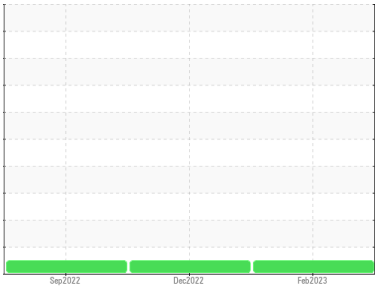
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**423**
Component
**Diesel Engine**
Fluid
**NOT GIVEN (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

**Wear**
All component wear rates are normal.

**Contamination**
There is no indication of any contamination in the oil.

**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.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC05828242** | WC05747397 | WC0502565 |
| Sample Date | | Client Info | | **28 Feb 2023** | 13 Dec 2022 | 19 Sep 2022 |
| Machine Age | mls | Client Info | | **75475** | 47925 | 30790 |
| Oil Age | mls | Client Info | | **26832** | 47925 | 30790 |
| Oil Changed | | Client Info | | **Not Changd** | Changed | Not Changd |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Glycol | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **30** | 84 | 73 |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | 2 | 1 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | 1 | 1 |
| Titanium | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| Silver | ppm | ASTM D5185m | >3 | **<1** | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **10** | 39 | 46 |
| Lead | ppm | ASTM D5185m | >40 | **2** | 11 | 25 |
| Copper | ppm | ASTM D5185m | >330 | **28** | 126 | 141 |
| Tin | ppm | ASTM D5185m | >15 | **2** | 8 | 8 |
| Vanadium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **0** | 13 | 19 |
| Barium | ppm | ASTM D5185m | | **0** | 5 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **72** | 113 | 131 |
| Manganese | ppm | ASTM D5185m | | **1** | 7 | 9 |
| Magnesium | ppm | ASTM D5185m | | **919** | 805 | 762 |
| Calcium | ppm | ASTM D5185m | | **1249** | 1427 | 1558 |
| Phosphorus | ppm | ASTM D5185m | | **991** | 769 | 794 |
| Zinc | ppm | ASTM D5185m | | **1317** | 1000 | 881 |
| Sulfur | ppm | ASTM D5185m | | **3189** | 2553 | 2470 |

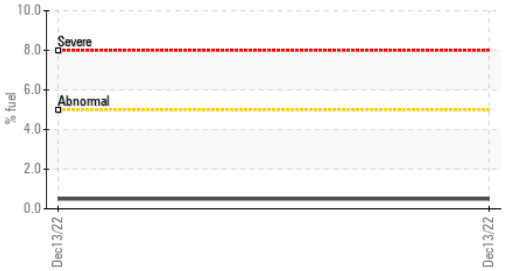
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **8** | 34 | 49 |
| Sodium | ppm | ASTM D5185m | | **3** | 6 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | **19** | 88 | 109 |
| Fuel | % | ASTM D3524 | >5 | **<1.0** | 0.5 | <1.0 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.5** | 0.6 | 0.6 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **10.8** | 14.2 | 15.9 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **22.5** | 25.9 | 29.0 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **20.2** | 29.0 | 34.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **6.4** | 5.2 | 5.2 |

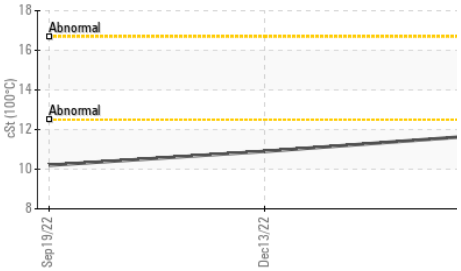
# OIL ANALYSIS REPORT

Fuel Dilution




Fuel Dilution


Viscosity @ 100°C

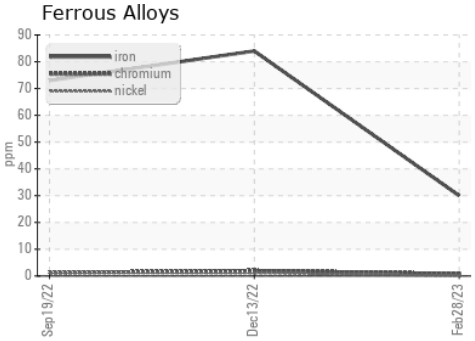



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Appearance | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Odor | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

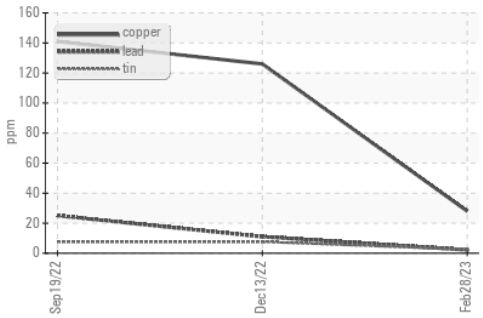
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | | **11.7** | 10.9 | 10.2 |

## GRAPHS

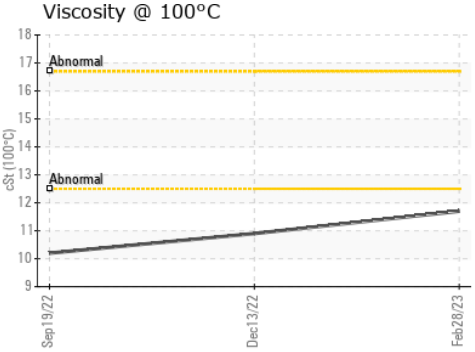
Ferrous Alloys



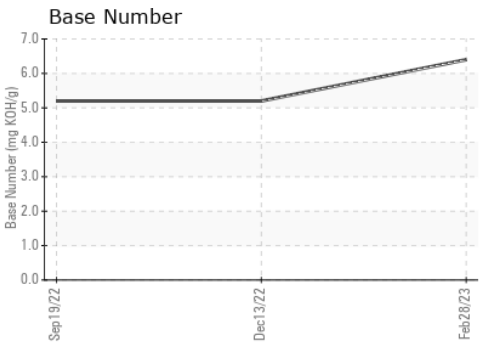

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC05828242 **Received** : 24 Apr 2023
**Lab Number** : 05828242 **Diagnosed** : 26 Apr 2023
**Unique Number** : 10441735 **Diagnostician** : Sean Felton
**Test Package** : FLEET ( Additional Tests: FuelDilution )

*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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