

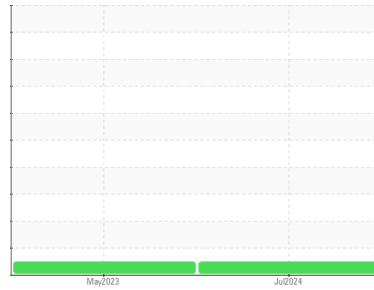


OIL ANALYSIS REPORT



Machine Id
CATERPILLAR PIONEER 3508
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON HP 15W40 (--- GAL)

Sample Rating Trend



NORMAL



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

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 | | WC0915618 | PC0074649 | --- |
| Sample Date | Client Info | | 04 Jul 2024 | 05 May 2023 | --- |
| Machine Age | hrs | Client Info | 274 | 159 | --- |
| Oil Age | hrs | Client Info | 115 | 159 | --- |
| Oil Changed | Client Info | | Changed | Changed | --- |
| Sample Status | | | NORMAL | NORMAL | --- |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel | WC Method | >5 | <1.0 | <1.0 | --- |
| Water | WC Method | >0.2 | NEG | NEG | --- |
| Glycol | WC Method | | NEG | NEG | --- |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|--------------------|----------|----------|----------|
| Iron | ppm | ASTM D5185(m) >100 | 6 | 10 | --- |
| Chromium | ppm | ASTM D5185(m) >20 | 0 | <1 | --- |
| Nickel | ppm | ASTM D5185(m) >2 | 0 | 0 | --- |
| Titanium | ppm | ASTM D5185(m) >2 | 0 | 0 | --- |
| Silver | ppm | ASTM D5185(m) >2 | 0 | 0 | --- |
| Aluminum | ppm | ASTM D5185(m) >25 | 1 | 1 | --- |
| Lead | ppm | ASTM D5185(m) >40 | 6 | 2 | --- |
| Copper | ppm | ASTM D5185(m) >330 | 4 | 10 | --- |
| Tin | ppm | ASTM D5185(m) >15 | 2 | <1 | --- |
| Antimony | ppm | ASTM D5185(m) | 0 | 0 | --- |
| Vanadium | ppm | ASTM D5185(m) | 0 | 0 | --- |
| Beryllium | ppm | ASTM D5185(m) | 0 | 0 | --- |
| Cadmium | ppm | ASTM D5185(m) | 0 | 0 | --- |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|--------------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185(m) 0 | 27 | 141 | --- |
| Barium | ppm | ASTM D5185(m) 0 | <1 | <1 | --- |
| Molybdenum | ppm | ASTM D5185(m) 60 | 60 | 62 | --- |
| Manganese | ppm | ASTM D5185(m) 0 | <1 | 1 | --- |
| Magnesium | ppm | ASTM D5185(m) 1010 | 814 | 378 | --- |
| Calcium | ppm | ASTM D5185(m) 1070 | 1223 | 1840 | --- |
| Phosphorus | ppm | ASTM D5185(m) 1150 | 1013 | 1058 | --- |
| Zinc | ppm | ASTM D5185(m) 1270 | 1174 | 1164 | --- |
| Sulfur | ppm | ASTM D5185(m) 2060 | 2695 | 2782 | --- |
| Lithium | ppm | ASTM D5185(m) | <1 | <1 | --- |

CONTAMINANTS

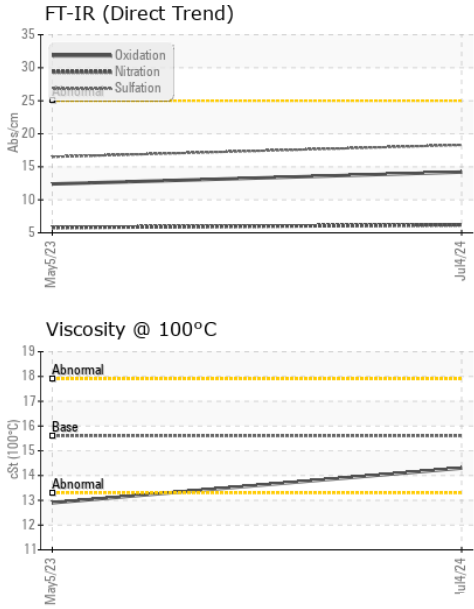
| | method | limit/base | current | history1 | history2 |
|-----------|--------|-------------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185(m) >25 | 2 | 3 | --- |
| Sodium | ppm | ASTM D5185(m) | 1 | 2 | --- |
| Potassium | ppm | ASTM D5185(m) >20 | <1 | 1 | --- |

INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | ASTM D7844* >3 | 0 | 0 | --- |
| Nitration | Abs/cm | ASTM D7624* >20 | 6.2 | 5.8 | --- |
| Sulfation | Abs./1mm | ASTM D7415* >30 | 18.3 | 16.5 | --- |



OIL ANALYSIS REPORT

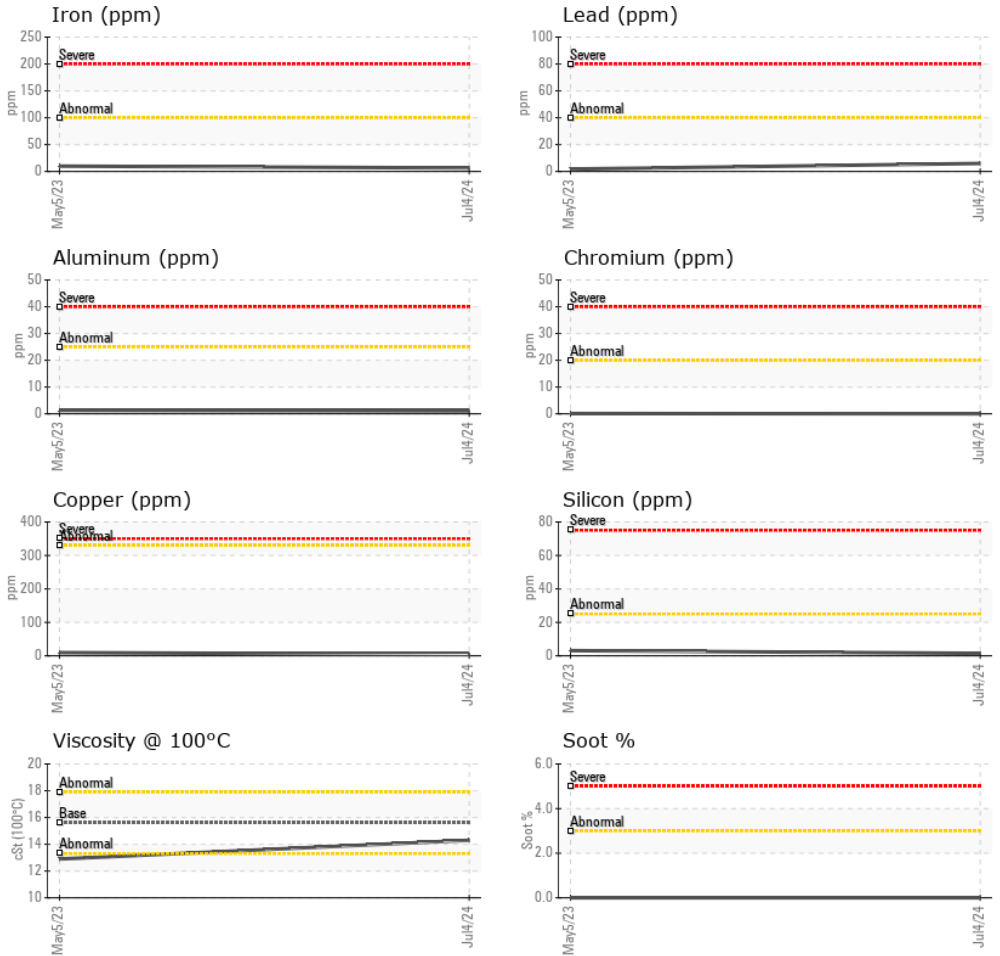


| FLUID DEGRADATION | method | limit/base | current | history1 | history2 | |
|-------------------|----------|-------------|---------|-------------|----------|-----|
| Oxidation | Abs./1mm | ASTM D7414* | >25 | 14.2 | 12.4 | --- |

| VISUAL | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|--------------|----------|-----|
| White Metal | scalar | Visual* | NONE | VLITE | --- | --- |
| Yellow Metal | scalar | Visual* | NONE | NONE | --- | --- |
| Precipitate | scalar | Visual* | NONE | NONE | --- | --- |
| Silt | scalar | Visual* | NONE | NONE | --- | --- |
| Debris | scalar | Visual* | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | Visual* | NONE | NONE | --- | --- |
| Appearance | scalar | Visual* | NORML | NORML | --- | --- |
| Odor | scalar | Visual* | NORML | NORML | NORML | --- |
| 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) | 15.6 | 14.3 | 12.9 | --- |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0915618 **Received** : 11 Jul 2024
Lab Number : **02647305** **Tested** : 11 Jul 2024
Unique Number : 5812857 **Diagnosed** : 11 Jul 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: Visual)

Martin Energy Group Canada
 5531 Schummer Line
 Linwood, ON
 CA N0B 2A0
 Contact: J Wagler
 jwagler@martinenergygroup.com

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.