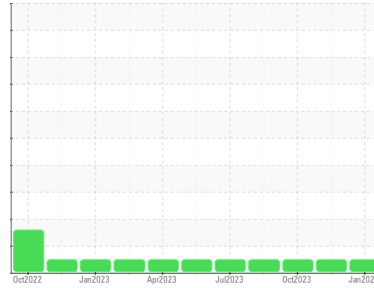




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id

2114

Component

Natural Gas Engine

Fluid

VALVOLINE PREMIUM BLUE 9200 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

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 | | WC0891053 | WC0877991 | WC0830207 |
| Sample Date | Client Info | | 18 Jan 2024 | 04 Dec 2023 | 17 Oct 2023 |
| Machine Age | kms | Client Info | 97461 | 0 | 80002 |
| Oil Age | kms | Client Info | 0 | 0 | 0 |
| Oil Changed | Client Info | | N/A | N/A | N/A |
| Sample Status | | | NORMAL | NORMAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|-------|-----------|------------|------------|----------|----------|
| Water | WC Method | >0.1 | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 | |
|-----------|--------|---------------|---------|--------------|----------|----|
| Iron | ppm | ASTM D5185(m) | >50 | 7 | 8 | 8 |
| Chromium | ppm | ASTM D5185(m) | >4 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) | >2 | <1 | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >3 | 0 | <1 | <1 |
| Aluminum | ppm | ASTM D5185(m) | >9 | 2 | 1 | 2 |
| Lead | ppm | ASTM D5185(m) | >30 | <1 | <1 | <1 |
| Copper | ppm | ASTM D5185(m) | >35 | <1 | <1 | <1 |
| Tin | ppm | ASTM D5185(m) | >4 | 0 | <1 | <1 |
| Antimony | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| 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) | | 9 | 11 | 9 |
| Barium | ppm | ASTM D5185(m) | | 0 | <1 | <1 |
| Molybdenum | ppm | ASTM D5185(m) | | 52 | 53 | 54 |
| Manganese | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | | 761 | 778 | 797 |
| Calcium | ppm | ASTM D5185(m) | | 1210 | 1214 | 1236 |
| Phosphorus | ppm | ASTM D5185(m) | | 613 | 633 | 633 |
| Zinc | ppm | ASTM D5185(m) | | 847 | 868 | 875 |
| Sulfur | ppm | ASTM D5185(m) | | 2065 | 1958 | 1939 |
| Lithium | ppm | ASTM D5185(m) | | <1 | <1 | <1 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 | |
|-----------|--------|---------------|---------|--------------|----------|---|
| Silicon | ppm | ASTM D5185(m) | >+100 | 4 | 4 | 4 |
| Sodium | ppm | ASTM D5185(m) | | 3 | 2 | 2 |
| Potassium | ppm | ASTM D5185(m) | >20 | <1 | 0 | 0 |

INFRA-RED

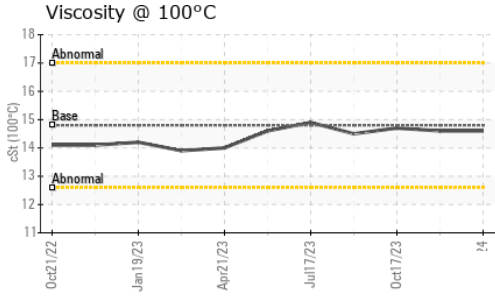
| | method | limit/base | current | history1 | history2 | |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot % | % | ASTM D7844* | | 0 | 0 | 0 |
| Nitration | Abs/cm | ASTM D7624* | >20 | 12.1 | 12.3 | 12.5 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 22.4 | 22.0 | 23.1 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 | |
|-----------|----------|-------------|---------|-------------|----------|------|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | 19.8 | 19.8 | 20.5 |



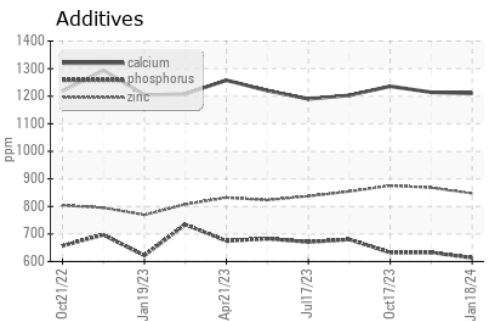
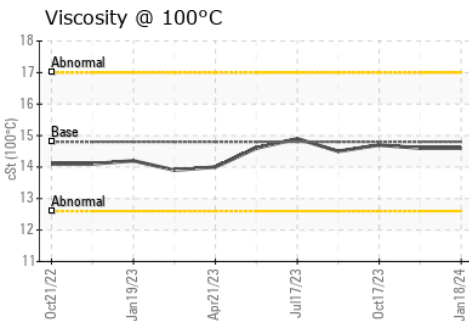
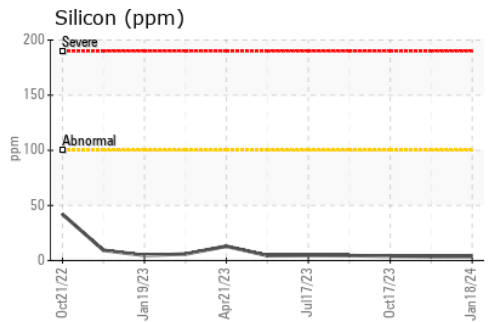
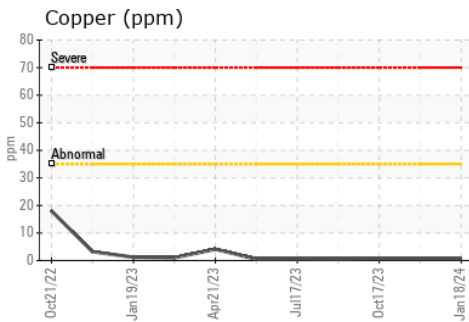
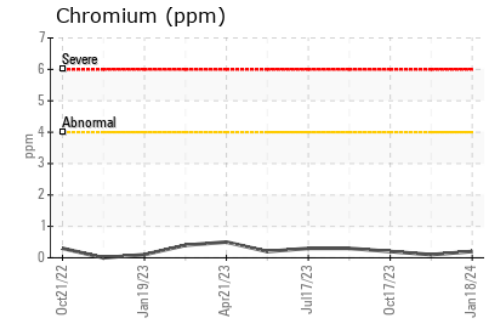
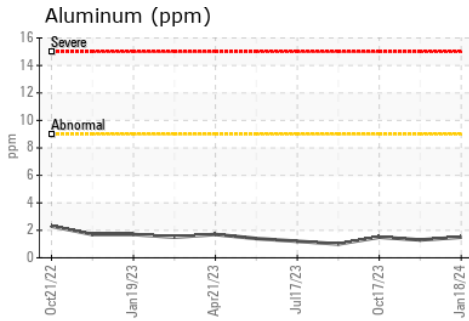
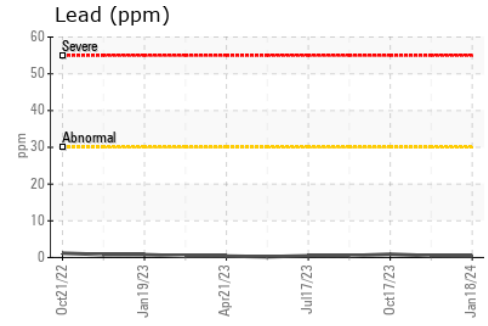
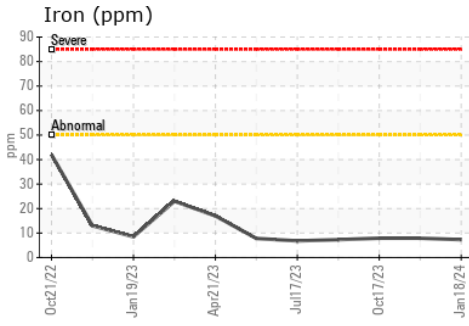
OIL ANALYSIS REPORT



| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Emulsified Water | scalar | Visual* | >0.1 | NEG | NEG |
| Free Water | scalar | Visual* | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|---------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D7279(m) | 14.8 | 14.6 | 14.7 |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0891053 **Received** : 22 Jan 2024
Lab Number : 02610259 **Diagnosed** : 23 Jan 2024
Unique Number : 5711345 **Diagnostician** : Wes Davis
Test Package : MOB 1

CITY OF HAMILTON
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 MOUNT HOPE, ON
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 jeff.parr@hamilton.ca
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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.