

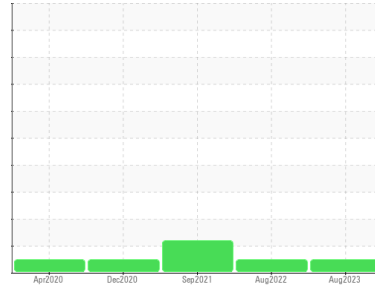
# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**JOHN DEERE 644K 8617 (S/N 1DW644KZHHF682386)**  
Component  
**Hydraulic System**  
Fluid  
**JOHN DEERE HYDRAU (--- GAL)**



**DIAGNOSIS**

**Recommendation**

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

**Wear**

All component wear rates are normal.

**Contamination**

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

**Fluid Condition**

Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

**SAMPLE INFORMATION**

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>PC0061428</b>   | PC0030463   | PC0010391   |
| Sample Date   | Client Info |             | <b>09 Aug 2023</b> | 02 Aug 2022 | 21 Sep 2021 |
| Machine Age   | hrs         | Client Info | <b>7418</b>        | 6300        | 7108        |
| Oil Age       | hrs         | Client Info | <b>0</b>           | 0           | 0           |
| Oil Changed   | Client Info |             | <b>Not Changed</b> | Not Changd  | Not Changed |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | ABNORMAL    |

**WEAR METALS**

|           | method | limit/base        | current      | history1 | history2 |
|-----------|--------|-------------------|--------------|----------|----------|
| Iron      | ppm    | ASTM D5185(m) >71 | <b>9</b>     | 23       | 27       |
| Chromium  | ppm    | ASTM D5185(m) >11 | <b>0</b>     | 9        | 9        |
| Nickel    | ppm    | ASTM D5185(m) >6  | <b>0</b>     | <1       | <1       |
| Titanium  | ppm    | ASTM D5185(m)     | <b>0</b>     | <1       | 0        |
| Silver    | ppm    | ASTM D5185(m)     | <b>2</b>     | 0        | 3        |
| Aluminum  | ppm    | ASTM D5185(m) >11 | <b>&lt;1</b> | 2        | 2        |
| Lead      | ppm    | ASTM D5185(m) >13 | <b>&lt;1</b> | <1       | <1       |
| Copper    | ppm    | ASTM D5185(m) >21 | <b>11</b>    | 5        | 5        |
| Tin       | ppm    | ASTM D5185(m) >5  | <b>&lt;1</b> | 0        | 0        |
| Antimony  | ppm    | ASTM D5185(m)     | <b>0</b>     | <1       | 0        |
| Vanadium  | ppm    | ASTM D5185(m)     | <b>0</b>     | 0        | 0        |
| Beryllium | ppm    | ASTM D5185(m)     | <b>0</b>     | 0        | 0        |
| Cadmium   | ppm    | ASTM D5185(m)     | <b>0</b>     | 0        | 0        |

**ADDITIVES**

|            | method | limit/base         | current      | history1 | history2 |
|------------|--------|--------------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185(m)      | <b>91</b>    | 3        | 2        |
| Barium     | ppm    | ASTM D5185(m)      | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185(m)      | <b>&lt;1</b> | 3        | 2        |
| Manganese  | ppm    | ASTM D5185(m)      | <b>&lt;1</b> | <1       | <1       |
| Magnesium  | ppm    | ASTM D5185(m)      | <b>10</b>    | 32       | 30       |
| Calcium    | ppm    | ASTM D5185(m) 87   | <b>3044</b>  | 418      | 327      |
| Phosphorus | ppm    | ASTM D5185(m) 727  | <b>1148</b>  | 670      | 682      |
| Zinc       | ppm    | ASTM D5185(m) 900  | <b>1288</b>  | 835      | 847      |
| Sulfur     | ppm    | ASTM D5185(m) 1500 | <b>2697</b>  | 1726     | 1628     |
| Lithium    | ppm    | ASTM D5185(m)      | <b>&lt;1</b> | <1       | <1       |

**CONTAMINANTS**

|           | method | limit/base        | current      | history1 | history2 |
|-----------|--------|-------------------|--------------|----------|----------|
| Silicon   | ppm    | ASTM D5185(m) >24 | <b>6</b>     | 3        | 3        |
| Sodium    | ppm    | ASTM D5185(m) >21 | <b>2</b>     | 5        | 4        |
| Potassium | ppm    | ASTM D5185(m) >20 | <b>&lt;1</b> | 2        | 2        |

**FLUID CLEANLINESS**

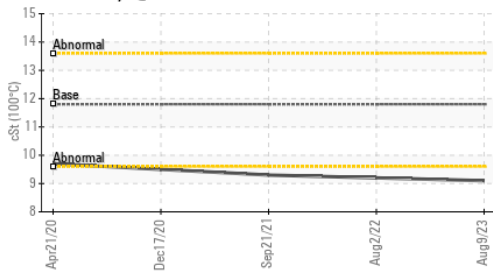
|                 | method       | limit/base | current         | history1 | history2   |
|-----------------|--------------|------------|-----------------|----------|------------|
| Particles >4µm  | ASTM D7647   | >80000     | <b>2320</b>     | 8361     | 33515      |
| Particles >6µm  | ASTM D7647   | >5000      | <b>109</b>      | 1981     | ▲ 10546    |
| Particles >14µm | ASTM D7647   | >640       | <b>7</b>        | 212      | ▲ 1134     |
| Particles >21µm | ASTM D7647   | >160       | <b>3</b>        | 55       | ▲ 275      |
| Particles >38µm | ASTM D7647   | >40        | <b>0</b>        | 2        | 15         |
| Particles >71µm | ASTM D7647   | >10        | <b>0</b>        | 1        | 1          |
| Oil Cleanliness | ISO 4406 (c) | >23/19/16  | <b>18/14/10</b> | 20/18/15 | ▲ 22/21/17 |

**FLUID DEGRADATION**

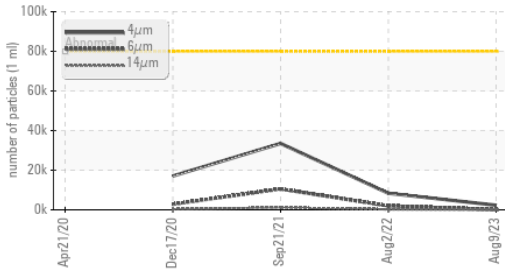
|                  | method   | limit/base     | current     | history1 | history2 |
|------------------|----------|----------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D974* 1.0 | <b>1.44</b> | 0.89     | 0.78     |

# OIL ANALYSIS REPORT

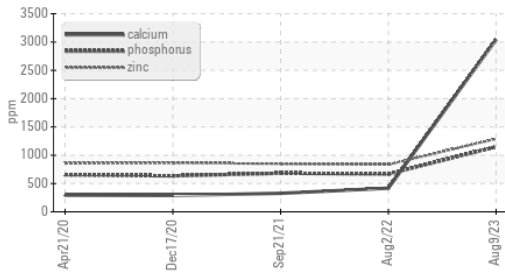
Viscosity @ 100°C



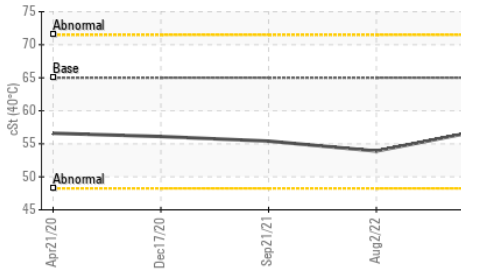
Particle Trend



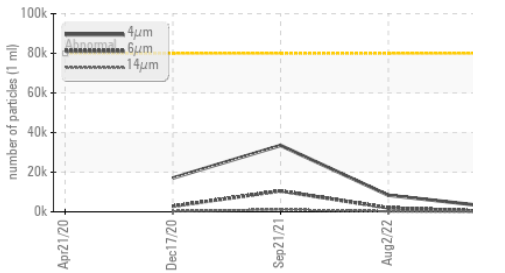
Additives



Viscosity @ 40°C



Particle Trend

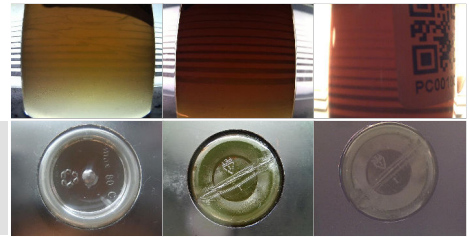


| PARAMETER        | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | Visual*    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | Visual*    | NONE    | NONE     | NONE     |
| Precipitate      | scalar | Visual*    | NONE    | NONE     | NONE     |
| 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*    | >0.075  | NEG      | NEG      |
| Free Water       | scalar | Visual*    |         | NEG      | NEG      |

| PARAMETER            | method | limit/base    | current | history1 | history2 |
|----------------------|--------|---------------|---------|----------|----------|
| Visc @ 40°C          | cSt    | ASTM D7279(m) | 65      | 53.9     | 55.4     |
| Visc @ 100°C         | cSt    | ASTM D7279(m) | 11.8    | 9.2      | 9.3      |
| Viscosity Index (VI) | Scale  | ASTM D2270*   | 178     | 152      | 150      |

| PARAMETER | method | limit/base | current | history1 | history2 |
|-----------|--------|------------|---------|----------|----------|
|-----------|--------|------------|---------|----------|----------|

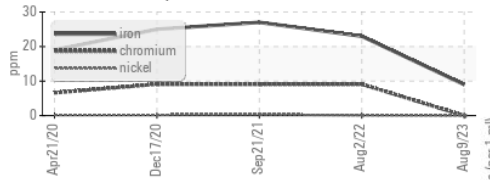
Color



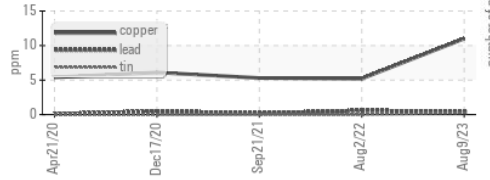
Bottom

## GRAPHS

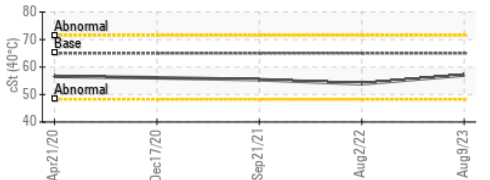
Ferrous Alloys



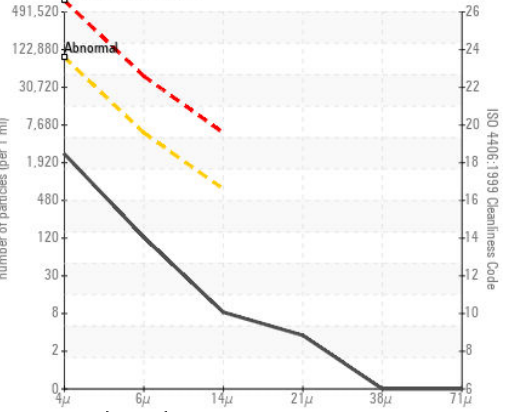
Non-ferrous Metals



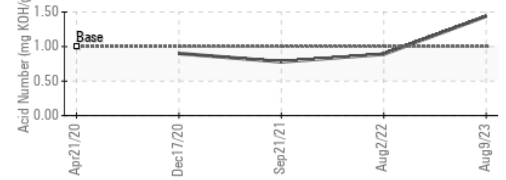
Viscosity @ 40°C



Particle Count



Acid Number



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **TRUCK AND EQUIPMENT SOLUTION**  
**Sample No.** : PC0061428 **Received** : 17 Aug 2023 **2 BERTRAM INDUSTRIAL PKWY.**  
**Lab Number** : 02576426 **Diagnosed** : 21 Aug 2023 **MIDHURST, ON**  
**Unique Number** : 5629486 **Diagnostician** : Kevin Marson **CA L9X 1L2**  
**Test Package** : IND 2 ( Additional Tests: KV100, TAN MAN, VI ) **Contact: Julie Holden**  
**parts@tesbarrie.com**

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.

**T: (705)792-7620**  
**F: (705)725-5425**