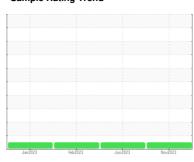


# **OIL ANALYSIS REPORT**

Sample Rating Trend







D-234
Component

**Left Final Drive** 

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

#### Dirialivoolo

### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil

## **Fluid Condition**

The condition of the oil is acceptable for the time in service.

Sample Number   Client Info   WC0828481   WC0780365   WC078037   Sample Date   Client Info   O2 Nov 2023   29 Jun 2023   28 Feb 202   Machine Age   hrs   Client Info   1702   1146   531     Machine Age   hrs   Client Info   556   1146   531     Oil Age   hrs   Client Info   Not Changd   NoRMAL   NORMAL   NORMAL   NORMAL   NORMAL   NORMAL   NORMAL   NORMAL   NORMAL   WEAR METALS   method   limit/bass   current   history1   history2     Iron   ppm   ASTM D5185m   >500   75   150   116     Chromium   ppm   ASTM D5185m   >500   75   150   116     Chromium   ppm   ASTM D5185m   >10   0   0   0     Aluminum   ppm   ASTM D5185m   >25   <1   3   3     Silver   ppm   ASTM D5185m   >25   <1   6   4     Copper   ppm   ASTM D5185m   >50   0   <1   <1     Tin   ppm   ASTM D5185m   >50   0   <1   <1     Cadmium   ppm   ASTM D5185m   0   0   0   <1     Vanadium   ppm   ASTM D5185m   0   0   0   <1     Vanadium   ppm   ASTM D5185m   0   0   0   0     ADDITIVES   method   limit/bass   current   history1   history1     ADDITIVES   method   limit/bass   current   history1   history2     ADDITIVES   method   limit/bass   current   history1   history3     ADDITIVES   method   limit/bass   current   history1   history3     ADDITIVES   method   limit/bass   current   history1   history3     ASTM D5185m   0   0   0   0   0     ADDITIVES   method   limit/bass   current   history1   history3     ASTM D5185m   1290   984   1053   938   3327     ASTM D5185m   145   15   104   102   2   103     Calcium   ppm   ASTM D5185m   1290   984   1053   938   3327     Phosphorus   ppm   ASTM D5185m   250   0   8   8     CONTAMINANTS   method   limit/bass   current   history1   history3     Distory3   More   Nore   Nor	AL)		Jan 202	3 Feb2023	Jun2023 N	lov2023	
Sample Date   Client Info   1702	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   1702   1146   531	Sample Number		Client Info		WC0828481	WC0780365	WC0780379
Oil Age         hrs         Client Info         556         1146         531           Oil Changed         Client Info         Not Changd         Not Changed         Act Change	Sample Date		Client Info		02 Nov 2023	29 Jun 2023	28 Feb 2023
Oil Changed   Client Info   Not Changed   NORMAL   NORM	Machine Age	hrs	Client Info		1702	1146	531
NORMAL   N	Oil Age	hrs	Client Info		556	1146	531
NORMAL   N	Oil Changed		Client Info		Not Changd	Changed	Not Changd
Irron					NORMAL		_
Chromium         ppm         ASTM D5185m         >10         <1         3         3           Nickel         ppm         ASTM D5185m         >10         0         0         0           Tittanium         ppm         ASTM D5185m         <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>500	75	150	116
Titanium	Chromium	ppm	ASTM D5185m	>10	<1	3	3
Silver	Nickel	ppm	ASTM D5185m	>10	0	0	0
Astronomic   Ast	Titanium	ppm	ASTM D5185m		<1	<1	<1
Lead         ppm         ASTM D5185m         >25         <1         6         4           Copper         ppm         ASTM D5185m         >50         0         <1	Silver	ppm	ASTM D5185m		0	0	0
Lead	Aluminum	ppm	ASTM D5185m	>25	<1	3	5
Copper	Lead		ASTM D5185m	>25	<1	6	
Tin	Copper			>50	0		<1
Vanadium         ppm         ASTM D5185m         0         <1         <1           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history1           Boron         ppm         ASTM D5185m         0         0         0         0           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Magnesium         ppm         ASTM D5185m         1         5         5           Magnesium         ppm         ASTM D5185m         145         15         104         102           Calcium         ppm         ASTM D5185m         3570         3054         3495         3327           Phosphorus         ppm         ASTM D5185m         1290         984         1053         938           Zinc         ppm         ASTM D5185m         1290         984         1053         938           Zinc         ppm         ASTM D5185m         2894         4393         3690           CO						0	<1
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history1           Boron         ppm         ASTM D5185m         6         110         0         <1							
Boron   ppm   ASTM D5185m   6							
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         0         0         2         2           Manganese         ppm         ASTM D5185m         1         5         5           Magnesium         ppm         ASTM D5185m         145         15         104         102           Calcium         ppm         ASTM D5185m         1290         984         1053         938           Zinc         ppm         ASTM D5185m         1290         984         1053         938           Zinc         ppm         ASTM D5185m         1640         1177         1292         1153           Sulfur         ppm         ASTM D5185m         2894         4393         3690           CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         >75         17         20         21           Sodium         ppm         ASTM D5185m         >20         0         8         8           VISUAL         method         limit/base         current         history1         history1           White Metal         scalar         *Visual         NONE         NONE         NONE<	Boron	ppm	ASTM D5185m	6	110	0	<1
Manganese         ppm         ASTM D5185m         1         5         5           Magnesium         ppm         ASTM D5185m         145         15         104         102           Calcium         ppm         ASTM D5185m         3570         3054         3495         3327           Phosphorus         ppm         ASTM D5185m         1290         984         1053         938           Zinc         ppm         ASTM D5185m         1640         1177         1292         1153           Sulfur         ppm         ASTM D5185m         1640         1177         1292         1153           Sulfur         ppm         ASTM D5185m         2894         4393         3690           CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         >75         17         20         21           Sodium         ppm         ASTM D5185m         >20         0         8         8           VISUAL         method         limit/base         current         history1         history1           White Metal         scalar         *Visual         NONE         NONE	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium         ppm         ASTM D5185m         145         15         104         102           Calcium         ppm         ASTM D5185m         3570         3054         3495         3327           Phosphorus         ppm         ASTM D5185m         1290         984         1053         938           Zinc         ppm         ASTM D5185m         1640         1177         1292         1153           Sulfur         ppm         ASTM D5185m         1640         1177         1292         1153           Sulfur         ppm         ASTM D5185m         2894         4393         3690           CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         >75         17         20         21           Sodium         ppm         ASTM D5185m         >20         0         8         8           VISUAL         method         limit/base         current         history1         history1           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE	Molybdenum	ppm	ASTM D5185m	0	0	2	2
Calcium         ppm         ASTM D5185m         3570         3054         3495         3327           Phosphorus         ppm         ASTM D5185m         1290         984         1053         938           Zinc         ppm         ASTM D5185m         1640         1177         1292         1153           Sulfur         ppm         ASTM D5185m         2894         4393         3690           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         17         20         21           Sodium         ppm         ASTM D5185m         >75         17         20         21           Sodium         ppm         ASTM D5185m         >20         0         8         8           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE <td>Manganese</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>1</th> <td>5</td> <td>5</td>	Manganese	ppm	ASTM D5185m		1	5	5
Phosphorus         ppm         ASTM D5185m         1290         984         1053         938           Zinc         ppm         ASTM D5185m         1640         1177         1292         1153           Sulfur         ppm         ASTM D5185m         2894         4393         3690           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >75         17         20         21           Sodium         ppm         ASTM D5185m         >75         17         20         21           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         MONE <td>Magnesium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>145</td> <th>15</th> <td>104</td> <td>102</td>	Magnesium	ppm	ASTM D5185m	145	15	104	102
Zinc         ppm         ASTM D5185m         1640         1177         1292         1153           Sulfur         ppm         ASTM D5185m         2894         4393         3690           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >75         17         20         21           Sodium         ppm         ASTM D5185m         >20         0         8         8           VISUAL         method         limit/base         current         history1         history1           White Metal         scalar         *Visual         NONE         MODER         NONE         MODER           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE           Silt         scalar         *Visual	Calcium	ppm	ASTM D5185m	3570	3054	3495	3327
Zinc         ppm         ASTM D5185m         1640         1177         1292         1153           Sulfur         ppm         ASTM D5185m         2894         4393         3690           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >75         17         20         21           Sodium         ppm         ASTM D5185m         >75         4         4         4           Potassium         ppm         ASTM D5185m         >20         0         8         8           VISUAL         method         limit/base         current         history1         history1           White Metal         scalar         *Visual         NONE         MODER         NONE         MODER           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE           Silt         scalar         *Visual         NONE         NONE         NONE         NONE           Sand/Dirt         scalar         *Visual         NONE	Phosphorus	ppm	ASTM D5185m	1290	984	1053	938
Sulfur         ppm         ASTM D5185m         2894         4393         3690           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >75         17         20         21           Sodium         ppm         ASTM D5185m         5         4         4           Potassium         ppm         ASTM D5185m         >20         0         8         8           VISUAL         method         limit/base         current         history1         history1           White Metal         scalar         *Visual         NONE         MODER         NONE         MODER           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Silt         scalar         *Visual         NONE			ASTM D5185m	1640	1177	1292	1153
Silicon         ppm         ASTM D5185m         >75         17         20         21           Sodium         ppm         ASTM D5185m         5         4         4           Potassium         ppm         ASTM D5185m         >20         0         8         8           VISUAL         method         limit/base         current         history1         history1           White Metal         scalar         *Visual         NONE         MODER         NONE         MODER           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Silt         scalar         *Visual         NONE         <	Sulfur				2894	4393	3690
Sodium         ppm         ASTM D5185m         5         4         4           Potassium         ppm         ASTM D5185m         >20         0         8         8           VISUAL         method         limit/base         current         history1         history1           White Metal         scalar         *Visual         NONE         MODER         NONE         MODER           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE <t< td=""><td>CONTAMINANTS</td><td>;</td><td>method</td><td>limit/base</td><th>current</th><td>history1</td><td>history2</td></t<>	CONTAMINANTS	;	method	limit/base	current	history1	history2
PotassiumppmASTM D5185m>20088VISUALmethodlimit/basecurrenthistory1history1White Metalscalar*VisualNONEMODERNONEMODERYellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGFree Waterscalar*VisualNEGNEGNEG	Silicon	ppm	ASTM D5185m	>75	17	20	21
VISUAL method limit/base current history1 history White Metal scalar *Visual NONE MODER NONE MODER Yellow Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE LIGHT NONE Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG	Sodium	ppm	ASTM D5185m		5	4	4
White Metal scalar *Visual NONE MODER NONE MODER Yellow Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE LIGHT NONE Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG	Potassium	ppm	ASTM D5185m	>20	0	8	8
Yellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONELIGHTNONEDebrisscalar*VisualNONENONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGFree Waterscalar*VisualNEGNEGNEG	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE LIGHT NONE Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG	White Metal	scalar	*Visual	NONE	MODER	NONE	MODER
Silt scalar *Visual NONE NONE LIGHT 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 >0.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGFree Waterscalar*VisualNEGNEGNEG	Silt	scalar	*Visual	NONE	NONE	LIGHT	NONE
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGFree Waterscalar*VisualNEGNEGNEG	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGFree Waterscalar*VisualNEGNEGNEG	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Odor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG	Appearance	scalar	*Visual	NORML		NORML	NORML
Emulsified Water       scalar       *Visual       >0.2       NEG       NEG       NEG         Free Water       scalar       *Visual       NEG       NEG       NEG	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Free Water scalar *Visual NEG NEG NEG							
FILID DDODEDTIES mathod limit/beas surrout historyd historyd							
PLOID PROPERTIES method illill/base current history nistory.	FLUID PROPERT	TIES	method	limit/base	current	history1	history2

Visc @ 40°C

cSt

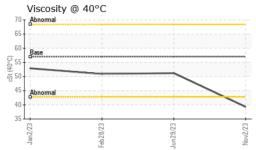
ASTM D445 57.0

51.2

50.9

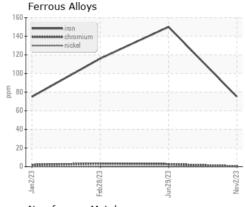


# **OIL ANALYSIS REPORT**

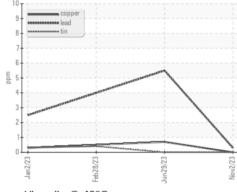


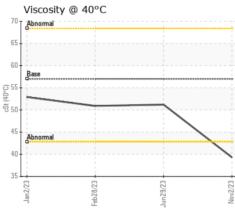


### **GRAPHS**



### Non-ferrous Metals









Certificate L2367

Laboratory Sample No. Lab Number

Unique Number : 10726672 Test Package : CONST

: WC0828481 : 05998312

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 03 Nov 2023 Diagnosed : 06 Nov 2023 Diagnostician : Don Baldridge

**DUKE LAZZARA** 4201 FAYETTEVILLE RD RALEIGH, NC US 27603

Contact: NICK DIXON

NICK.DIXON@DUKELAZZAM.COM T: (919)760-7797

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)

F: