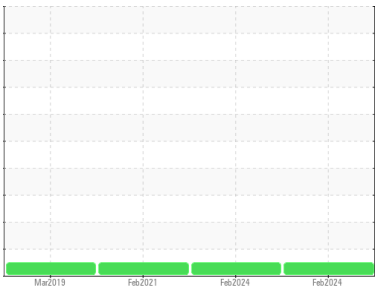
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
## WIRTGEN 621
Component
**Diesel Engine**
Fluid
**DIESEL ENGINE OIL SAE 15W40 (9 GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

**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 | | **RW0005163** | RW0005473 | RW0001971 |
| Sample Date | | Client Info | | **14 Feb 2024** | 14 Feb 2024 | 25 Feb 2021 |
| Machine Age | hrs | Client Info | | **5377** | 5346 | 4207 |
| Oil Age | hrs | Client Info | | **441** | 199 | 0 |
| Oil Changed | | Client Info | | **Changed** | Changed | N/A |
| Sample Status | | | | **NORMAL** | --- | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **17** | 11 | 41 |
| Chromium | ppm | ASTM D5185m | >20 | **0** | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **0** | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | **3** | 3 | 3 |
| Lead | ppm | ASTM D5185m | >40 | **0** | <1 | 1 |
| Copper | ppm | ASTM D5185m | >330 | **2** | 6 | 3 |
| Tin | ppm | ASTM D5185m | >15 | **0** | 0 | <1 |
| Antimony | ppm | ASTM D5185m | | **---** | --- | <1 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 250 | **5** | 97 | 17 |
| Barium | ppm | ASTM D5185m | 10 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 100 | **64** | 67 | 71 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 450 | **1031** | 456 | 752 |
| Calcium | ppm | ASTM D5185m | 3000 | **1267** | 1977 | 1318 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **1149** | 1153 | 967 |
| Zinc | ppm | ASTM D5185m | 1350 | **1405** | 1397 | 1246 |
| Sulfur | ppm | ASTM D5185m | 4250 | **4192** | 4561 | 2420 |

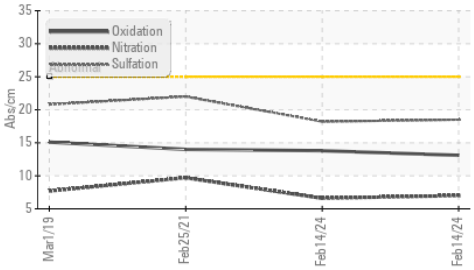
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **2** | 4 | <1 |
| Sodium | ppm | ASTM D5185m | >158 | **<1** | <1 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | **<1** | <1 | <1 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **1** | 0.2 | 1.7 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **7.0** | 6.6 | 9.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **18.5** | 18.2 | 22 |

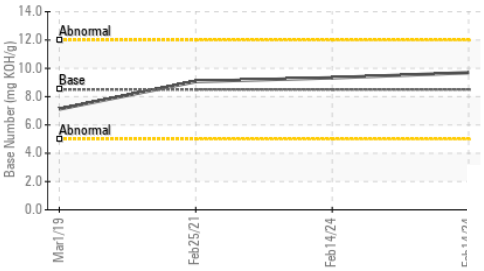
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **13.1** | 13.8 | 14 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | **9.69** | 9.33 | 9.07 |

# OIL ANALYSIS REPORT

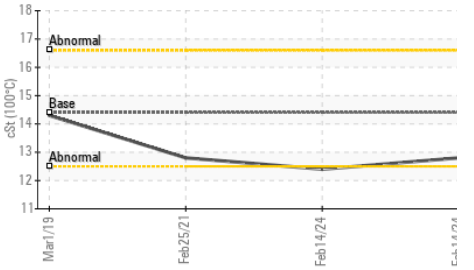
FT-IR (Direct Trend)




Base Number




Viscosity @ 100°C

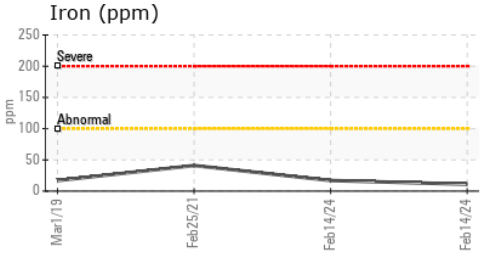



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 |

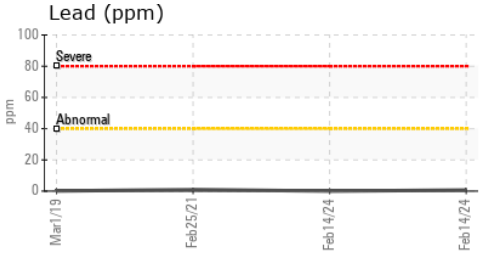
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | **12.8** | 12.4 | 12.8 |

## GRAPHS

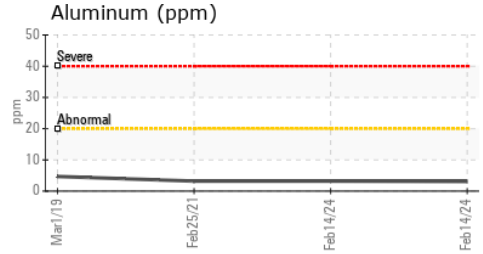
Iron (ppm)



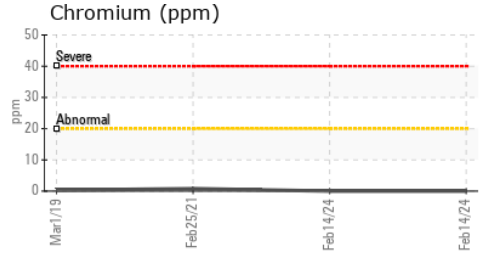

Lead (ppm)



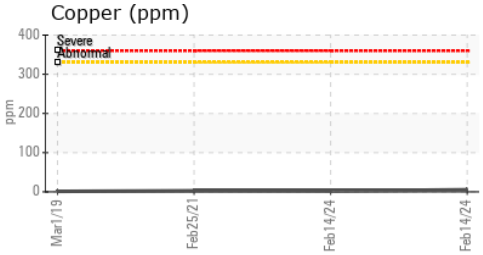

Aluminum (ppm)



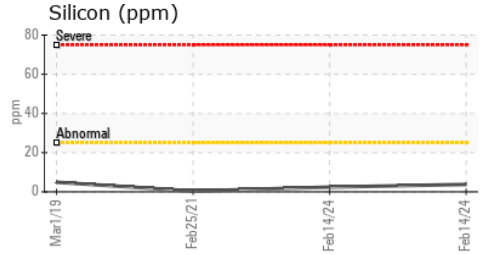

Chromium (ppm)



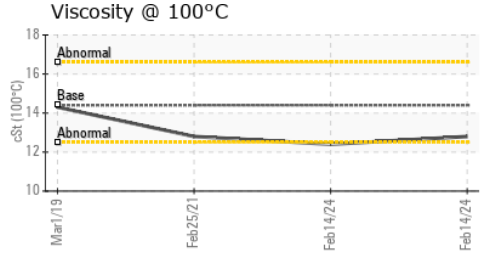

Copper (ppm)



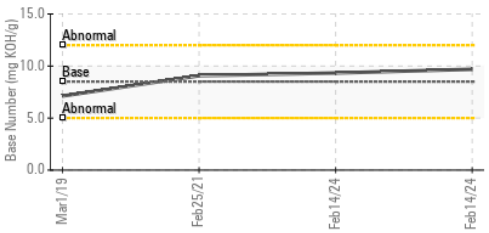

Silicon (ppm)




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : RW0005163
**Lab Number** : 06161021
**Unique Number** : 10996444
**Test Package** : MOB 2

**Received** : 25 Apr 2024
**Tested** : 26 Apr 2024
**Diagnosed** : 26 Apr 2024 - Wes Davis

*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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