

JOHN DEERE 000478

Component Diesel Engine

JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (29 QTS)

Sample Number Client Info JR0211127 JR0190373 Resample at the next service interval to monitor. Sample Date Client Info 11 Apr 2024 05 Oct 2027 Machine Age hrs Client Info 1970 1434 939 Oil Age hrs Client Info 536 495 467 Filter Age hrs Client Info 536 495 467 Oil Changed Client Info Changed Chan								
Resample at the next service interval to monitor. Sample Dat Machine Age Nachine Age Client Info 11 Apr 2024 (100 monitor) 11 Apr 204 (100 monitor) <	RECOMMENDATION		UOM	Method	Limit/Abn	Current	History1	History2
Component wear rates are normal. Normal Sector Status of the sector Stat	Resample at the next service interval to monitor.							
Oil Age hrs Client Info S36 495 467 Filter Changed Client Info Changed Chang			bro					
Filter Age nrs Client Info S86 495 447 OIL Changed Client Info Changed Chang		0						
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Filter Changed Sample Status Client Info Sample Status Changed NORMA Changed ATTENTION Changed NORMA Changed ATTENTION Changed NORMA All component wear rates are normal. Irin Nickel ppm 43TH B586 >51 39 32 34 All component wear rates are normal. On		•	1115					
NormalNormalNormalNormalNormalNormalNormalIronpmANU DISM>11393234All component wear rates are normal.NokelpmKNU DISM>11236TitaniumpmKNU DISM2361111DicepmKNU DISM31533111AluminumpmKNU DISM345332311CopperpmKNU DISM34111 <td< th=""><th>-</th><th></th><th></th><th></th><th>-</th><th>-</th><th></th></td<>		-				-	-	
All component wear rates are normal. Chromium Nickel ppm ASTM 05156n -11 <1		-						÷
All component wear rates are normal. Nickel ppm ASTM 0515m -5 2 3 6 Titanium ppm ASTM 0515m -3 0 -1 -1 All uminum ppm ASTM 0515m -31 0 -1 -1 Aluminum ppm ASTM 0515m -31 5 4 4 Lead ppm ASTM 0515m -31 5 4 2 Copper ppm ASTM 0515m -26 2 3 2 Tin ppm ASTM 0515m -26 1 1 1 Vanadium ppm ASTM 0515m -2 0 0 -1 White Metal scalar "Visual NONE	WEAR	Iron	ppm	ASTM D5185m	>51	39	32	34
Nucket ppm As Middletal >> 2 3 0 Silver ppm As Middletal >>1 0 <1	All component wear rates are normal.	Chromium	ppm	ASTM D5185m	>11	<1	<1	<1
Silver ppm ASTM D5185n >31 0 <1 <1 Aluminum ppm ASTM D5185n >31 5 4 4 Lead ppm ASTM D5185n >31 5 4 4 Copper ppm ASTM D5185n >26 13 29 42 Tin ppm ASTM D5185n >4 1		Nickel	ppm	ASTM D5185m	>5	2	3	6
Aluminum ppm ASTM D515m >31 5 4 4 Lead ppm ASTM D515m >26 2 3 2 Copper ppm ASTM D515m >26 2 3 2 Tin ppm ASTM D515m >4 1 1 1 Vaaduum ppm ASTM D515m >4 1 1 1 Value NONE		Titanium	ppm	ASTM D5185m		0	0	<1
Lead ppm ASTM D5185m >26 2 3 2 Copper ppm ASTM D5185m >26 13 29 42 Tin ppm ASTM D5185m 1 1 1 Vanadium ppm ASTM D5185m 0 0 <1 Vanadium ppm ASTM D5185m 0 0 <1 NONE		Silver	ppm	ASTM D5185m	>3	0	<1	<1
Copper ppm ASTM D5185m >26 13 29 42 Tin ppm ASTM D5185m >4 1 1 1 1 Vanadium ppm ASTM D5185m >4 1 1 1 1 Vanadium ppm ASTM D5185m >20 0 3 1		Aluminum	ppm			5		4
Tin ppm ASTM D5185m >4 1 1 1 Vanadium ppm ASTM D5185m 0 0 0 <1 White Metal scalar 'Visual NONE NONE NONE NONE NONE CONTAMINATION Silicon ppm ASTM D5185m >22 9 8 10 There is no indication of any contamination in the oil. Silicon ppm ASTM D5185m >22 9 8 10 Water Wo Method >2.1 <1.0 0.1 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0		Lead	ppm					
Vanadium ppm ASTM D5185m 0 0 <1			ppm			13		42
White Metal Yellow Metal scalar "Visual NONE			ppm		>4			
Yellow Metal scalar Visual NONE NONE NONE CONTAMINATION Silicon ppm ASTM 05185m >22 9 8 10 Potassium ppm ASTM 05185m >20 0 3 2 Fuel WC Method >2.1 <1.0 0.1 <1.0 Water WC Method >0.21 NEG NEG NEG Soot % % 4STM 0784d >3 0.5 0.4 0.4 Nitration Abs/cm 'ASTM 0784d >3 0.5 0.4 0.4 Silitaion % 'ASTM 0784d >3 0.5 0.4 0.4 Silitaion Abs/cm 'ASTM 0784d >3 0.5 0.4 0.4 Silitaion scalar 'Visual NONE NONE NONE NONE Solit scalar 'Visual NORE NORE NORE NORE Appearance scalar 'Visual NORH <						-		
Silicon ppm ASTM 55185m >22 9 8 10 There is no indication of any contamination in the oil. Potassium ppm ASTM 05185m >20 0 3 2 Fuel WC Method >2.1 <1.0			scalar					
Potassium ppm ASTM D5185m >20 0 3 2 Fuel WC Method >2.1 <1.0 0.1 <1.0 Water WC Method >0.21 NEG NEG NEG Glycol WC Method >0.21 NEG NEG NEG NEG Soot % % 'ASTM D7844 >3 0.5 0.4 0.4 0.4 Nitration Abs/cm 'ASTM D7844 >3 0.5 0.4 0.4 Silt scalar 'Visual NONE NORM		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Potassium ppm ASTM D5185m >20 0 3 2 Fuel WC Method >2.1 <1.0 0.1 <1.0 Water WC Method >0.21 NEG NEG NEG Glycol WC Method >0.21 NEG NEG NEG NEG Soot % % 'ASTM D7844 >3 0.5 0.4 0.4 0.4 Nitration Abs/cm 'ASTM D7844 >3 0.5 0.4 0.4 Silt scalar 'Visual NONE NORM	CONTAMINATION	Silicon	ppm	ASTM D5185m	>22	9	8	10
FLUID VOID VOID <t< th=""><th></th><th>Potassium</th><th>ppm</th><th>ASTM D5185m</th><th>>20</th><th>0</th><th>3</th><th>2</th></t<>		Potassium	ppm	ASTM D5185m	>20	0	3	2
Glycol WC Method NEG NEG NEG NEG NEG Soot % % *ASTM D784 >3 0.5 0.4 0.4 Nitration Abs/cm *ASTM D784 >30 9.1 8.0 8.7 Sulfation Abs/cm *ASTM D784 >30 2.3.8 24.0 2.3.0 Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NOR NORM	There is no indication of any contamination in the oil.	Fuel		WC Method	>2.1	<1.0	0.1	<1.0
Soot % % *ASTM D7844 >3 0.5 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 9.1 8.0 8.7 Sulfation Abs/tm *ASTM D7624 >20 9.1 8.0 8.7 Sulfation Abs/tm *ASTM D7624 >20 9.0 23.8 24.0 23.0 Silt scalar *Visual NONE NORM		Water		WC Method	>0.21	NEG	NEG	NEG
Nitration Abs/cm 'ASTM D7624 >20 9.1 8.0 8.7 Sulfation Abs/tm 'ASTM D7415 >30 23.8 24.0 23.0 Silt scalar 'Visual NONE NORE NORE <t< th=""><th>Glycol</th><th></th><th>WC Method</th><th></th><th>NEG</th><th>NEG</th><th>NEG</th></t<>		Glycol		WC Method		NEG	NEG	NEG
Sulfation Abs/.tm *ASTM D7415 >30 23.8 24.0 23.0 Silt scalar *Visual NONE NORM NORM<			%					
Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Appearance scalar *Visual NORE NORE NORE NORE NORE Appearance scalar *Visual NORE NORE NORE NORE NORE Odor scalar *Visual NORE NORE NORE NORE NORE Emulsified Water scalar *Visual NORE NORE NORE NORE NORE FLUID CONDITION Sodium pp ASTM D5185 >31 2 3 2 Boron pp ASTM D5185 I 150 98 189 Barium pm ASTM D5185 I 149 280 Maganesium pm ASTM D5185 I 149 280 Calcium pm ASTM D5185 I 14 1								
Debrisscalar*VisualNONENONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONENONEAppearancescalar*VisualNORMLNO			Abs/.1mm	*ASTM D7415	>30			
Sand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMNORML								
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Odorscalar*VisualNORML <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>								
Emulsified Waterscalar*Visual>0.21NEGNEGNEGFLUID CONDITIONSodiumppmASTM D5185m>31232BoronppmASTM D5185m531232BariumppmASTM D5185m0000MolybdenumppmASTM D5185m000280ManganeseppmASTM D5185m0<149280MagnesiumppmASTM D5185m<<1<11MagnesiumppmASTM D5185m<85775344810CalciumppmASTM D5185m<9669944861ZincppmASTM D5185m116511871089SulfurppmASTM D5185m3365302923222OxidationAbs/.1mm*ASTM D7141>2519.616.918.6						-		
Sodium ppm ASTM D5185m >31 2 3 2 Boron ppm ASTM D5185m 150 98 189 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 2 149 280 Manganese ppm ASTM D5185m 2 149 280 Manganese ppm ASTM D5185m 6 1 1 Magnesium ppm ASTM D5185m 857 534 810 Calcium ppm ASTM D5185m 1722 2310 1445 Phosphorus ppm ASTM D5185m 966 994 861 Zinc ppm ASTM D5185m 1165 1187 1089 Sulfur ppm ASTM D5185m 3365 3029 3222 Oxidation Abs/im<*ASTM D7414<>25 19.6 16.9 18.6								
BoronppmASTM D5185m15098189The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.pm $ASTM D5185m$ 000Molybdenumppm $ASTM D5185m$ 1220149280Manganeseppm $ASTM D5185m$ <<11Magnesiumppm $ASTM D5185m$ <<534810Calciumppm $ASTM D5185m$ <534810Phosphorusppm $ASTM D5185m$ 966994861Zincppm $ASTM D5185m$ 116511871089Sulfurppm $ASTM D5185m$ 336530293222Oxidation $Abs/.1mm$ "ASTM D7141>2519.616.918.6		Emulsified Water	scalar	*Visual	>0.21	NEG	NEG	NEG
BoronppmASTM D5185m15098189The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.pm $ASTM D5185m$ 000Molybdenumppm $ASTM D5185m$ 1220149280Manganeseppm $ASTM D5185m$ <<11Magnesiumppm $ASTM D5185m$ <<534810Calciumppm $ASTM D5185m$ <534810Phosphorusppm $ASTM D5185m$ 966994861Zincppm $ASTM D5185m$ 116511871089Sulfurppm $ASTM D5185m$ 336530293222Oxidation $Abs/.1mm$ "ASTM D7141>2519.616.918.6	FLUID CONDITION	Sodium	ppm	ASTM D5185m	>31	2	3	2
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service. Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 220 149 280 Manganese ppm ASTM D5185m <1 <1 1 Magnesium ppm ASTM D5185m <857 534 810 Calcium ppm ASTM D5185m <1722 2310 1445 Phosphorus ppm ASTM D5185m <966 994 861 Zinc ppm ASTM D5185m 1165 1187 1089 Sulfur ppm ASTM D5185m 3365 3029 3222 Oxidation Abs/.1mm *ASTM D7141 >25 19.6 16.9 18.6		Boron		ASTM D5185m		150	98	189
Molybdenum ppm ASTM D5185m 220 149 280 Manganese ppm ASTM D5185m <1	, ,							
Manganese ppm ASTM D5185m <1 <1 Magnesium ppm ASTM D5185m 857 534 810 Calcium ppm ASTM D5185m 1722 2310 1445 Phosphorus ppm ASTM D5185m 966 994 861 Zinc ppm ASTM D5185m 1165 1187 1089 Sulfur ppm ASTM D5185m 3365 3029 3222 Oxidation Abs/.1mm *ASTM D7414 >25 19.6 16.9 18.6								
Magnesium ppm ASTM D5185m 857 534 810 Calcium ppm ASTM D5185m 1722 2310 1445 Phosphorus ppm ASTM D5185m 966 994 861 Zinc ppm ASTM D5185m 1165 1187 1089 Sulfur ppm ASTM D5185m 1365 3029 3222 Oxidation Abs/.1mm *ASTM D7414 >25 19.6 16.9 18.6		Manganese						
Phosphorus ppm ASTM D5185m 966 994 861 Zinc ppm ASTM D5185m 1165 1187 1089 Sulfur ppm ASTM D5185m 3365 3029 3222 Oxidation Abs/.1mm *ASTM D7414 >25 19.6 16.9 18.6		Magnesium	ppm	ASTM D5185m		857	534	810
Phosphorus ppm ASTM D5185m 966 994 861 Zinc ppm ASTM D5185m 1165 1187 1089 Sulfur ppm ASTM D5185m 3365 3029 3222 Oxidation Abs/.1mm *ASTM D7414 >25 19.6 16.9 18.6		-				1722	2310	
Zinc ppm ASTM D5185m 1165 1187 1089 Sulfur ppm ASTM D5185m 3365 3029 3222 Oxidation Abs/.1mm *ASTM D7414 >25 19.6 16.9 18.6		Phosphorus		ASTM D5185m		966		861
Sulfur ppm ASTM D5185m 3365 3029 3222 Oxidation Abs/.1mm *ASTM D7414 >25 19.6 16.9 18.6		Zinc	ppm	ASTM D5185m			1187	1089
		Sulfur		ASTM D5185m		3365	3029	3222
Base Number (BN) mg KOH/g ASTM D2896 13.6 7.9 8.1 7.5		Oxidation	Abs/.1mm	*ASTM D7414	>25	19.6	16.9	18.6
		Base Number (BN)	mg KOH/g	ASTM D2896	13.6	7.9	8.1	7.5

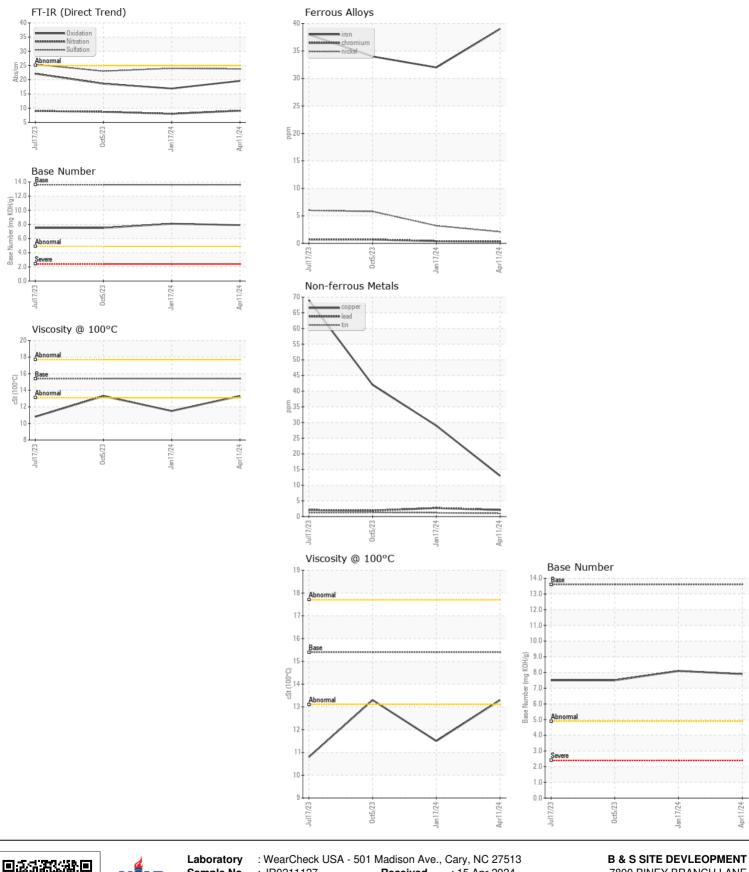
Visc @ 100°C cSt

ASTM D445 15.4

11.5

13.3

13.3



B & S SITE DEVLEOPMENT Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : JR0211127 Received 7800 PINEY BRANCH LANE : 15 Apr 2024 Lab Number : 06149270 Tested BRISTOW, VA : 16 Apr 2024 Unique Number : 10979348 Diagnosed : 16 Apr 2024 - Wes Davis US 20136 Test Package : CONST (Additional Tests: TBN) Contact: DANNY HUFF Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. dhuff@bandssite.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (540)270-3203 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (703)753-0605

Submitted By: TECHNICIAN ACCOUNT Page 2 of 2