganese | ppm | ASTM D5185(m) | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 450 | 770 | 758 | 783 |
| Calcium | ppm | ASTM D5185(m) | 3000 | 1478 | 1328 | 1524 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | 727 | 751 | 786 |
| Zinc | ppm | ASTM D5185(m) | 1350 | 850 | 803 | 828 |
| Sulfur | ppm | ASTM D5185(m) | 4250 | 2454 | 2527 | 2644 |
| Lithium | ppm | ASTM D5185(m) | | <1 | <1 | <1 |

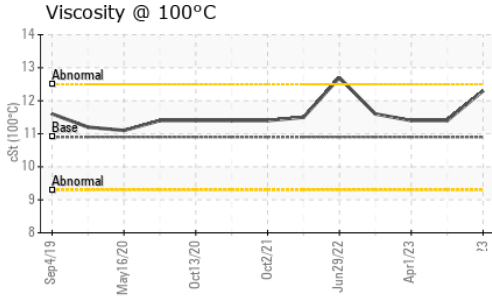
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|---------------|------------|-----------|----------|----------|
| Silicon | ppm | ASTM D5185(m) | >25 | 10 | 5 | 6 |
| Sodium | ppm | ASTM D5185(m) | | 5 | 3 | 3 |
| Potassium | ppm | ASTM D5185(m) | >20 | 26 | 6 | 7 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|-----------|----------|-------------|------------|-------------|----------|----------|
| Soot % | % | ASTM D7844* | >3 | 0.8 | 0.3 | 0.5 |
| Nitration | Abs/cm | ASTM D7624* | >20 | 14.0 | 11.1 | 13.1 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 27.7 | 20.8 | 27.2 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | 24.9 | 16.6 | 21.5 |



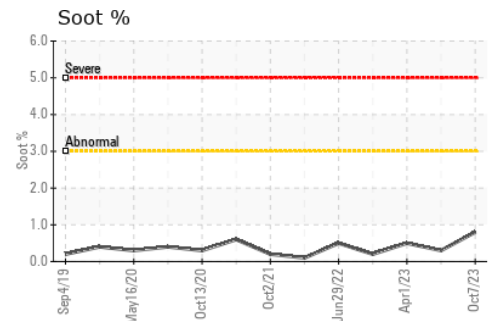
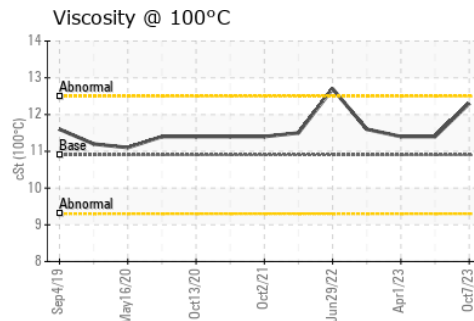
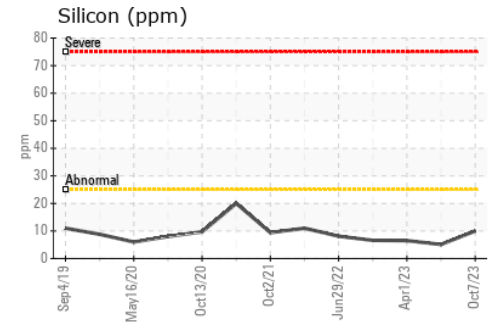
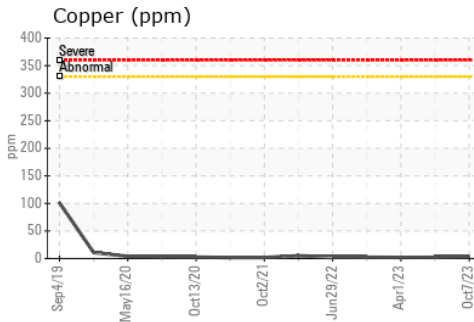
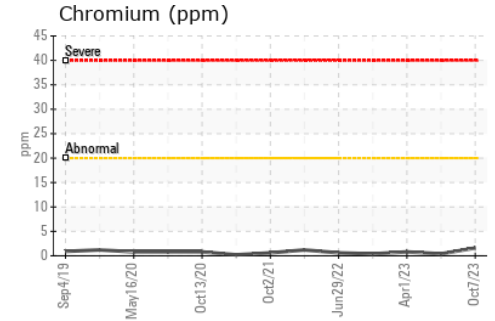
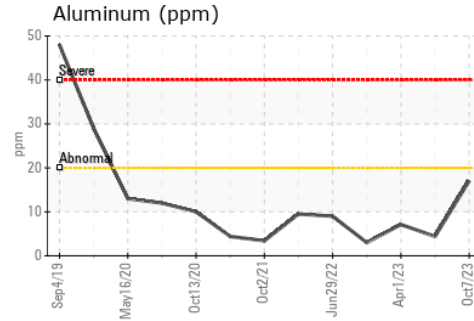
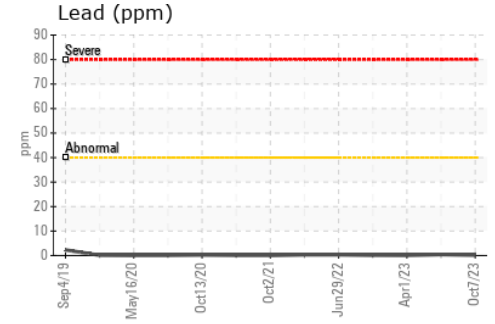
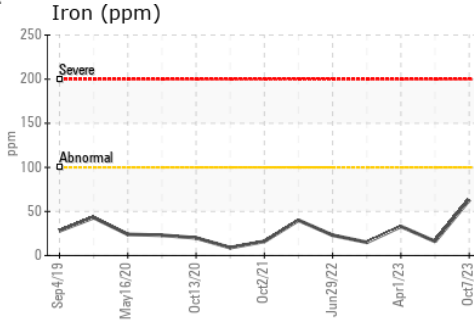
OIL ANALYSIS REPORT



| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG |
| Free Water | scalar | Visual* | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|---------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D7279(m) | 10.9 | 12.3 | 11.4 |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0853346 **Received** : 17 Oct 2023
Lab Number : 02589514 **Diagnosed** : 17 Oct 2023
Unique Number : 5658580 **Diagnostician** : Wes Davis
Test Package : MOB 1

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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.