



|                 |        |
|-----------------|--------|
| WEAR            | NORMAL |
| CONTAMINATION   | NORMAL |
| FLUID CONDITION | NORMAL |

Machine Id  
**INTERNATIONAL 3023076**  
Component  
**Diesel Engine**  
Fluid  
**VALVOLINE 15W40 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>IL0034236</b>   | IL05715701  | IL05490799  |
| Sample Date    |     | Client Info |           | <b>20 Dec 2023</b> | 18 Nov 2022 | 01 Feb 2022 |
| Machine Age    | hrs | Client Info |           | <b>93419</b>       | 79569       | 67510       |
| Oil Age        | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | N/A         | N/A         |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | N/A         | N/A         |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

### WEAR

All component wear rates are normal.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >100 | <b>38</b>    | 40   | 38   |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>2</b>     | 1    | 2    |
| Nickel       | ppm    | ASTM D5185m | >4   | <b>&lt;1</b> | <1   | 0    |
| Titanium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | <1   | <1   |
| Silver       | ppm    | ASTM D5185m | >3   | <b>0</b>     | 0    | 0    |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>44</b>    | 16   | 23   |
| Lead         | ppm    | ASTM D5185m | >40  | <b>2</b>     | <1   | <1   |
| Copper       | ppm    | ASTM D5185m | >330 | <b>&lt;1</b> | 1    | 2    |
| Tin          | ppm    | ASTM D5185m | >15  | <b>1</b>     | 0    | <1   |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | 0    |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |

### CONTAMINATION

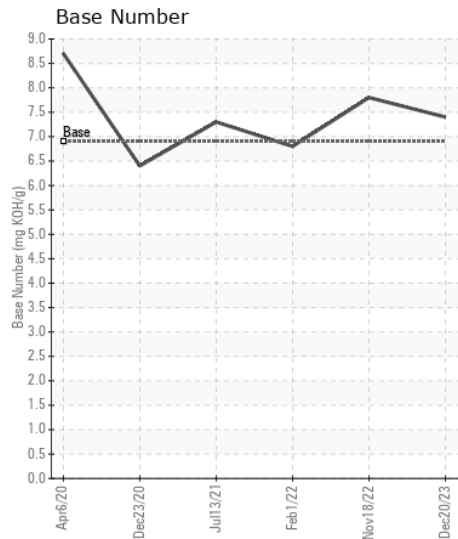
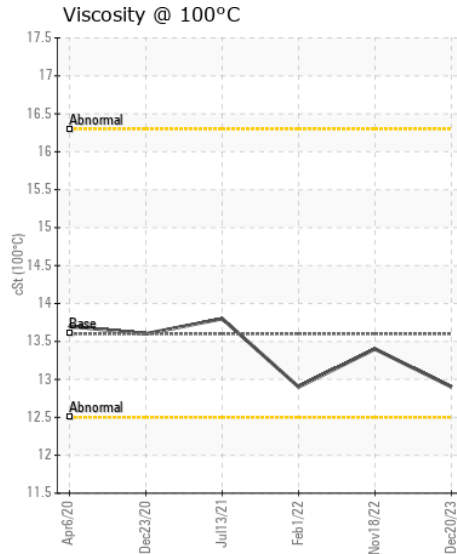
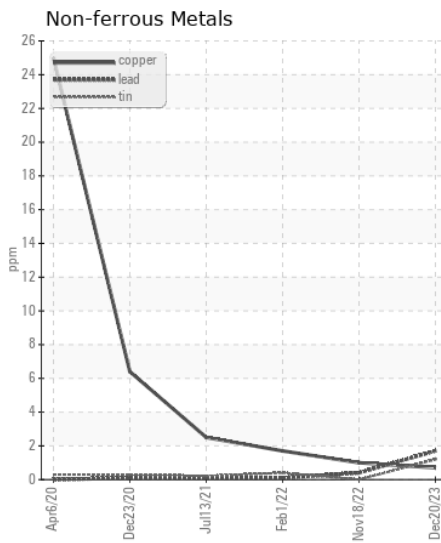
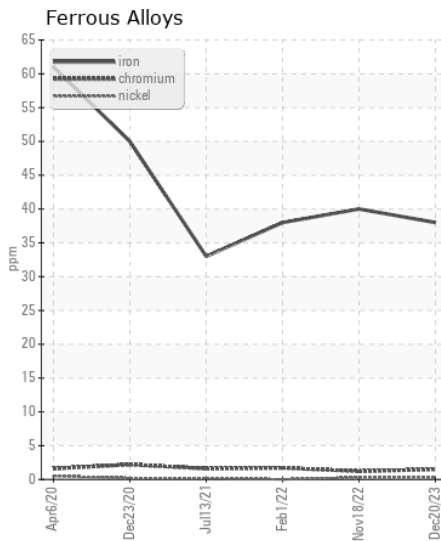
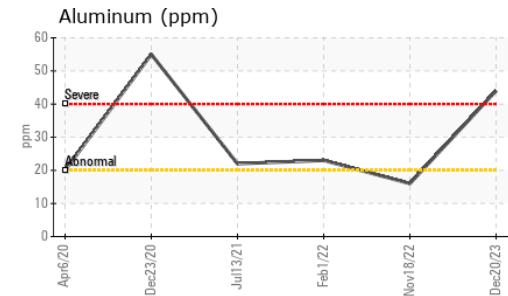
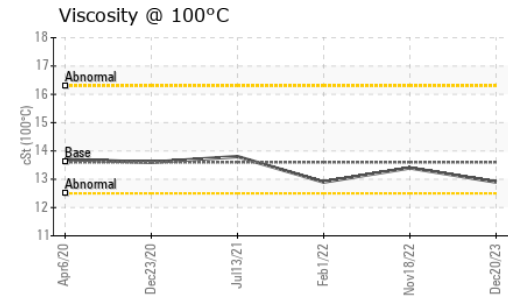
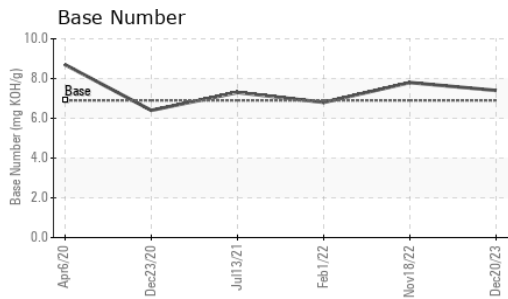
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>8</b>       | 8     | 11    |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>80</b>      | 15    | 51    |
| 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>     | 0.6   | 0.7   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>8.2</b>     | 12.9  | 13.3  |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>20.8</b>    | 24.5  | 26.8  |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Emulsified Water | scalar   | *Visual     | >0.2  | <b>NEG</b>     | NEG   | NEG   |

### FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

|                  |          |             |      |              |      |      |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium           | ppm      | ASTM D5185m |      | <b>2</b>     | <1   | 0    |
| Boron            | ppm      | ASTM D5185m | 39   | <b>222</b>   | 49   | 52   |
| Barium           | ppm      | ASTM D5185m | 1    | <b>0</b>     | 0    | 0    |
| Molybdenum       | ppm      | ASTM D5185m | 49   | <b>84</b>    | 73   | 84   |
| Manganese        | ppm      | ASTM D5185m | 1    | <b>&lt;1</b> | <1   | <1   |
| Magnesium        | ppm      | ASTM D5185m | 616  | <b>580</b>   | 782  | 734  |
| Calcium          | ppm      | ASTM D5185m | 1554 | <b>1456</b>  | 1334 | 1503 |
| Phosphorus       | ppm      | ASTM D5185m | 899  | <b>1031</b>  | 714  | 756  |
| Zinc             | ppm      | ASTM D5185m | 1069 | <b>1276</b>  | 921  | 925  |
| Sulfur           | ppm      | ASTM D5185m | 2624 | <b>3421</b>  | 2876 | 2172 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>16.3</b>  | 22.3 | 24.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 6.9  | <b>7.4</b>   | 7.8  | 6.8  |
| Visc @ 100°C     | cSt      | ASTM D445   | 13.6 | <b>12.9</b>  | 13.4 | 12.9 |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : IL0034236 **Received** : 12 Jan 2024  
**Lab Number** : 06058958 **Diagnosed** : 12 Jan 2024  
**Unique Number** : 10830340 **Diagnostician** : Wes Davis  
**Test Package** : FLEET

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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