



# OIL ANALYSIS REPORT

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

Area  
**4900 series**  
 Machine Id  
**Navistar 4949**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 10W30 (40 LTR)**

## RECOMMENDATION

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>WC0915471</b>   | WC0879088   | WC0753928   |
| Sample Date    |     | Client Info |           | <b>18 May 2024</b> | 10 Nov 2023 | 02 Dec 2022 |
| Machine Age    | mls | Client Info |           | <b>1544878</b>     | 146515      | 129640      |
| Oil Age        | mls | Client Info |           | <b>8363</b>        | 0           | 6244        |
| Filter Age     | mls | Client Info |           | <b>8363</b>        | 0           | 6244        |
| Oil Changed    |     | Client Info |           | <b>N/A</b>         | Changed     | Changed     |
| Filter Changed |     | Client Info |           | <b>N/A</b>         | Changed     | Changed     |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## WEAR

All component wear rates are normal.

|          |     |               |      |           |    |    |
|----------|-----|---------------|------|-----------|----|----|
| Iron     | ppm | ASTM D5185(m) | >100 | <b>14</b> | 15 | 8  |
| Chromium | ppm | ASTM D5185(m) | >20  | <b>1</b>  | 1  | <1 |
| Nickel   | ppm | ASTM D5185(m) | >4   | <b>0</b>  | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) |      | <b>0</b>  | 0  | <1 |
| Silver   | ppm | ASTM D5185(m) | >3   | <b>0</b>  | <1 | 0  |
| Aluminum | ppm | ASTM D5185(m) | >20  | <b>3</b>  | 4  | 2  |
| Lead     | ppm | ASTM D5185(m) | >40  | <b>0</b>  | <1 | <1 |
| Copper   | ppm | ASTM D5185(m) | >330 | <b>1</b>  | <1 | <1 |
| Tin      | ppm | ASTM D5185(m) | >15  | <b>0</b>  | 0  | 0  |
| Vanadium | ppm | ASTM D5185(m) |      | <b>0</b>  | 0  | 0  |

## CONTAMINATION

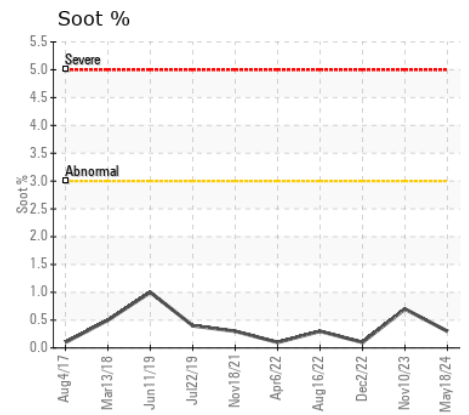
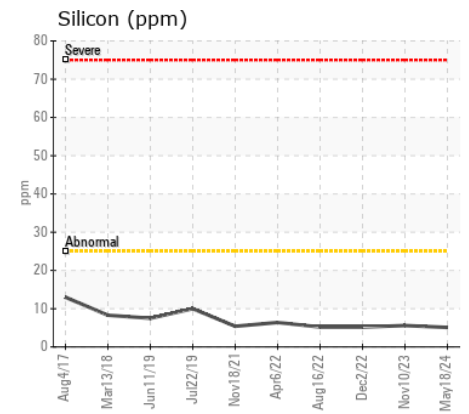
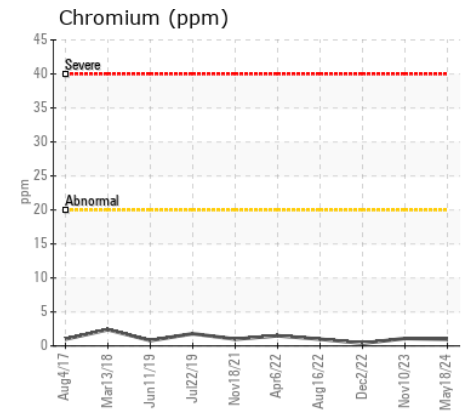
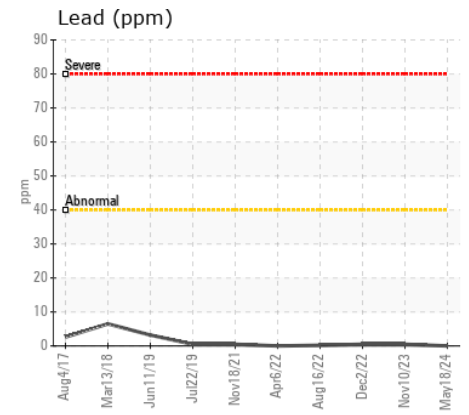
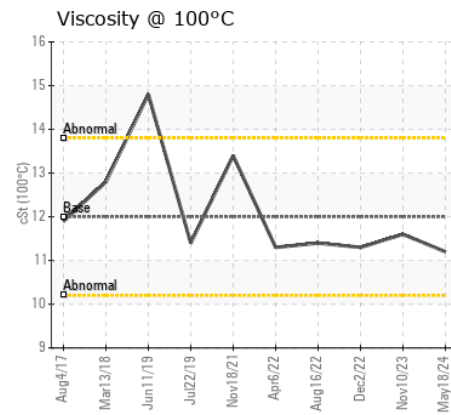
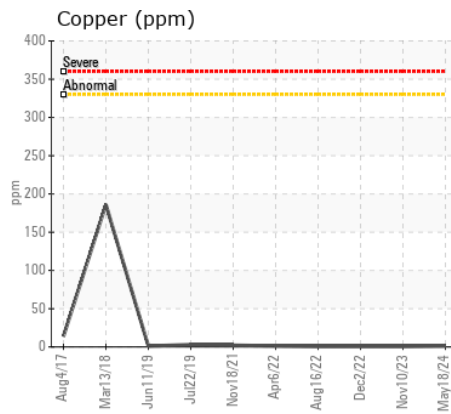
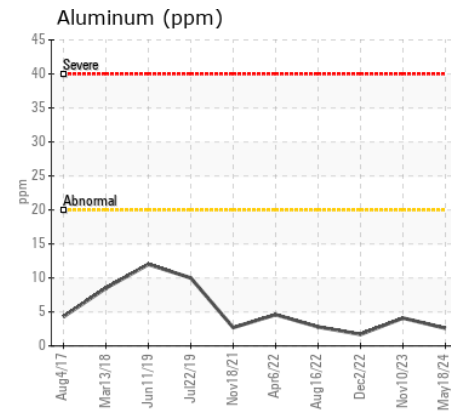
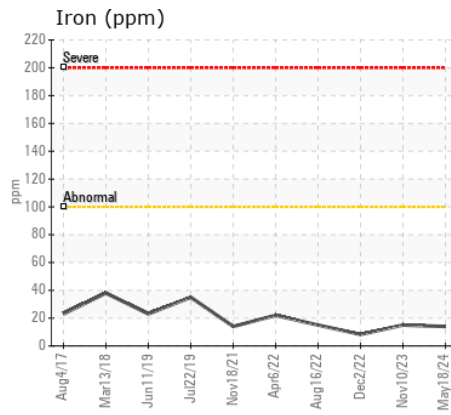
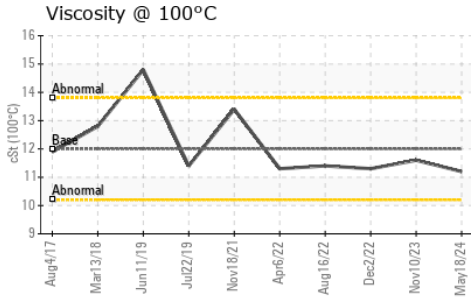
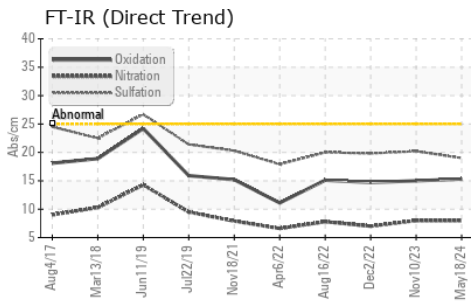
There is no indication of any contamination in the oil.

|                  |          |               |      |                |      |      |
|------------------|----------|---------------|------|----------------|------|------|
| Silicon          | ppm      | ASTM D5185(m) | >25  | <b>5</b>       | 6    | 5    |
| Potassium        | ppm      | ASTM D5185(m) | >20  | <b>1</b>       | <1   | <1   |
| Fuel             |          | WC Method     | >5   | <b>&lt;1.0</b> | <1.0 | <1.0 |
| Water            |          | WC Method     | >0.2 | <b>NEG</b>     | NEG  | NEG  |
| Glycol           |          | WC Method     |      | <b>NEG</b>     | NEG  | NEG  |
| Soot %           | %        | ASTM D7844*   | >3   | <b>0.3</b>     | 0.7  | 0.1  |
| Nitration        | Abs/cm   | ASTM D7624*   | >20  | <b>8.0</b>     | 8.0  | 7.0  |
| Sulfation        | Abs/.1mm | ASTM D7415*   | >30  | <b>19.0</b>    | 20.2 | 19.8 |
| Emulsified Water | scalar   | Visual*       | >0.2 | <b>NEG</b>     | NEG  | NEG  |

## FLUID CONDITION

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

|              |          |               |       |              |      |      |
|--------------|----------|---------------|-------|--------------|------|------|
| Sodium       | ppm      | ASTM D5185(m) |       | <b>2</b>     | 2    | 2    |
| Boron        | ppm      | ASTM D5185(m) | 2     | <b>1</b>     | 2    | 1    |
| Barium       | ppm      | ASTM D5185(m) | 0     | <b>0</b>     | 0    | 0    |
| Molybdenum   | ppm      | ASTM D5185(m) | 50    | <b>62</b>    | 60   | 60   |
| Manganese    | ppm      | ASTM D5185(m) | 0     | <b>&lt;1</b> | 0    | <1   |
| Magnesium    | ppm      | ASTM D5185(m) | 950   | <b>1008</b>  | 972  | 962  |
| Calcium      | ppm      | ASTM D5185(m) | 1050  | <b>1088</b>  | 1039 | 1116 |
| Phosphorus   | ppm      | ASTM D5185(m) | 995   | <b>1036</b>  | 1032 | 1078 |
| Zinc         | ppm      | ASTM D5185(m) | 1180  | <b>1217</b>  | 1208 | 1193 |
| Sulfur       | ppm      | ASTM D5185(m) | 2600  | <b>2681</b>  | 2604 | 2671 |
| Oxidation    | Abs/.1mm | ASTM D7414*   | >25   | <b>15.3</b>  | 15.0 | 14.7 |
| Visc @ 100°C | cSt      | ASTM D7279(m) | 12.00 | <b>11.2</b>  | 11.6 | 11.3 |



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0915471 **Received** : 06 Jun 2024  
**Lab Number** : 02640078 **Tested** : 06 Jun 2024  
**Unique Number** : 5789240 **Diagnosed** : 06 Jun 2024 - Wes Davis  
**Test Package** : MOB 1

**MANITOU LIN TRANSPORT**  
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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.