



|                 |               |
|-----------------|---------------|
| WEAR            | <b>NORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b> |
| FLUID CONDITION | <b>NORMAL</b> |

Machine Id  
**JOHN DEERE 524P 1DW524PAPNLZ13570**  
 Component  
**Diesel Engine**  
 Fluid  
**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (--- GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>JR0205796</b>   | JR0192611   | JR0171171   |
| Sample Date    |     | Client Info |           | <b>15 Jun 2024</b> | 29 Nov 2023 | 15 Jun 2023 |
| Machine Age    | hrs | Client Info |           | <b>2468</b>        | 2037        | 1456        |
| Oil Age        | hrs | Client Info |           | <b>431</b>         | 581         | 1456        |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

**WEAR**

All component wear rates are normal.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >51  | <b>10</b>    | 11   | 14   |
| Chromium     | ppm    | ASTM D5185m | >11  | <b>0</b>     | <1   | <1   |
| Nickel       | ppm    | ASTM D5185m | >5   | <b>2</b>     | 1    | 1    |
| Titanium     | ppm    | ASTM D5185m |      | <b>0</b>     | 0    | 0    |
| Silver       | ppm    | ASTM D5185m | >3   | <b>0</b>     | 0    | 0    |
| Aluminum     | ppm    | ASTM D5185m | >31  | <b>5</b>     | 4    | 2    |
| Lead         | ppm    | ASTM D5185m | >26  | <b>0</b>     | 0    | <1   |
| Copper       | ppm    | ASTM D5185m | >26  | <b>2</b>     | 2    | 13   |
| Tin          | ppm    | ASTM D5185m | >4   | <b>&lt;1</b> | <1   | <1   |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | 0    |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |

**CONTAMINATION**

There is no indication of any contamination in the oil.

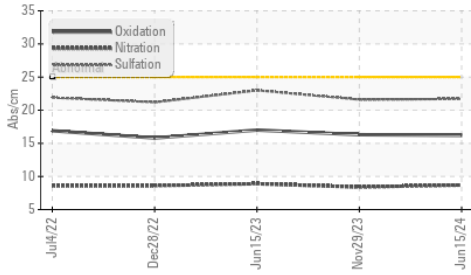
|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >22   | <b>7</b>       | 6     | 6     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>3</b>       | 2     | 2     |
| Fuel             |          | WC Method   | >2.1  | <b>&lt;1.0</b> | <1.0  | <1.0  |
| Water            |          | WC Method   | >0.21 | <b>NEG</b>     | NEG   | NEG   |
| Glycol           |          | WC Method   |       | <b>NEG</b>     | NEG   | NEG   |
| Soot %           | %        | *ASTM D7844 | >3    | <b>0.3</b>     | 0.2   | 0.3   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>8.7</b>     | 8.4   | 8.9   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>21.7</b>    | 21.6  | 23.0  |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Emulsified Water | scalar   | *Visual     | >0.21 | <b>NEG</b>     | NEG   | NEG   |

**FLUID CONDITION**

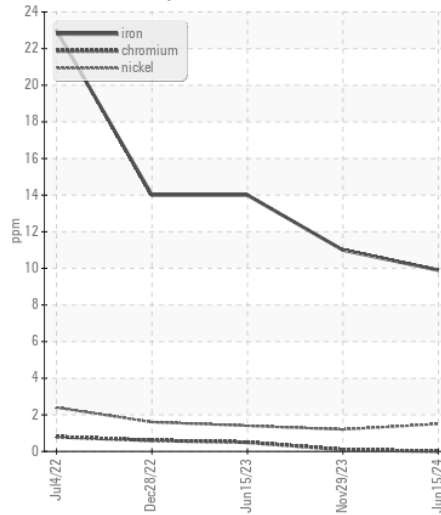
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

|                  |          |             |      |              |      |      |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium           | ppm      | ASTM D5185m | >31  | <b>4</b>     | <1   | 2    |
| Boron            | ppm      | ASTM D5185m |      | <b>226</b>   | 222  | 206  |
| Barium           | ppm      | ASTM D5185m |      | <b>0</b>     | 3    | 3    |
| Molybdenum       | ppm      | ASTM D5185m |      | <b>247</b>   | 249  | 237  |
| Manganese        | ppm      | ASTM D5185m |      | <b>&lt;1</b> | 0    | <1   |
| Magnesium        | ppm      | ASTM D5185m |      | <b>839</b>   | 757  | 725  |
| Calcium          | ppm      | ASTM D5185m |      | <b>1392</b>  | 1440 | 1348 |
| Phosphorus       | ppm      | ASTM D5185m |      | <b>985</b>   | 835  | 826  |
| Zinc             | ppm      | ASTM D5185m |      | <b>1081</b>  | 1054 | 996  |
| Sulfur           | ppm      | ASTM D5185m |      | <b>3549</b>  | 3741 | 3056 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>16.2</b>  | 16.3 | 17.0 |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 13.6 | <b>8.5</b>   | 8.3  | 8.1  |
| Visc @ 100°C     | cSt      | ASTM D445   | 15.4 | <b>13.4</b>  | 13.0 | 13.1 |

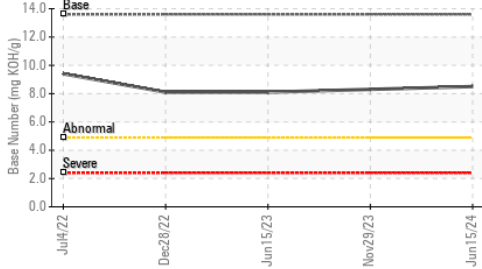
**FT-IR (Direct Trend)**



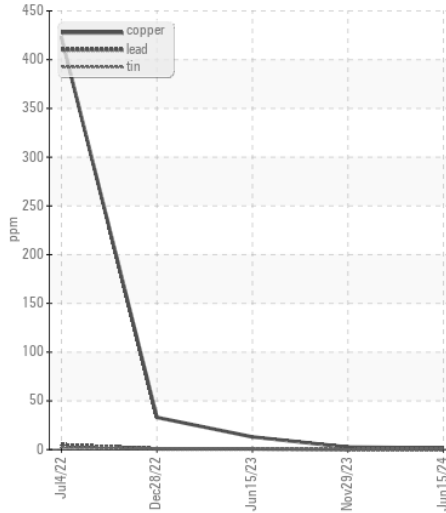
**Ferrous Alloys**



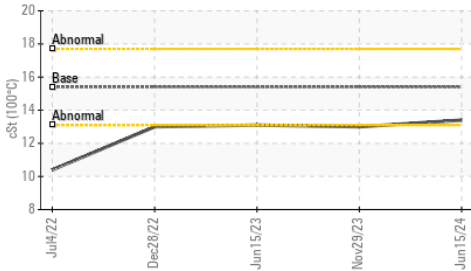
**Base Number**



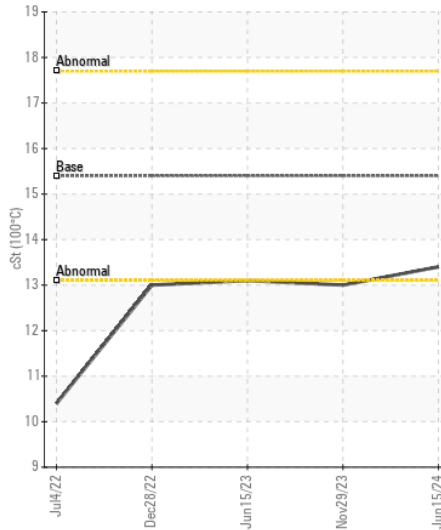
**Non-ferrous Metals**



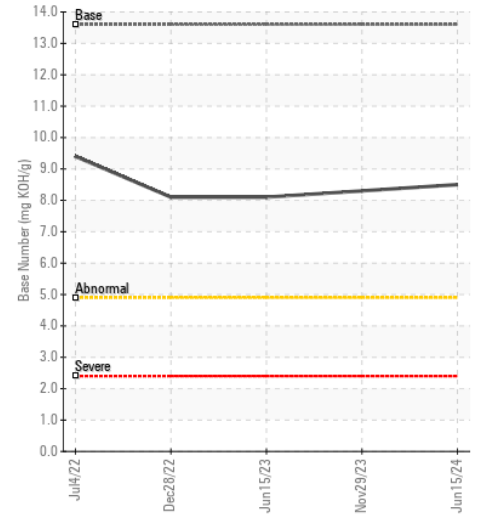
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0205796 **Received** : 18 Jun 2024  
**Lab Number** : 06213302 **Tested** : 19 Jun 2024  
**Unique Number** : 11086166 **Diagnosed** : 19 Jun 2024 - Wes Davis  
**Test Package** : CONST ( Additional Tests: TBN )

**JRE - CHARLOTTE**  
 9550 STATESVILLE ROAD  
 CHARLOTTE, NC  
 US 28269

Contact: CHARLOTTE SHOP  
 myoung@jamesriverequipment.com

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)

T: (704)597-0211  
 F: (704)596-6198