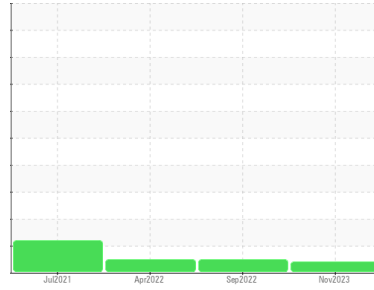




# PROBLEM SUMMARY

Sample Rating Trend



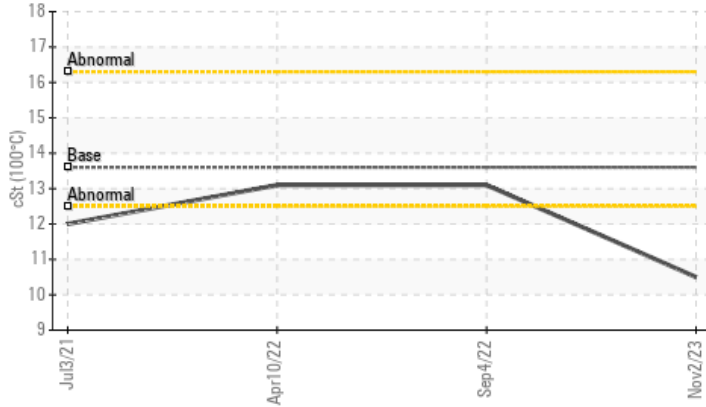
## VISCOSITY



Machine Id  
**9110339**  
 Component  
**Diesel Engine**  
 Fluid  
**VALVOLINE 15W40 (--- GAL)**

### COMPONENT CONDITION SUMMARY

▲ Viscosity @ 100°C



### RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

### PROBLEMATIC TEST RESULTS

| Sample Status |     |           |      | ATTENTION | NORMAL | NORMAL |
|---------------|-----|-----------|------|-----------|--------|--------|
| Visc @ 100°C  | cSt | ASTM D445 | 13.6 | ▲ 10.5    | 13.1   | 13.1   |

Customer Id: IDETAMFL  
 Sample No.: IL0034223  
 Lab Number: 06013013  
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Jonathan Hester +1 919-379-4092 x4092  
[jhester@wearcheckusa.com](mailto:jhester@wearcheckusa.com)

To change component or sample information:  
 Customer Service +1 1-800-237-1369  
[customerservice@wearcheck.com](mailto:customerservice@wearcheck.com)

## RECOMMENDED ACTIONS

There are no recommended actions for this sample.

## HISTORICAL DIAGNOSIS

### NORMAL



#### 04 Sep 2022 Diag: Wes Davis

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

[view report](#)



### NORMAL



#### 10 Apr 2022 Diag: Don Baldrige

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

[view report](#)



### GLYCOL



#### 03 Jul 2021 Diag: Jonathan Hester

No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. Metal levels are typical for a new component breaking in. Sodium and/or potassium levels are high. Fuel content negligible. Test for glycol is negative. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

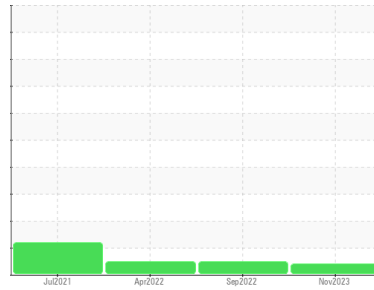
[view report](#)





# OIL ANALYSIS REPORT

Sample Rating Trend



## VISCOSITY



Machine Id  
**9110339**  
 Component  
**Diesel Engine**  
 Fluid  
**VALVOLINE 15W40 (--- GAL)**

### DIAGNOSIS

#### Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

#### Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

| SAMPLE INFORMATION |             | method      | limit/base | current            | history1    | history2    |
|--------------------|-------------|-------------|------------|--------------------|-------------|-------------|
| Sample Number      | Client Info |             |            | <b>IL0034223</b>   | IL05644071  | IL05515255  |
| Sample Date        | Client Info |             |            | <b>02 Nov 2023</b> | 04 Sep 2022 | 10 Apr 2022 |
| Machine Age        | mls         | Client Info |            | <b>249921</b>      | 152601      | 111359      |
| Oil Age            | mls         | Client Info |            | <b>23477</b>       | 0           | 0           |
| Oil Changed        | Client Info |             |            | <b>Changed</b>     | N/A         | N/A         |
| Sample Status      |             |             |            | <b>ATTENTION</b>   | NORMAL      | NORMAL      |

| CONTAMINATION |           | method | limit/base | current    | history1 | history2 |
|---------------|-----------|--------|------------|------------|----------|----------|
| Water         | WC Method | >0.2   |            | <b>NEG</b> | NEG      | NEG      |
| Glycol        | WC Method |        |            | <b>NEG</b> | NEG      | NEG      |

| WEAR METALS |     | method      | limit/base | current      | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| Iron        | ppm | ASTM D5185m | >100       | <b>12</b>    | 20       | 19       |
| Chromium    | ppm | ASTM D5185m | >20        | <b>&lt;1</b> | 2        | 2        |
| Nickel      | ppm | ASTM D5185m | >4         | <b>0</b>     | 0        | 0        |
| Titanium    | ppm | ASTM D5185m |            | <b>&lt;1</b> | <1       | <1       |
| Silver      | ppm | ASTM D5185m | >3         | <b>0</b>     | <1       | <1       |
| Aluminum    | ppm | ASTM D5185m | >20        | <b>3</b>     | 7        | 8        |
| Lead        | ppm | ASTM D5185m | >40        | <b>1</b>     | 4        | 4        |
| Copper      | ppm | ASTM D5185m | >330       | <b>1</b>     | 2        | 3        |
| Tin         | ppm | ASTM D5185m | >15        | <b>&lt;1</b> | <1       | 1        |
| Antimony    | ppm | ASTM D5185m |            | <b>---</b>   | ---      | ---      |
| Vanadium    | ppm | ASTM D5185m |            | <b>&lt;1</b> | 0        | 0        |
| Cadmium     | ppm | ASTM D5185m |            | <b>0</b>     | 0        | 0        |

| ADDITIVES  |     | method      | limit/base | current      | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron      | ppm | ASTM D5185m | 39         | <b>41</b>    | 10       | 67       |
| Barium     | ppm | ASTM D5185m | 1          | <b>0</b>     | <1       | 0        |
| Molybdenum | ppm | ASTM D5185m | 49         | <b>90</b>    | 74       | 89       |
| Manganese  | ppm | ASTM D5185m | 1          | <b>&lt;1</b> | <1       | <1       |
| Magnesium  | ppm | ASTM D5185m | 616        | <b>508</b>   | 668      | 651      |
| Calcium    | ppm | ASTM D5185m | 1554       | <b>1223</b>  | 1221     | 1385     |
| Phosphorus | ppm | ASTM D5185m | 899        | <b>721</b>   | 657      | 693      |
| Zinc       | ppm | ASTM D5185m | 1069       | <b>924</b>   | 864      | 921      |
| Sulfur     | ppm | ASTM D5185m | 2624       | <b>2234</b>  | 2285     | 1887     |

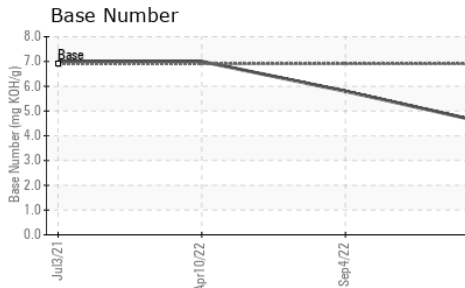
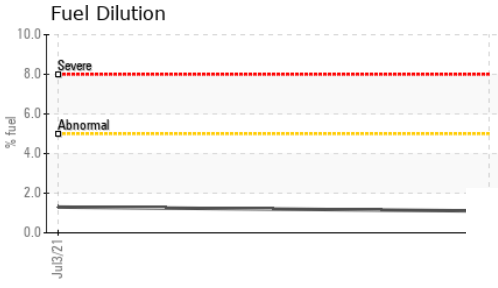
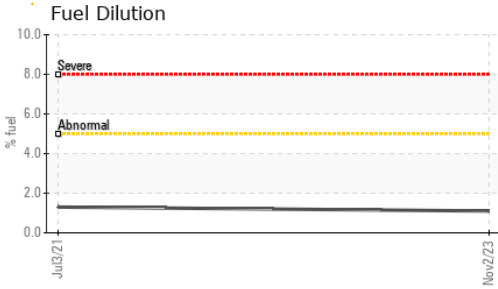
| CONTAMINANTS |     | method      | limit/base | current      | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon      | ppm | ASTM D5185m | >25        | <b>7</b>     | 8        | 9        |
| Sodium       | ppm | ASTM D5185m |            | <b>&lt;1</b> | <1       | 2        |
| Potassium    | ppm | ASTM D5185m | >20        | <b>4</b>     | 12       | 21       |
| Fuel         | %   | ASTM D3524  | >5         | <b>1.1</b>   | <1.0     | <1.0     |

| INFRA-RED |          | method      | limit/base | current     | history1 | history2 |
|-----------|----------|-------------|------------|-------------|----------|----------|
| Soot %    | %        | *ASTM D7844 | >3         | <b>0.3</b>  | 0.6      | 0.5      |
| Nitration | Abs/cm   | *ASTM D7624 | >20        | <b>9.2</b>  | 12.6     | 11.9     |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30        | <b>22.4</b> | 26.3     | 24.7     |

| FLUID DEGRADATION |          | method      | limit/base | current     | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation         | Abs/.1mm | *ASTM D7414 | >25        | <b>17.6</b> | 23.2     | 20.5     |
| Base Number (BN)  | mg KOH/g | ASTM D2896  | 6.9        | <b>4.5</b>  | 5.8      | 7.0      |



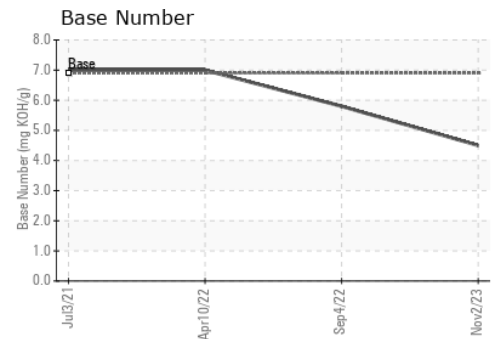
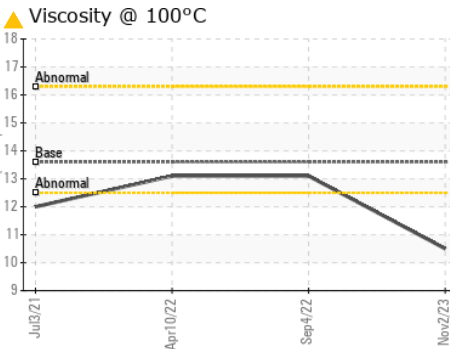
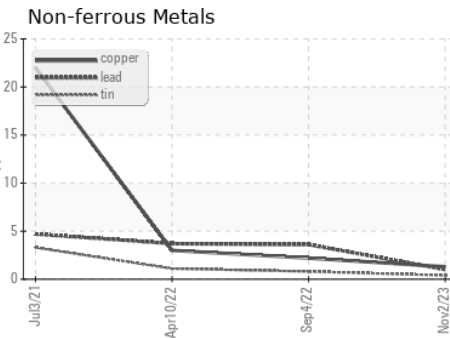
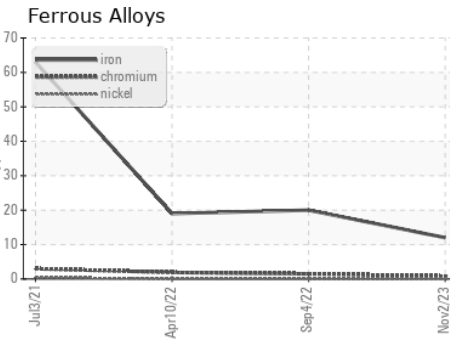
# OIL ANALYSIS REPORT



| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | NONE     |
| Precipitate      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Silt             | scalar | *Visual    | NONE    | NONE     | NONE     |
| Debris           | scalar | *Visual    | NONE    | NONE     | NONE     |
| Sand/Dirt        | scalar | *Visual    | NONE    | NONE     | NONE     |
| Appearance       | scalar | *Visual    | NORML   | 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 D445  | 13.6    | ▲ 10.5   | 13.1     |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : IL0034223 **Received** : 20 Nov 2023  
**Lab Number** : 06013013 **Diagnosed** : 29 Nov 2023  
**Unique Number** : 10752157 **Diagnostician** : Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: FuelDilution, PercentFuel )

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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