James River Equipment

OIL ANALYSIS REPORT

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

Machine Id
## JOHN DEERE 210G 1FF210GXKNF530401
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. No corrective action is recommended at this time. Resample at the next service interval to monitor.

## WEAR

The nickel level has decreased, but is still abnormal. The copper level has decreased, but is still abnormal. Cylinder, crank, or cam shaft wear is indicated.

## CONTAMINATION

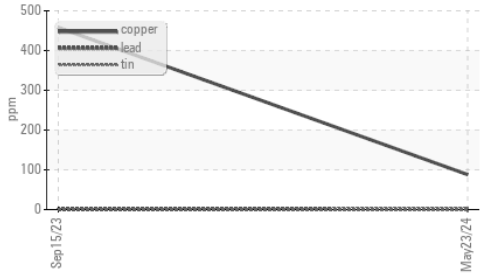
There is no indication of any contamination in the oil.

## FLUID CONDITION

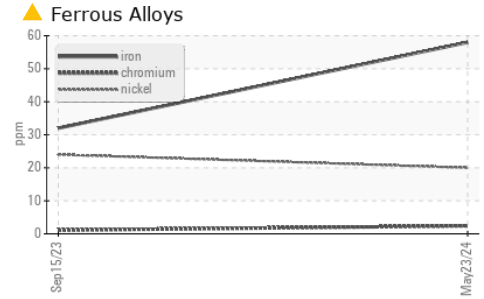
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | JR0207760 | JR0188727 | --- |
| Sample Date | | Client Info | | 23 May 2024 | 15 Sep 2023 | --- |
| Machine Age | hrs | Client Info | | 1027 | 561 | --- |
| Oil Age | hrs | Client Info | | 466 | 561 | --- |
| Filter Age | hrs | Client Info | | 466 | 0 | --- |
| Oil Changed | | Client Info | | Changed | Changed | --- |
| Filter Changed | | Client Info | | Changed | Changed | --- |
| Sample Status | | | | ABNORMAL | ABNORMAL | --- |
| Iron | ppm | ASTM D5185m | >51 | ▲ 58 | 32 | --- |
| Chromium | ppm | ASTM D5185m | >11 | 2 | 1 | --- |
| Nickel | ppm | ASTM D5185m | >5 | ▲ 20 | ▲ 24 | --- |
| Titanium | ppm | ASTM D5185m | | <1 | <1 | --- |
| Silver | ppm | ASTM D5185m | >3 | 1 | 0 | --- |
| Aluminum | ppm | ASTM D5185m | >31 | 8 | 5 | --- |
| Lead | ppm | ASTM D5185m | >26 | <1 | 0 | --- |
| Copper | ppm | ASTM D5185m | >26 | ▲ 88 | ▲ 458 | --- |
| Tin | ppm | ASTM D5185m | >4 | 2 | 1 | --- |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | --- |
| White Metal | scalar | *Visual | NONE | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | --- |
| Silicon | ppm | ASTM D5185m | >22 | 14 | 11 | --- |
| Potassium | ppm | ASTM D5185m | >20 | 5 | 2 | --- |
| Fuel | % | ASTM D3524 | >2.1 | <1.0 | 0.4 | --- |
| Water | | WC Method | >0.21 | NEG | NEG | --- |
| Glycol | | WC Method | | NEG | NEG | --- |
| Soot % | % | *ASTM D7844 | >3 | 0.4 | 0 | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.7 | 9.9 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 23.4 | 25.1 | --- |
| 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 | >0.21 | NEG | NEG | --- |
| Sodium | ppm | ASTM D5185m | >31 | 6 | 3 | --- |
| Boron | ppm | ASTM D5185m | | 257 | 208 | --- |
| Barium | ppm | ASTM D5185m | | 3 | 0 | --- |
| Molybdenum | ppm | ASTM D5185m | | 369 | 279 | --- |
| Manganese | ppm | ASTM D5185m | | 2 | 2 | --- |
| Magnesium | ppm | ASTM D5185m | | 1200 | 804 | --- |
| Calcium | ppm | ASTM D5185m | | 1965 | 1481 | --- |
| Phosphorus | ppm | ASTM D5185m | | 1286 | 909 | --- |
| Zinc | ppm | ASTM D5185m | | 1514 | 1091 | --- |
| Sulfur | ppm | ASTM D5185m | | 4093 | 3572 | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 18.1 | 19.1 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 13.6 | 8.2 | 9.1 | --- |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 12.9 | 10.1 | --- |

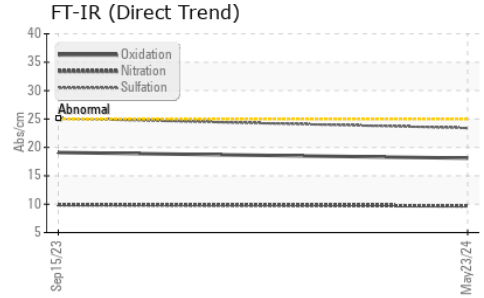
Non-ferrous Metals



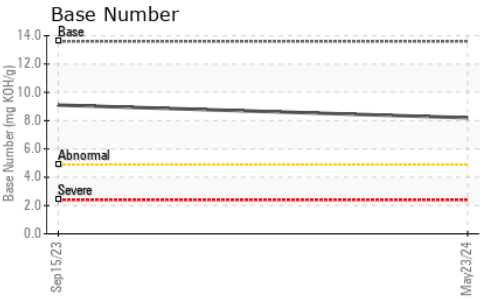

Ferrous Alloys



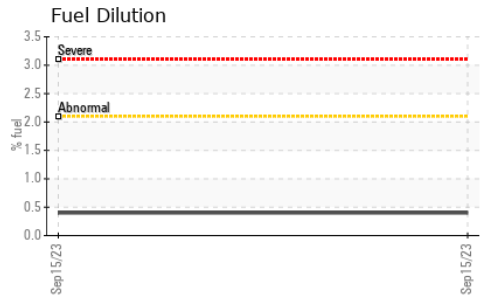

FT-IR (Direct Trend)



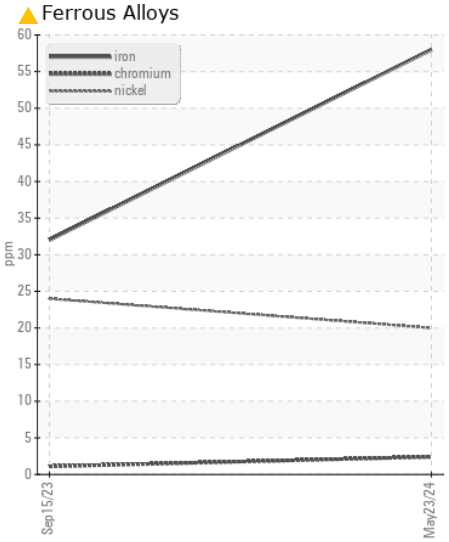

Base Number



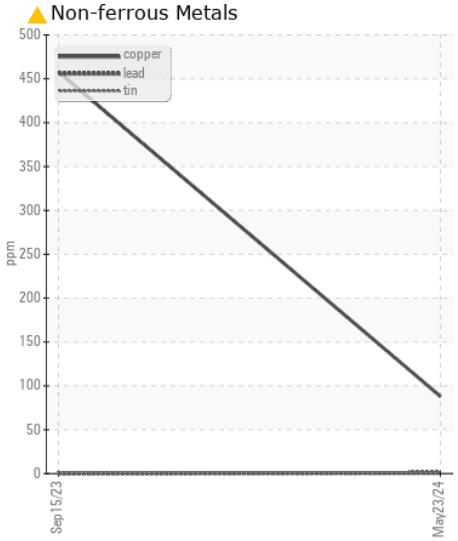

Fuel Dilution



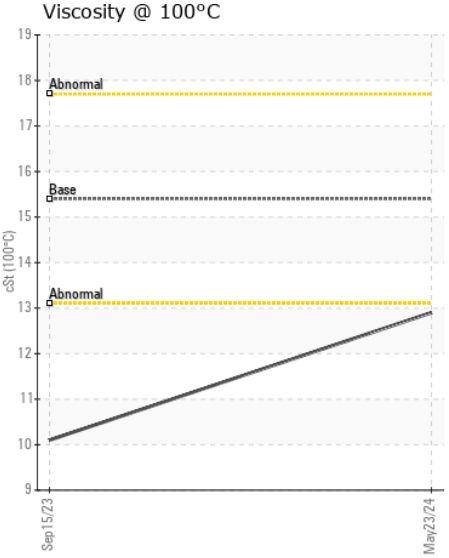

Ferrous Alloys



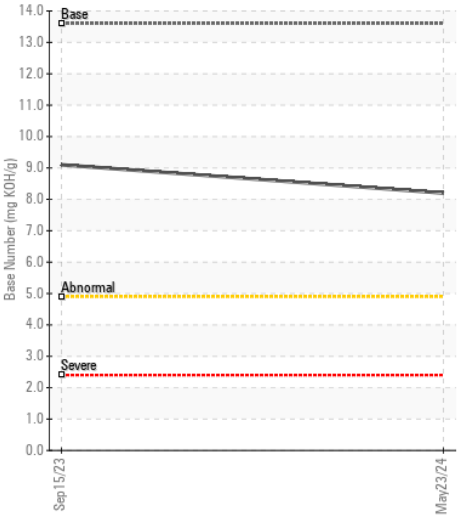

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : JR0207760
**Lab Number** : 06191988
**Unique Number** : 11048740
**Test Package** : CONST ( Additional Tests: FuelDilution, TBN )

**Received** : 28 May 2024
**Tested** : 29 May 2024
**Diagnosed** : 30 May 2024 - Don Baldridge

*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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