



| | |
|-----------------|------------------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | ATTENTION |



Machine Id
JOHN DEERE 310E 1DW310EXKHF682023

Component
Rear Differential

Fluid
JOHN DEERE HY-GARD HYDRAULIC/RANSMISSION (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | JR0205638 | JR0142333 | JR0150152 |
| Sample Date | | Client Info | | 13 Mar 2024 | 07 Mar 2023 | 03 Nov 2022 |
| Machine Age | hrs | Client Info | | 7306 | 5093 | 4483 |
| Oil Age | hrs | Client Info | | 2213 | 500 | 0 |
| Filter Age | hrs | Client Info | | 0 | 500 | 0 |
| Oil Changed | | Client Info | | Not Changed | Changed | N/A |
| Filter Changed | | Client Info | | Changed | Changed | N/A |
| Sample Status | | | | ATTENTION | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|-------|------|
| PQ | | ASTM D8184 | | 47 | 231 | 3 |
| Iron | ppm | ASTM D5185m | >500 | 71 | 328 | 6 |
| Chromium | ppm | ASTM D5185m | >10 | <1 | 1 | 0 |
| Nickel | ppm | ASTM D5185m | >10 | <1 | 2 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Silver | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | 2 | 4 | <1 |
| Lead | ppm | ASTM D5185m | >25 | 1 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >100 | 4 | 99 | 1 |
| Tin | ppm | ASTM D5185m | >10 | 1 | 4 | 0 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | MODER | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

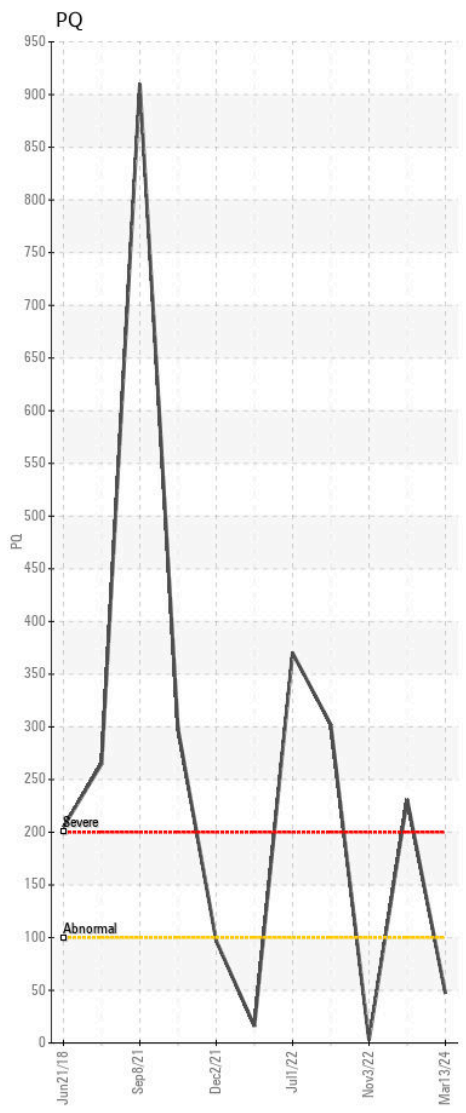
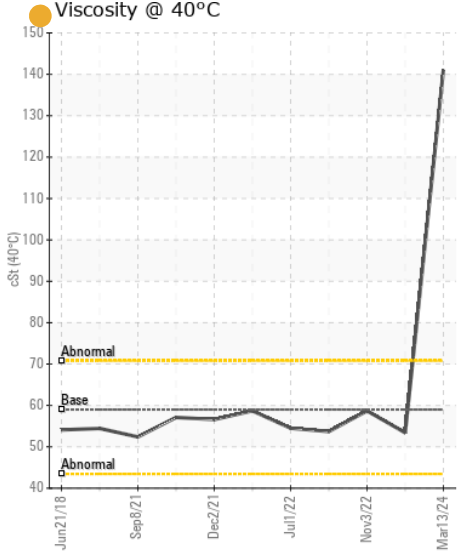
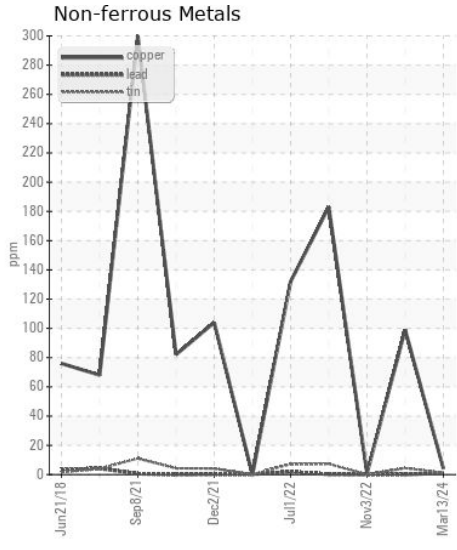
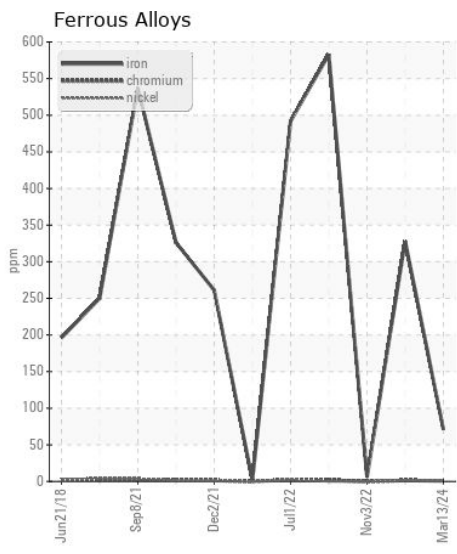
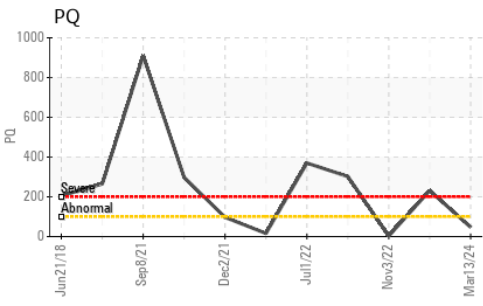
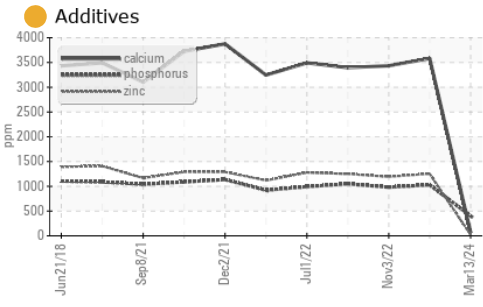
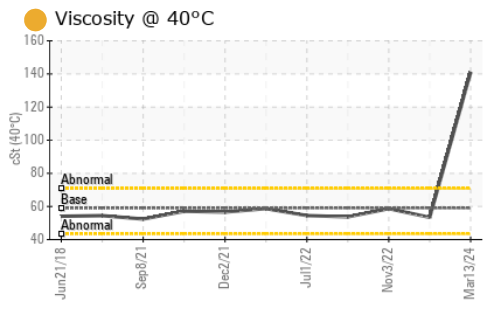
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|--------|-------------|-------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >75 | 5 | 8 | 8 |
| Potassium | ppm | ASTM D5185m | >20 | 1 | 2 | 2 |
| Water | | WC Method | >.2 | NEG | NEG | NEG |
| 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 | >.2 | NEG | NEG | NEG |

FLUID CONDITION

The oil viscosity is higher than normal. Additive levels indicate the addition of a different brand, or type of oil. Confirm oil type.

| | | | | | | |
|-------------|-----|-------------|----|--------------|------|------|
| Sodium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Boron | ppm | ASTM D5185m | | 9 | 10 | 3 |
| Barium | ppm | ASTM D5185m | | 1 | 0 | 3 |
| Molybdenum | ppm | ASTM D5185m | | <1 | 3 | <1 |
| Manganese | ppm | ASTM D5185m | | 1 | 10 | <1 |
| Magnesium | ppm | ASTM D5185m | | 3 | 87 | 93 |
| Calcium | ppm | ASTM D5185m | | 69 | 3582 | 3434 |
| Phosphorus | ppm | ASTM D5185m | | 401 | 1028 | 981 |
| Zinc | ppm | ASTM D5185m | | 22 | 1252 | 1191 |
| Sulfur | ppm | ASTM D5185m | | 21198 | 3569 | 4308 |
| Visc @ 40°C | cSt | ASTM D445 | 59 | 141 | 53.4 | 58.7 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0205638 **Received** : 19 Mar 2024
Lab Number : 06122654 **Tested** : 26 Mar 2024
Unique Number : 10936805 **Diagnosed** : 26 Mar 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: PQ)

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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)