WEAR CONTAMINATION FLUID CONDITION

NORMAL SEVERE NORMAL

Area

[05W47555]

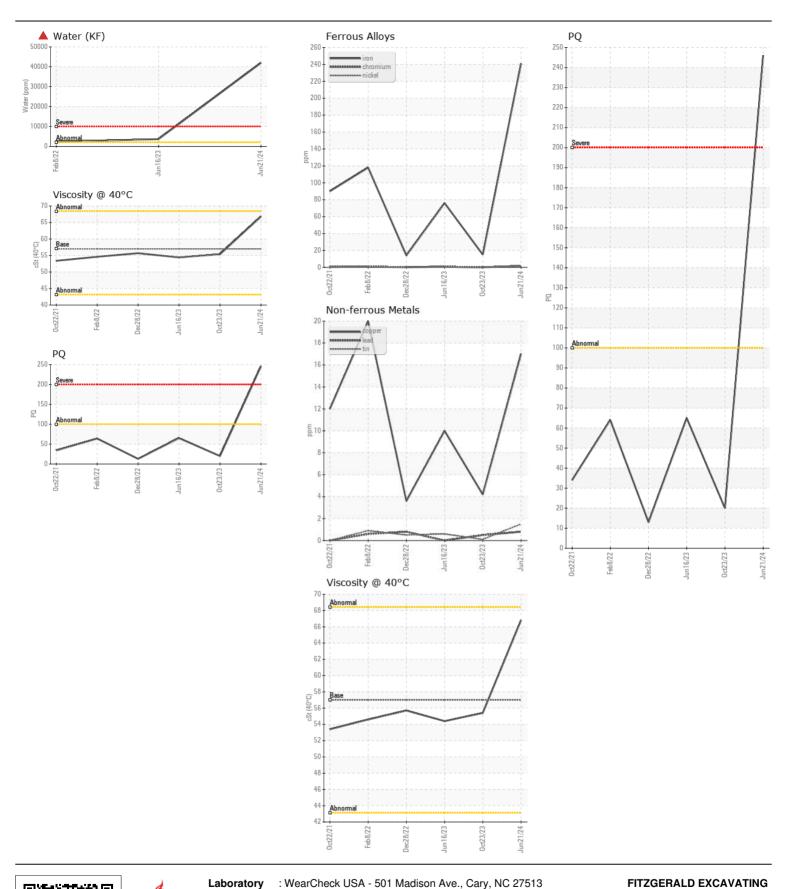
## **JOHN DEERE PM061171**

Component

**Rear Differential** 

JOHN DEERE HY-GARD HYD/TRANS (8 GAL)

| JOHN DEERE HY-GARD HYD/TRANS (8 GAL)  |   |  |   |   |   |   |   |
|---|---|--|---|---|---|---|---|
| RECOMMENDATION  | Test  | UOM  | Method  | Limit/Abn   | Current   | History1  | History2  |
| We advise that you check for the source of water entry. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. ( Customer Sample Comment: Check for water and metal shavings ) | Sample Number   |  | Client Info   |   | JR0218315   |   | JR0176359   |
|   | Sample Date   |  | Client Info   |   | 21 Jun 2024   | 23 Oct 2023   | 16 Jun 2023   |
|   | Machine Age   | hrs  | Client Info   |   | 2994  | 2451  | 1457  |
|   | Oil Age   | hrs  | Client Info   |   | 1000  | 0   | 2000  |
|   | Filter Age  | hrs  | Client Info   |   | 1000  | 0   | 1000  |
|   | Oil Changed   |  | Client Info   |   | Changed   | Not Changd  | Changed   |
|   | Filter Changed  |  | Client Info   |   | Changed   | Not Changd  | Changed   |
|   | Sample Status   |  |   |   | SEVERE  | NORMAL  | ABNORMAL  |
| WEAD  | DO.   |  | ACTA DOLOA  |   | 040   | 00  | 0.5   |
| WEAR  All component wear rates are normal.  | PQ  |  | ASTM D8184  | F00   | 246   | 20  | 65  |
|   | Iron  | ppm  | ASTM D5185m   |   | 241   | 15  | 76<br><1  |
|   | Chromium<br>Nickel  | ppm  | ASTM D5185m   |   | 2   | 0   | <1  |
|   | Titanium  | ppm  | ASTM D5185m<br>ASTM D5185m  | >10   | 1   | 0   | <1  |
|   | Silver  | ppm  | ASTM D5185m   |   | <1  | 0   | 0   |
|   | Aluminum  |  | ASTM D5185m   | >25   | 6   | <1  | <1  |
|   | Lead  | ppm  | ASTM D5185m   |   | <1  | <1  | 0   |
|   | Copper  | ppm  | ASTM D5185m   |   | 17  | 4   | 10  |
|   | Tin   | ppm  | ASTM D5185m   |   | 2   | <1  | <1  |
|   | Vanadium  | ppm  | ASTM D5185m   | >10   | -<br><1   | 0   | 0   |
|   | White Metal   | scalar   | *Visual   | NONE  | MODER   | NONE  | MODER   |
|   | Yellow Metal  | scalar   | *Visual   | NONE  | NONE  |   | NONE  |
|   |   |  | visuai  | INOINE  | INCINE  | NONE  | INOINE  |
|   |   |  | v isuai   | INOINE  | ·····   | NONE  |   |
| CONTAMINATION   | Silicon   | ppm  | ASTM D5185m   | >75   | 18  | 4   | 10  |
| CONTAMINATION  Appearance is milky. There is a high concentration of water present in   | Silicon<br>Potassium  | ppm  | ASTM D5185m<br>ASTM D5185m  | >75<br>>20  | 18<br>2   |   | 10  |
|   | Silicon<br>Potassium<br>Water   | ppm  | ASTM D5185m<br>ASTM D5185m<br>ASTM D6304  | >75<br>>20<br>>.2   | 18<br>2<br>▲ 4.20   | 4   | 10<br><1<br>▲ 0.362   |
| Appearance is milky. There is a high concentration of water present in  | Silicon Potassium Water ppm Water   | ppm<br>ppm<br>%<br>ppm   | ASTM D5185m<br>ASTM D5185m<br>ASTM D6304<br>ASTM D6304  | >75<br>>20<br>>.2<br>>2000  | 18<br>2<br>• 4.20<br>• 42000  | 4<br>0<br>  | 10<br><1<br>\$\triangle 0.362<br>\$\triangle 3620   |
| Appearance is milky. There is a high concentration of water present in  | Silicon Potassium Water ppm Water Silt  | ppm<br>ppm<br>%<br>ppm<br>scalar   | ASTM D5185m<br>ASTM D5185m<br>ASTM D6304<br>ASTM D6304<br>*Visual   | >75<br>>20<br>>.2<br>>2000<br>NONE  | 18<br>2<br>▲ 4.20<br>▲ 42000<br>NONE  | 4<br>0<br><br><br>NONE  | 10<br><1<br>▲ 0.362<br>▲ 3620<br>NONE   |
| Appearance is milky. There is a high concentration of water present in  | Silicon Potassium Water ppm Water Silt Debris   | ppm<br>ppm<br>%<br>ppm<br>scalar<br>scalar   | ASTM D5185m<br>ASTM D5185m<br>ASTM D6304<br>ASTM D6304<br>*Visual   | >75<br>>20<br>>.2<br>>2000<br>NONE<br>NONE                                  | 18<br>2<br>▲ 4.20<br>▲ 42000<br>NONE<br>▲ MODER   | 4<br>0<br><br><br>NONE<br>NONE  | 10<br><1<br>▲ 0.362<br>▲ 3620<br>NONE   |
| Appearance is milky. There is a high concentration of water present in  | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt   | ppm<br>%<br>ppm<br>scalar<br>scalar<br>scalar  | ASTM D5185m<br>ASTM D6304<br>ASTM D6304<br>*Visual<br>*Visual   | >75<br>>20<br>>.2<br>>2000<br>NONE<br>NONE<br>NONE                          | 18 2  ▲ 4.20  ▲ 42000  NONE  ▲ MODER  NONE  | 4<br>0<br><br>NONE<br>NONE<br>NONE  | 10<br><1<br>▲ 0.362<br>▲ 3620<br>NONE<br>NONE   |
| Appearance is milky. There is a high concentration of water present in  | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt Appearance  | ppm<br>ppm<br>%<br>ppm<br>scalar<br>scalar<br>scalar<br>scalar                                       | ASTM D5185m<br>ASTM D6304<br>ASTM D6304<br>*Visual<br>*Visual<br>*Visual<br>*Visual   | >75<br>>20<br>>.2<br>>2000<br>NONE<br>NONE<br>NONE<br>NORML                 | 18 2  ▲ 4.20  ▲ 42000  NONE  ▲ MODER  NONE  ● MILKY   | 4 0 NONE NONE NONE NONE NONE  | 10 <1<br>▲ 0.362<br>▲ 3620<br>NONE<br>NONE<br>NONE<br>NORML                                     |
| Appearance is milky. There is a high concentration of water present in  | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor   | ppm<br>ppm<br>%<br>ppm<br>scalar<br>scalar<br>scalar<br>scalar                                       | ASTM D5185m<br>ASTM D6304<br>ASTM D6304<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual  | >75 >20 >.2 >2000 NONE NONE NONE NORML NORML                                | 18 2 ▲ 4.20 ▲ 42000 NONE ▲ MODER NONE ● MILKY NORML   | 4 0 NONE NONE NONE NONE NORML   | 10 <1  0.362  3620  NONE  NONE  NONE  NORML  NORML  |
| Appearance is milky. There is a high concentration of water present in  | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt Appearance  | ppm<br>ppm<br>%<br>ppm<br>scalar<br>scalar<br>scalar<br>scalar                                       | ASTM D5185m<br>ASTM D6304<br>ASTM D6304<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual  | >75<br>>20<br>>.2<br>>2000<br>NONE<br>NONE<br>NONE<br>NORML                 | 18 2  ▲ 4.20  ▲ 42000  NONE  ▲ MODER  NONE  ● MILKY   | 4 0 NONE NONE NONE NONE NONE  | 10 <1<br>▲ 0.362<br>▲ 3620<br>NONE<br>NONE<br>NONE<br>NORML                                     |
| Appearance is milky. There is a high concentration of water present in  | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor   | ppm<br>ppm<br>%<br>ppm<br>scalar<br>scalar<br>scalar<br>scalar                                       | ASTM D5185m<br>ASTM D6304<br>ASTM D6304<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual  | >75 >20 >.2 >2000 NONE NONE NONE NORML NORML                                | 18 2 ▲ 4.20 ▲ 42000 NONE ▲ MODER NONE ● MILKY NORML   | 4 0 NONE NONE NONE NONE NORML   | 10 <1  0.362  3620  NONE  NONE  NONE  NORML  NORML  |
| Appearance is milky. There is a high concentration of water present in the oil. Moderate concentration of visible dirt/debris present in the oil.  FLUID CONDITION  | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water  | ppm<br>ppm<br>%<br>ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar                             | ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual   | >75<br>>20<br>>.2<br>>2000<br>NONE<br>NONE<br>NONE<br>NORML<br>NORML<br>>.2 | 18 2  ▲ 4.20  ▲ 42000  NONE  ▲ MODER  NONE  ● MILKY  NORML  ▲ 0.2%                            | 4 0 NONE NONE NONE NORML NORML NEG  | 10<br><1<br>▲ 0.362<br>▲ 3620<br>NONE<br>NONE<br>NORML<br>NORML<br>0.2%                         |
| Appearance is milky. There is a high concentration of water present in the oil. Moderate concentration of visible dirt/debris present in the oil.   | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water  | ppm<br>ppm<br>%<br>ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar                   | ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual *ASTM D6304   | >75<br>>20<br>>.2<br>>2000<br>NONE<br>NONE<br>NORML<br>NORML<br>>.2         | 18 2  ▲ 4.20  ▲ 42000  NONE  ▲ MODER  NONE  ● MILKY  NORML  ▲ 0.2%                            | 4 0 NONE NONE NONE NORML NORML NEG  | 10<br><1<br>▲ 0.362<br>▲ 3620<br>NONE<br>NONE<br>NONE<br>NORML<br>NORML<br>0.2%                 |
| Appearance is milky. There is a high concentration of water present in the oil. Moderate concentration of visible dirt/debris present in the oil.  FLUID CONDITION  | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron   | ppm<br>ppm<br>%<br>ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>ppm                      | ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m ASTM D5185m  | >75<br>>20<br>>.2<br>>2000<br>NONE<br>NONE<br>NORML<br>NORML<br>>.2         | 18 2 ▲ 4.20 ▲ 42000 NONE ▲ MODER NONE ● MILKY NORML ▲ 0.2%  7 32                              | 4 0 NONE NONE NONE NORML NORML NORML NEG <1   | 10<br><1<br>▲ 0.362<br>▲ 3620<br>NONE<br>NONE<br>NORML<br>NORML<br>0.2%                         |
| Appearance is milky. There is a high concentration of water present in the oil. Moderate concentration of visible dirt/debris present in the oil.  FLUID CONDITION  | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water  Sodium Boron Barium   | ppm ppm % ppm scalar scalar scalar scalar scalar ppm ppm   | ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m ASTM D5185m  | >75<br>>20<br>>.2<br>>2000<br>NONE<br>NONE<br>NORML<br>NORML<br>>.2         | 18 2  ▲ 4.20  ▲ 42000  NONE  ▲ MODER  NONE  ● MILKY  NORML  ▲ 0.2%  7 32 0                    | 4 0 NONE NONE NONE NORML NORML NEG <1 8 0   | 10<br><1<br>▲ 0.362<br>▲ 3620<br>NONE<br>NONE<br>NORML<br>NORML<br>0.2%<br>3<br>11<br>6         |
| Appearance is milky. There is a high concentration of water present in the oil. Moderate concentration of visible dirt/debris present in the oil.  FLUID CONDITION  | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water  Sodium Boron Barium Molybdenum  | ppm ppm % ppm scalar scalar scalar scalar scalar ppm ppm ppm   | ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  | >75 >20 >.2 >2000 NONE NONE NONE NORML NORML >.2  6 0                       | 18 2  ▲ 4.20  ▲ 42000  NONE  ▲ MODER  NONE  ● MILKY  NORML  ▲ 0.2%  7 32 0 15                 | 4<br>0<br><br>NONE<br>NONE<br>NORML<br>NORML<br>NEG<br><1<br>8<br>0                                   | 10<br><1<br>▲ 0.362<br>▲ 3620<br>NONE<br>NONE<br>NORML<br>NORML<br>0.2%<br>3<br>11<br>6<br>10   |
| Appearance is milky. There is a high concentration of water present in the oil. Moderate concentration of visible dirt/debris present in the oil.  FLUID CONDITION  | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water  Sodium Boron Barium Molybdenum Manganese                              | ppm ppm % ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm                                 | ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  | >75<br>>20<br>>.2<br>>2000<br>NONE<br>NONE<br>NORML<br>NORML<br>>.2         | 18 2  ▲ 4.20  ▲ 42000  NONE  ▲ MODER  NONE  ● MILKY  NORML  ▲ 0.2%  7 32 0 15 4               | 4<br>0<br><br>NONE<br>NONE<br>NORML<br>NORML<br>NEG<br><1<br>8<br>0<br>5<br><1                        | 10 <1<br>▲ 0.362<br>▲ 3620<br>NONE<br>NONE<br>NORML<br>NORML<br>0.2%<br>3<br>11<br>6<br>10<br>2 |
| Appearance is milky. There is a high concentration of water present in the oil. Moderate concentration of visible dirt/debris present in the oil.  FLUID CONDITION  | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water  Sodium Boron Barium Molybdenum Manganese Magnesium                    | ppm<br>ppm<br>%<br>ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m        | >75 >20 >.2 >2000 NONE NONE NONE NORML NORML >.2  6 0 0  145 3570 1290      | 18 2 ▲ 4.20 A 42000 NONE ▲ MODER NONE ● MILKY NORML ▲ 0.2%  7 32 0 15 4 169                   | 4<br>0<br><br>NONE<br>NONE<br>NORML<br>NORML<br>NEG<br><1<br>8<br>0<br>5<br><1                        | 10 <1 △ 0.362 △ 3620 NONE NONE NONE NORML NORML 0.2%  3 11 6 10 2 138                           |
| Appearance is milky. There is a high concentration of water present in the oil. Moderate concentration of visible dirt/debris present in the oil.  FLUID CONDITION  | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water  Sodium Boron Barium Molybdenum Manganese Magnesium Calcium            | ppm ppm % ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm ppm          | ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual *D5185m ASTM D5185m | >75 >20 >.2 >2000 NONE NONE NONE NORML NORML >.2  6 0 0  145 3570 1290      | 18 2  ▲ 4.20  ▲ 42000  NONE  ▲ MODER  NONE  ● MILKY  NORML  ▲ 0.2%  7 32 0 15 4 169 3233      | 4<br>0<br><br>NONE<br>NONE<br>NORML<br>NORML<br>NEG<br><1<br>8<br>0<br>5<br><1<br>109<br>3150         | 10 <1   |
| Appearance is milky. There is a high concentration of water present in the oil. Moderate concentration of visible dirt/debris present in the oil.  FLUID CONDITION  | Silicon Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water  Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm ppm pp             | ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m        | >75 >20 >.2 >2000 NONE NONE NONE NORML NORML >.2  6 0 0  145 3570 1290      | 18 2  ▲ 4.20  ▲ 42000  NONE  ▲ MODER  NONE  ● MILKY  NORML  ▲ 0.2%  7 32 0 15 4 169 3233 1079 | 4<br>0<br><br>NONE<br>NONE<br>NORML<br>NORML<br>NEG<br><1<br>8<br>0<br>5<br><1<br>109<br>3150<br>1023 | 10 <1   |







Certificate L2367

Laboratory Sample No.

Lab Number : 06220017 Unique Number : 11098214

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : JR0218315

Received **Tested** 

Diagnosed Test Package : CONST ( Additional Tests: KF, PQ )

: 26 Jun 2024 : 26 Jun 2024 - Sean Felton

: 25 Jun 2024

US 22604 Contact: Service Manager

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:

F:

PO BOX 2168

WINCHESTER, VA