James River Equipment

OIL ANALYSIS REPORT

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

Machine Id
## JOHN DEERE 298
Component
## Diesel Engine
Fluid
## JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (--- GAL)

## RECOMMENDATION

Oil and filter 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

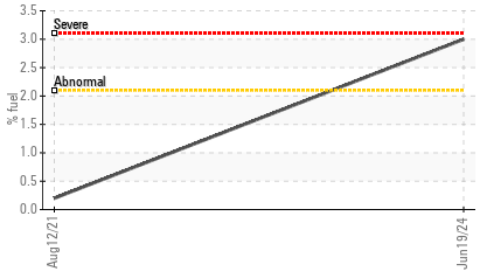
Light fuel dilution occurring.

## FLUID CONDITION

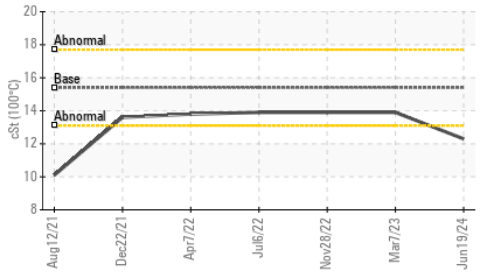
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | JR0217838 | JR0159499 | JR0154243 |
| Sample Date | | Client Info | | 19 Jun 2024 | 07 Mar 2023 | 28 Nov 2022 |
| Machine Age | hrs | Client Info | | 5096 | 3044 | 2514 |
| Oil Age | hrs | Client Info | | 500 | 0 | 536 |
| Filter Age | hrs | Client Info | | 500 | 0 | 536 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | ABNORMAL | NORMAL | NORMAL |
| Iron | ppm | ASTM D5185m | >51 | 9 | 13 | 13 |
| Chromium | ppm | ASTM D5185m | >11 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | 1 | 2 | 2 |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >31 | 2 | 4 | 3 |
| Lead | ppm | ASTM D5185m | >26 | <1 | <1 | <1 |
| Copper | ppm | ASTM D5185m | >26 | <1 | 8 | 2 |
| Tin | ppm | ASTM D5185m | >4 | <1 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >22 | 5 | 6 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | 3 | 2 | 0 |
| Fuel | % | ASTM D3524 | >2.1 | ▲ 3.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.21 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.2 | 0.4 | 0.5 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 8.1 | 9.4 | 10.4 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 20.0 | 23.5 | 24.7 |
| 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 | >0.21 | NEG | NEG | NEG |
| Sodium | ppm | ASTM D5185m | >31 | 2 | <1 | 3 |
| Boron | ppm | ASTM D5185m | | 99 | 167 | 167 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 22 | 243 | 215 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 117 | 739 | 735 |
| Calcium | ppm | ASTM D5185m | | 2264 | 1512 | 1734 |
| Phosphorus | ppm | ASTM D5185m | | 963 | 927 | 857 |
| Zinc | ppm | ASTM D5185m | | 1184 | 1137 | 1171 |
| Sulfur | ppm | ASTM D5185m | | 4104 | 3073 | 3447 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 15.5 | 18.7 | 19.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 13.6 | 6.6 | 8.5 | 9.4 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | ▲ 12.3 | 13.9 | 13.9 |

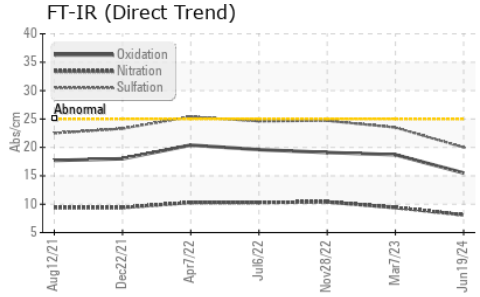
Fuel Dilution



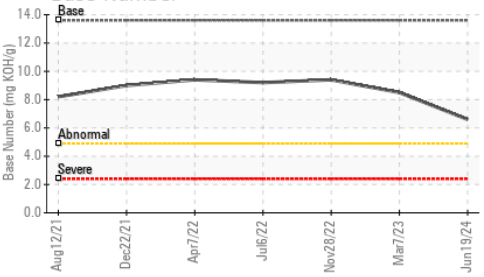

Viscosity @ 100°C



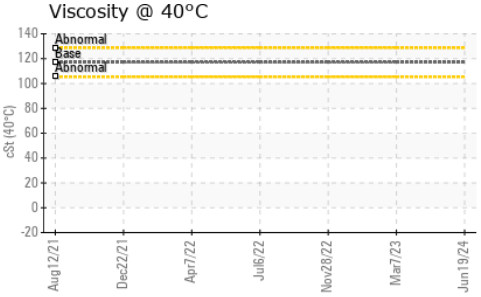

FT-IR (Direct Trend)



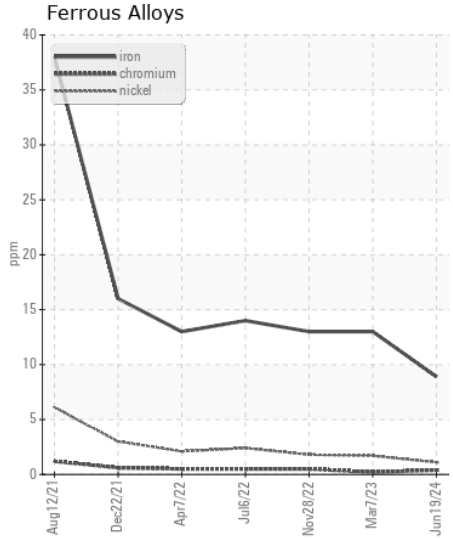

Base Number



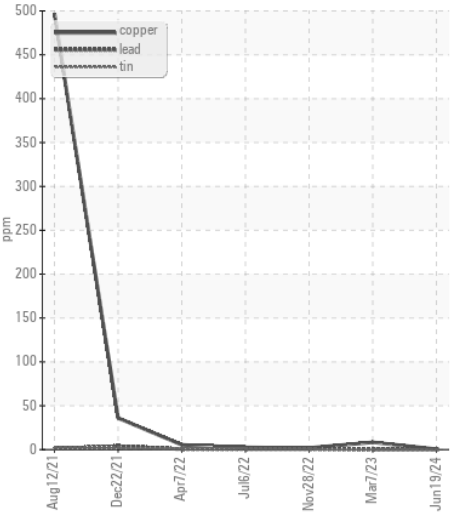

Viscosity @ 40°C



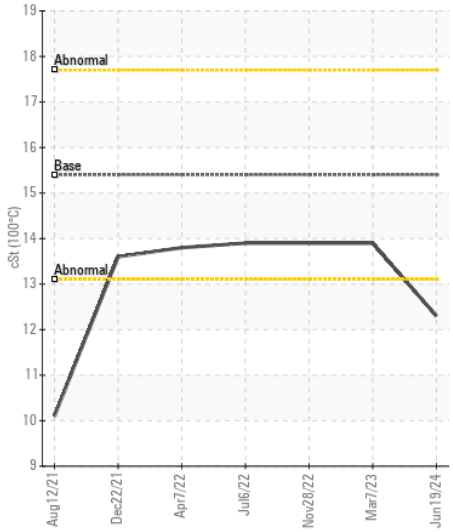

Ferrous Alloys



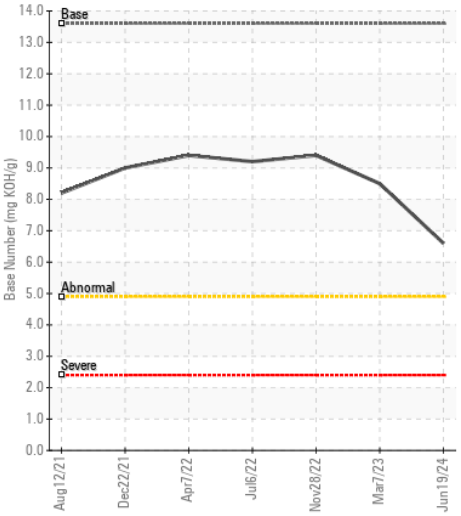

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : JR0217838
**Lab Number** : 06224299
**Unique Number** : 11102496
**Test Package** : CONST ( Additional Tests: FuelDilution, KV40, PercentFuel, TBN )

**Received** : 01 Jul 2024
**Tested** : 03 Jul 2024
**Diagnosed** : 03 Jul 2024 - Jonathan Hester

*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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