



# OIL ANALYSIS REPORT

|                 |                 |
|-----------------|-----------------|
| WEAR            | <b>ABNORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b>   |
| FLUID CONDITION | <b>ABNORMAL</b> |

Machine Id  
**4143L**  
 Component  
**Diesel Engine**  
 Fluid  
**SAE 10W30 (--- GAL)**

## RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

| Test           | UOM | Method      | Limit/Abn | Current            | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|----------|----------|
| Sample Number  |     | Client Info |           | <b>WC0553474</b>   | ---      | ---      |
| Sample Date    |     | Client Info |           | <b>07 Mar 2024</b> | ---      | ---      |
| Machine Age    | kms | Client Info |           | <b>183725</b>      | ---      | ---      |
| Oil Age        | kms | Client Info |           | <b>0</b>           | ---      | ---      |
| Filter Age     | kms | Client Info |           | <b>0</b>           | ---      | ---      |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | ---      | ---      |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | ---      | ---      |
| Sample Status  |     |             |           | <b>ABNORMAL</b>    | ---      | ---      |

## WEAR

Aluminum ppm levels are abnormal. Piston wear is indicated.

|          |     |               |      |             |     |     |
|----------|-----|---------------|------|-------------|-----|-----|
| Iron     | ppm | ASTM D5185(m) | >90  | <b>43</b>   | --- | --- |
| Chromium | ppm | ASTM D5185(m) | >20  | <b>2</b>    | --- | --- |
| Nickel   | ppm | ASTM D5185(m) | >2   | <b>0</b>    | --- | --- |
| Titanium | ppm | ASTM D5185(m) | >2   | <b>0</b>    | --- | --- |
| Silver   | ppm | ASTM D5185(m) | >2   | <b>0</b>    | --- | --- |
| Aluminum | ppm | ASTM D5185(m) | >20  | <b>▲ 23</b> | --- | --- |
| Lead     | ppm | ASTM D5185(m) | >40  | <b>0</b>    | --- | --- |
| Copper   | ppm | ASTM D5185(m) | >330 | <b>2</b>    | --- | --- |
| Tin      | ppm | ASTM D5185(m) | >15  | <b>0</b>    | --- | --- |
| Vanadium | ppm | ASTM D5185(m) |      | <b>0</b>    | --- | --- |

## CONTAMINATION

There is no indication of any contamination in the oil.

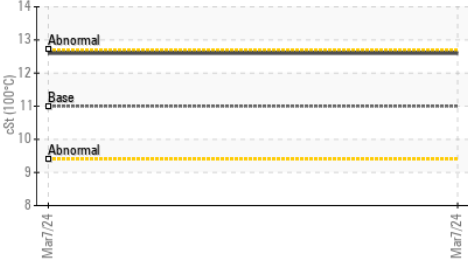
|                  |          |               |      |                |     |     |
|------------------|----------|---------------|------|----------------|-----|-----|
| Silicon          | ppm      | ASTM D5185(m) | >25  | <b>6</b>       | --- | --- |
| Potassium        | ppm      | ASTM D5185(m) | >20  | <b>20</b>      | --- | --- |
| Fuel             |          | WC Method     | >3.0 | <b>&lt;1.0</b> | --- | --- |
| Water            |          | WC Method     | >0.2 | <b>NEG</b>     | --- | --- |
| Glycol           | %        | ASTM D7922*   |      | <b>0.0</b>     | --- | --- |
| Soot %           | %        | ASTM D7844*   | >6   | <b>0.6</b>     | --- | --- |
| Nitration        | Abs/cm   | ASTM D7624*   | >20  | <b>12.0</b>    | --- | --- |
| Sulfation        | Abs/.1mm | ASTM D7415*   | >30  | <b>26.6</b>    | --- | --- |
| Emulsified Water | scalar   | Visual*       | >0.2 | <b>NEG</b>     | --- | --- |

## FLUID CONDITION

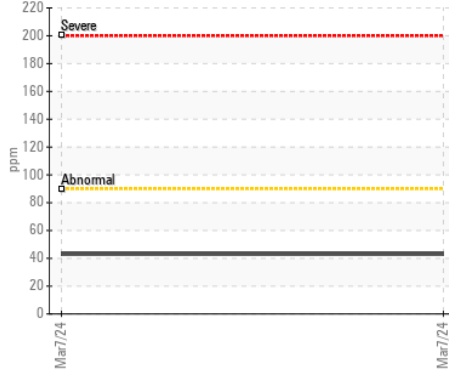
Viscosity of sample indicates oil is within SAE 40 range, advise investigate. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

|              |          |               |      |               |     |     |
|--------------|----------|---------------|------|---------------|-----|-----|
| Sodium       | ppm      | ASTM D5185(m) | >228 | <b>3</b>      | --- | --- |
| Boron        | ppm      | ASTM D5185(m) |      | <b>52</b>     | --- | --- |
| Barium       | ppm      | ASTM D5185(m) |      | <b>0</b>      | --- | --- |
| Molybdenum   | ppm      | ASTM D5185(m) |      | <b>80</b>     | --- | --- |
| Manganese    | ppm      | ASTM D5185(m) |      | <b>&lt;1</b>  | --- | --- |
| Magnesium    | ppm      | ASTM D5185(m) |      | <b>728</b>    | --- | --- |
| Calcium      | ppm      | ASTM D5185(m) |      | <b>1541</b>   | --- | --- |
| Phosphorus   | ppm      | ASTM D5185(m) |      | <b>688</b>    | --- | --- |
| Zinc         | ppm      | ASTM D5185(m) |      | <b>823</b>    | --- | --- |
| Sulfur       | ppm      | ASTM D5185(m) |      | <b>2175</b>   | --- | --- |
| Oxidation    | Abs/.1mm | ASTM D7414*   | >25  | <b>22.7</b>   | --- | --- |
| Visc @ 100°C | cSt      | ASTM D7279(m) | 11.0 | <b>▲ 12.6</b> | --- | --- |

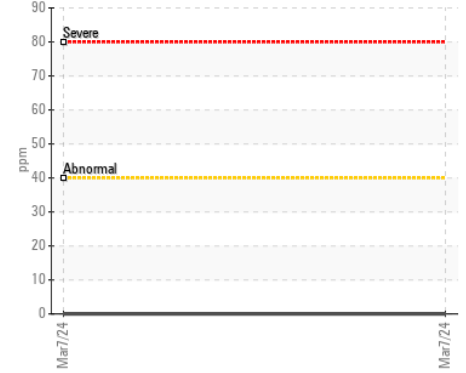
▲ Viscosity @ 100°C



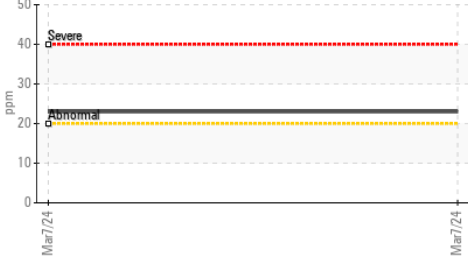
Iron (ppm)



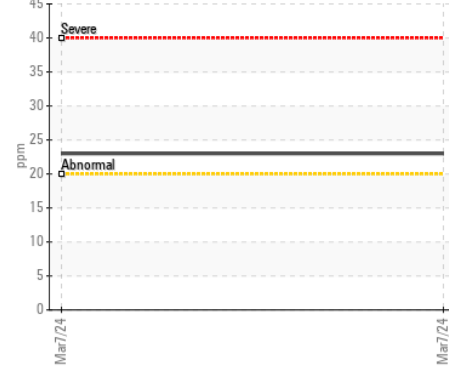
Lead (ppm)



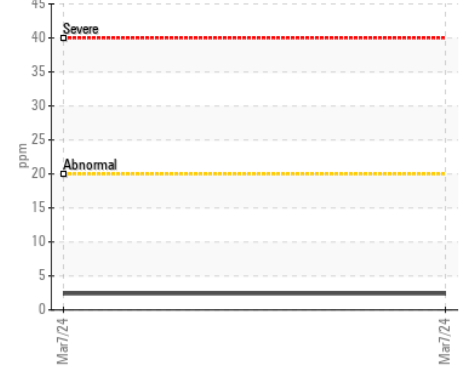
▲ Aluminum (ppm)



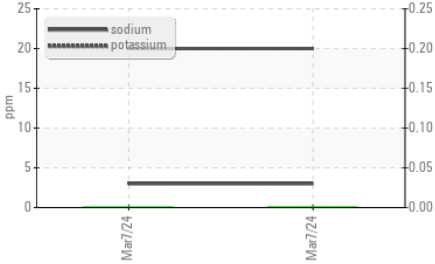
▲ Aluminum (ppm)



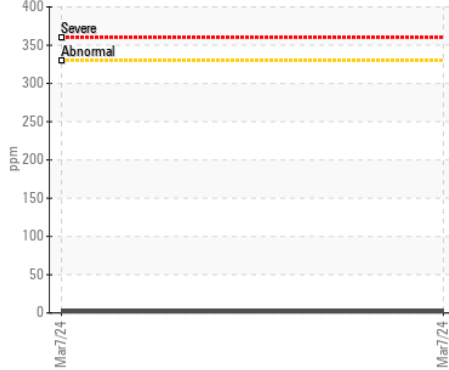
Chromium (ppm)



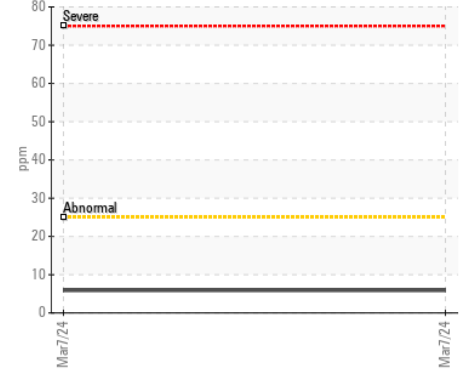
Glycol Contamination



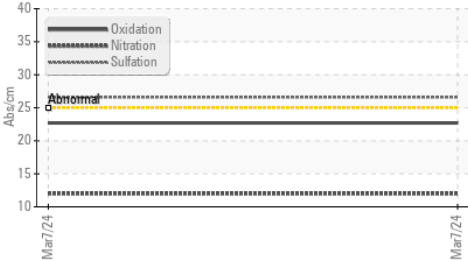
Copper (ppm)



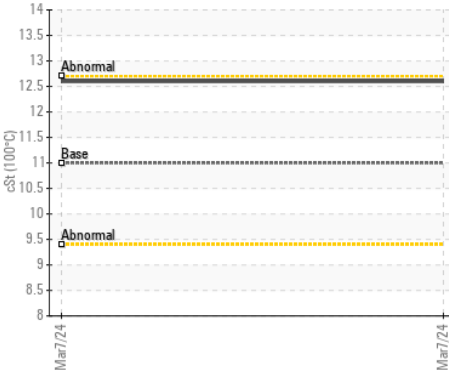
Silicon (ppm)



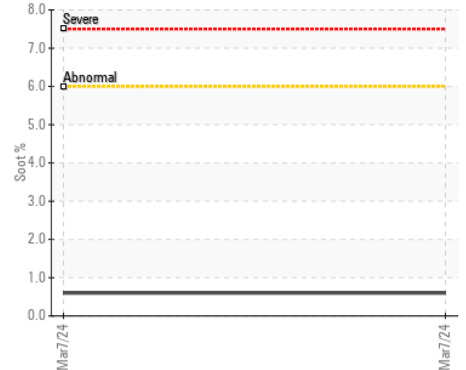
FT-IR (Direct Trend)



▲ Viscosity @ 100°C



Soot %



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0553474  
**Lab Number** : 02640670  
**Unique Number** : 5789832  
**Test Package** : MOB 1 ( Additional Tests: Glycol )

**RUSH TRUCK CENTRES OF CANADA**  
 77 BELLEVUE DR  
 BELLEVILLE, ON  
 CA K8N 4Z5  
 Contact: Service Manager  
 LBRETT@RUSHTRUCKCENTRES.CA

**Received** : 10 Jun 2024  
**Tested** : 11 Jun 2024  
**Diagnosed** : 11 Jun 2024 - Kevin Marson

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.

T:  
F: