TRAAP
Texas Refinery Advanced Analysis Program

# OIL ANALYSIS REPORT

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

Machine Id
## JOHN DEERE 43567
Component
## Diesel Engine
Fluid
## TRC MOLY XL PRO-SPEC IV XP 10W30 (7 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 copper level is abnormal. Cylinder, crank, or cam shaft wear is indicated. Elemental level of copper (Cu) probably due to leaching of copper from copper components (i.e. cooling core) by the oil additives. All other metal levels are typical for a new component breaking in.

## CONTAMINATION

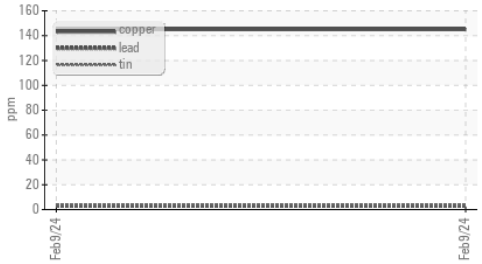
There is no indication of any contamination in the oil.

## FLUID CONDITION

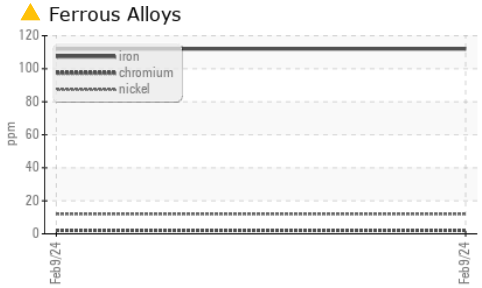
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | TR06086735 | --- | --- |
| Sample Date | | Client Info | | 09 Feb 2024 | --- | --- |
| Machine Age | hrs | Client Info | | 1037 | --- | --- |
| Oil Age | hrs | Client Info | | 500 | --- | --- |
| Filter Age | hrs | Client Info | | 500 | --- | --- |
| Oil Changed | | Client Info | | Changed | --- | --- |
| Filter Changed | | Client Info | | Changed | --- | --- |
| Sample Status | | | | ABNORMAL | --- | --- |
| Iron | ppm | ASTM D5185m | >51 | ▲ 112 | --- | --- |
| Chromium | ppm | ASTM D5185m | >11 | 2 | --- | --- |
| Nickel | ppm | ASTM D5185m | >5 | 12 | --- | --- |
| Titanium | ppm | ASTM D5185m | | <1 | --- | --- |
| Silver | ppm | ASTM D5185m | >3 | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m | >31 | 6 | --- | --- |
| Lead | ppm | ASTM D5185m | >26 | 3 | --- | --- |
| Copper | ppm | ASTM D5185m | >26 | ▲ 145 | --- | --- |
| Tin | ppm | ASTM D5185m | >4 | 4 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | --- | --- |
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Silicon | ppm | ASTM D5185m | >22 | 8 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | 1 | --- | --- |
| Fuel | | WC Method | >2.1 | <1.0 | --- | --- |
| Water | | WC Method | >0.21 | NEG | --- | --- |
| Glycol | % | *ASTM D2982 | | NEG | --- | --- |
| Soot % | % | *ASTM D7844 | >3 | 0.4 | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.3 | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 21.5 | --- | --- |
| 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 | --- | --- |
| Sodium | ppm | ASTM D5185m | >31 | 2 | --- | --- |
| Boron | ppm | ASTM D5185m | | 4 | --- | --- |
| Barium | ppm | ASTM D5185m | | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | 160 | --- | --- |
| Manganese | ppm | ASTM D5185m | | 2 | --- | --- |
| Magnesium | ppm | ASTM D5185m | | 80 | --- | --- |
| Calcium | ppm | ASTM D5185m | | 4268 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | | 847 | --- | --- |
| Zinc | ppm | ASTM D5185m | | 1119 | --- | --- |
| Sulfur | ppm | ASTM D5185m | | 4103 | --- | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 11.6 | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 12.32 | --- | --- |
| Visc @ 100°C | cSt | ASTM D445 | | 11.4 | --- | --- |

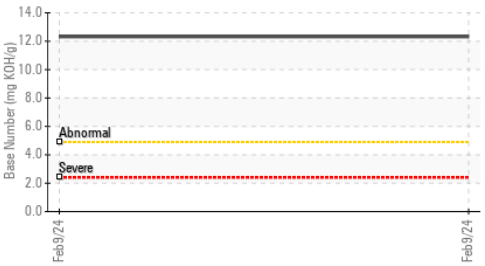
### Non-ferrous Metals



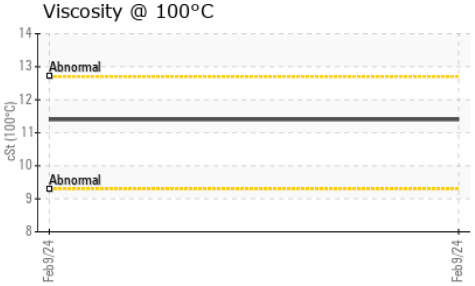

### Ferrous Alloys



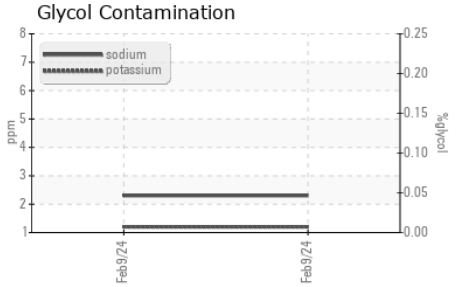

### Base Number



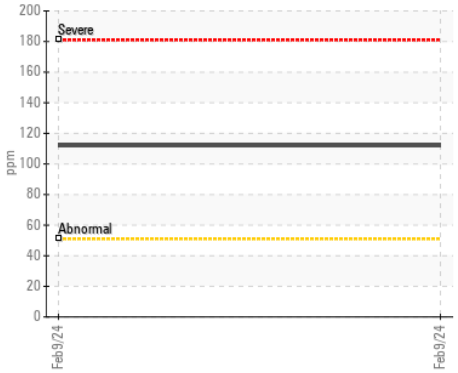

### Viscosity @ 100°C



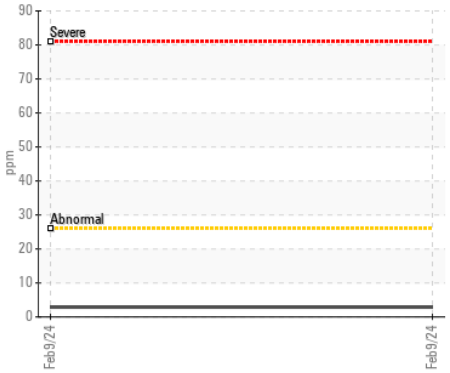

### Glycol Contamination



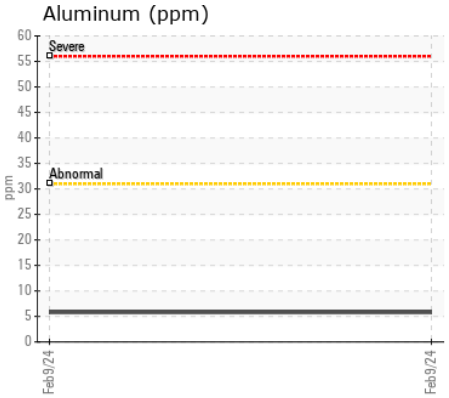

### Iron (ppm)



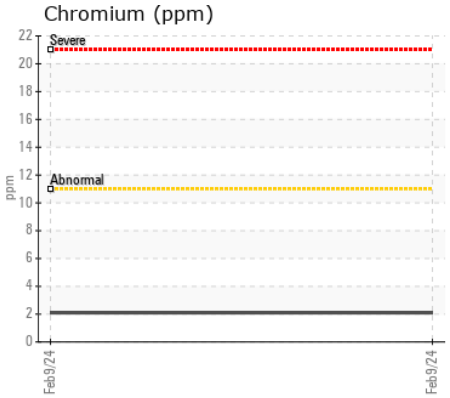

### Lead (ppm)



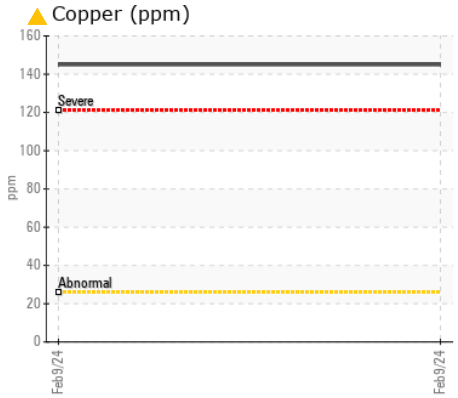

### Aluminum (ppm)



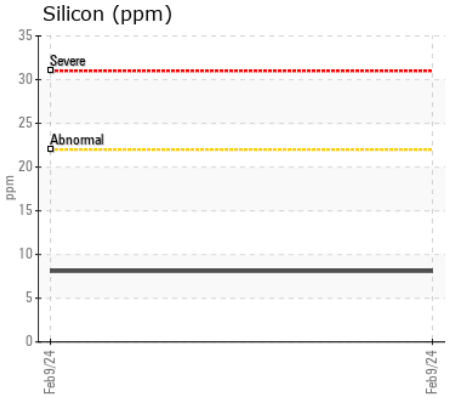

### Chromium (ppm)



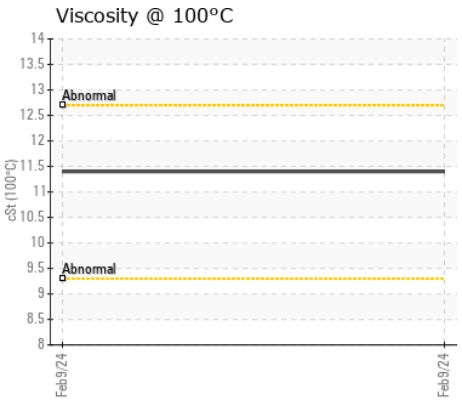

### Copper (ppm)



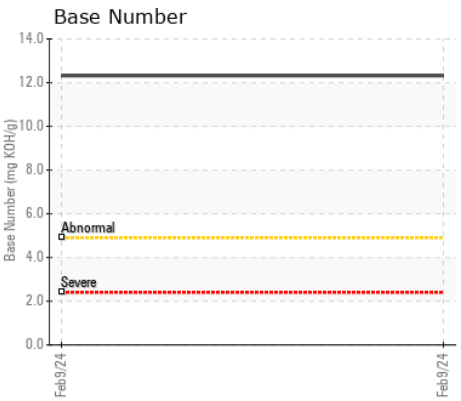

### Silicon (ppm)




### Viscosity @ 100°C




### Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : TR06086735
**Lab Number** : 06086735
**Unique Number** : 10874180
**Test Package** : MOB 2 ( Additional Tests: Glycol )

**Received** : 12 Feb 2024
**Tested** : 14 Feb 2024
**Diagnosed** : 14 Feb 2024 - Don Baldridge

*To discuss this sample report, contact Customer Service at 1-800-827-0711.*
** - 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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