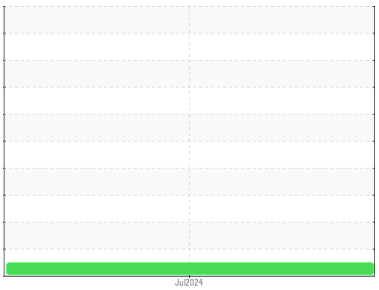
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Area
**MINING**
Machine Id
**ME-586 JOHN DEERE 944K 1DW944KXPNL703686**
Component
**Diesel Engine**
Fluid
**SHELL RIMULA SUPER SAE 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**
The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

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

**Contamination**
Light fuel dilution occurring. No other contaminants were detected in the oil.

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

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0942056** | --- | --- |
| Sample Date | | Client Info | | **02 Jul 2024** | --- | --- |
| Machine Age | hrs | Client Info | | **3191** | --- | --- |
| Oil Age | hrs | Client Info | | **0** | --- | --- |
| Oil Changed | | Client Info | | **Changed** | --- | --- |
| Sample Status | | | | **NORMAL** | --- | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.21 | **NEG** | --- | --- |
| Glycol | | WC Method | | **NEG** | --- | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >51 | **18** | --- | --- |
| Chromium | ppm | ASTM D5185(m) | >11 | **<1** | --- | --- |
| Nickel | ppm | ASTM D5185(m) | >5 | **<1** | --- | --- |
| Titanium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Silver | ppm | ASTM D5185(m) | >3 | **0** | --- | --- |
| Aluminum | ppm | ASTM D5185(m) | >31 | **4** | --- | --- |
| Lead | ppm | ASTM D5185(m) | >26 | **6** | --- | --- |
| Copper | ppm | ASTM D5185(m) | >26 | **7** | --- | --- |
| Tin | ppm | ASTM D5185(m) | >4 | **2** | --- | --- |
| Antimony | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Vanadium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Beryllium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Cadmium | ppm | ASTM D5185(m) | | **0** | --- | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | | **14** | --- | --- |
| Barium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Molybdenum | ppm | ASTM D5185(m) | | **70** | --- | --- |
| Manganese | ppm | ASTM D5185(m) | | **<1** | --- | --- |
| Magnesium | ppm | ASTM D5185(m) | | **34** | --- | --- |
| Calcium | ppm | ASTM D5185(m) | 2840 | **2184** | --- | --- |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | **934** | --- | --- |
| Zinc | ppm | ASTM D5185(m) | 1270 | **1100** | --- | --- |
| Sulfur | ppm | ASTM D5185(m) | 2829 | **3102** | --- | --- |
| Lithium | ppm | ASTM D5185(m) | | **<1** | --- | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >22 | **4** | --- | --- |
| Sodium | ppm | ASTM D5185(m) | >31 | **4** | --- | --- |
| Potassium | ppm | ASTM D5185(m) | >20 | **4** | --- | --- |
| Fuel | % | ASTM D7593* | >8.0 | **1** | --- | --- |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | >3 | **0.4** | --- | --- |
| Nitration | Abs/cm | ASTM D7624* | >20 | **10.2** | --- | --- |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **20.9** | --- | --- |

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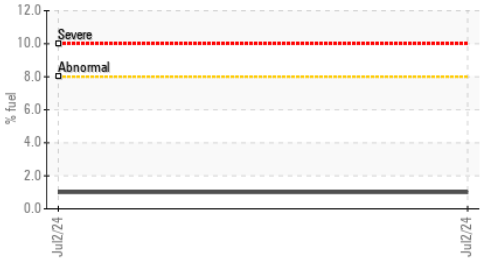
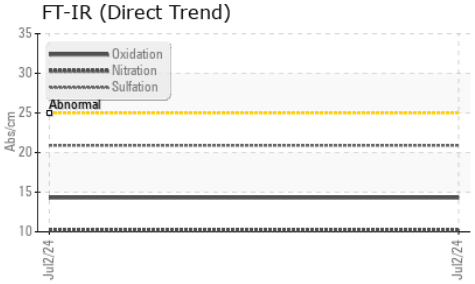
Fuel Dilution




FT-IR (Direct Trend)




Viscosity @ 100°C

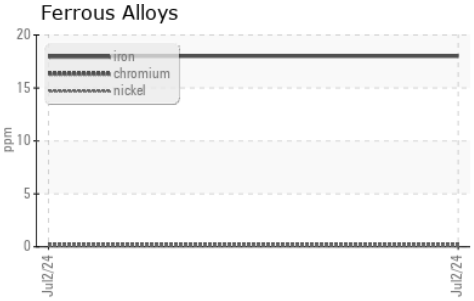

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **14.3** | --- | --- |

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | Visual* | NONE | **LIGHT** | --- | --- |
| Yellow Metal | scalar | Visual* | NONE | **NONE** | --- | --- |
| Precipitate | scalar | Visual* | NONE | **NONE** | --- | --- |
| Silt | scalar | Visual* | NONE | **NONE** | --- | --- |
| Debris | scalar | Visual* | NONE | **NONE** | --- | --- |
| Sand/Dirt | scalar | Visual* | NONE | **NONE** | --- | --- |
| Appearance | scalar | Visual* | NORML | **NORML** | --- | --- |
| Odor | scalar | Visual* | NORML | **NORML** | --- | --- |
| Emulsified Water | scalar | Visual* | >0.21 | **NEG** | --- | --- |
| Free Water | scalar | Visual* | | **NEG** | --- | --- |

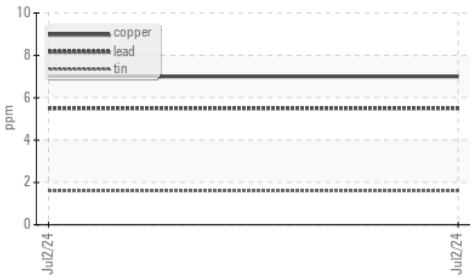
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.5 | **13.1** | --- | --- |

## GRAPHS

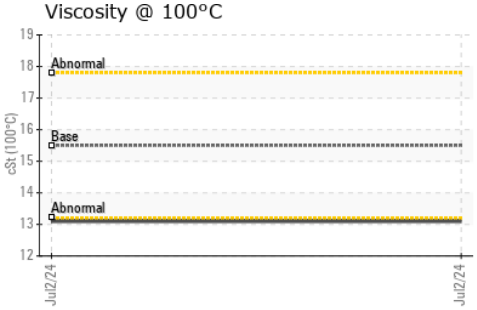
Ferrous Alloys




Non-ferrous Metals




Viscosity @ 100°C




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0942056 **Received** : 08 Jul 2024
**Lab Number** : 02646054 **Tested** : 09 Jul 2024
**Unique Number** : 5811606 **Diagnosed** : 09 Jul 2024 - Wes Davis
**Test Package** : CONST ( Additional Tests: FuelDilution, PercentFuel, Visual )

*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.*

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