

OIL ANALYSIS REPORT

Sample Rating Trend



JOHN DEERE 524 P 1DW524PAHNLZ15393

Component

Rear Differential

NOT GIVEN (--- GAL)

Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

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 JR0179961 JR0163871 Sample Date Client Info 27 Sep 2023 10 Mar 2023 Machine Age hrs Client Info 1068 530 Oil Changed Client Info 1068 530 Oil Changed Client Info Not Changd Changed Sample Status NORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 hist FORD ASTM D8185m 500 168 127 Iron ppm ASTM D5185m >500 168 127 Iron ppm ASTM D5185m >500 168 127 Iron ppm ASTM D5185m >10 1 <1 Nickel ppm ASTM D5185m >10 1 <1 Silver ppm ASTM D5185m >25				Mar2023	Sep 2023		
Sample Date Client Info 27 Sep 2023 10 Mar 2023	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 1068 530 Oil Age hrs Client Info 1068 530 Oil Changed Client Info Not Changed Sample Status NORMAL NORMAL WEAR METALS method limit/base current history1 hist PQ ASTM D8184 70 74 Iron ppm ASTM D5185m >500 168 127 Chromium ppm ASTM D5185m >10 1 1 Nickel ppm ASTM D5185m >10 1 <1	Sample Number		Client Info		JR0179961	JR0163871	
Oil Age hrs Client Info 1068 530 Oil Changed Client Info Not Changd Changed Sample Status NORMAL NORMAL WEAR METALS method limit/base current history1 hist PQ ASTM D5185m >500 168 127 Chromium ppm ASTM D5185m >10 1 1 Nickel ppm ASTM D5185m >10 1 1 Silver ppm ASTM D5185m >10 1 Silver ppm ASTM D5185m >25 3 2 Aluminum ppm ASTM D5185m >25 8 7 Aluminum ppm ASTM D5185m >10 1 1 Lead ppm ASTM D5185m >10 <1 1 Copper ppm ASTM D	Sample Date		Client Info		27 Sep 2023	10 Mar 2023	
Oil Changed Sample Status Client Info Not Changd NORMAL Changed NORMAL WEAR METALS method limit/base current history1 hist PQ ASTM D8184 70 74 Iron ppm ASTM D5185m >500 168 127 Chromium ppm ASTM D5185m >10 1 1 Nickel ppm ASTM D5185m >10 1 -1 Titanium ppm ASTM D5185m >10 1 -1 Aluminum ppm ASTM D5185m >25 3 2 Aluminum ppm ASTM D5185m >25 8 7 Aluminum ppm ASTM D5185m >10 10 16 Copper ppm ASTM D5185m >10 1 1 Vanadium ppm ASTM D5185m 0 0	Machine Age	hrs	Client Info		1068	530	
NORMAL N	Oil Age	hrs	Client Info		1068	530	
WEAR METALS method limit/base current history1 hist PQ ASTM D81844 70 74 Iron ppm ASTM D5185m >500 168 127 Chromium ppm ASTM D5185m >10 1 1 Nickel ppm ASTM D5185m >10 1 -1 Titanium ppm ASTM D5185m >10 0 0 Aluminum ppm ASTM D5185m >25 3 2 Aluminum ppm ASTM D5185m >25 8 7 Aluminum ppm ASTM D5185m >25 8 7 Lead ppm ASTM D5185m >10 10 16 Copper ppm ASTM D5185m >10 1 1 Vanadium ppm ASTM D5185m 0 0 0 <td>Oil Changed</td> <td></td> <td>Client Info</td> <td></td> <td>Not Changd</td> <td>Changed</td> <td></td>	Oil Changed		Client Info		Not Changd	Changed	
PQ	Sample Status				NORMAL	NORMAL	
Irron	WEAR METALS		method	limit/base	current	history1	history2
Chromium ppm ASTM D5185m >10 1 1	PQ		ASTM D8184		70	74	
Nickel ppm ASTM D5185m >10 1 <1 Tittanium ppm ASTM D5185m <1	Iron	ppm	ASTM D5185m	>500	168	127	
Titanium ppm ASTM D5185m <1 <1 Silver ppm ASTM D5185m 0 0 Aluminum ppm ASTM D5185m >25 3 2 Aluminum ppm ASTM D5185m >25 8 7 Lead ppm ASTM D5185m >100 10 16 Copper ppm ASTM D5185m >10 <1 1 Vanadium ppm ASTM D5185m 0 0 Vanadium ppm ASTM D5185m 0 0 Cadmium ppm ASTM D5185m 3 1 ADDITIVES method limit/base current history1 hist Boron ppm ASTM D5185m 3 1 ADDITIVES method limit/base current history1 hist Boron ppm ASTM D5185m	Chromium	ppm	ASTM D5185m	>10	1	1	
Silver ppm ASTM D5185m 0 0 Aluminum ppm ASTM D5185m >25 3 2 Lead ppm ASTM D5185m >25 8 7 Copper ppm ASTM D5185m >100 10 16 Tin ppm ASTM D5185m >10 <1	Nickel	ppm	ASTM D5185m	>10	1	<1	
Aluminum ppm ASTM D5185m >25 3 2	Titanium	ppm	ASTM D5185m		<1	<1	
Lead ppm ASTM D5185m >25 8 7 Copper ppm ASTM D5185m >100 10 16 Tin ppm ASTM D5185m >10 <1	Silver	ppm	ASTM D5185m		0	0	
Copper ppm ASTM D5185m >100 10 16 Tin ppm ASTM D5185m >10 <1	Aluminum	ppm	ASTM D5185m	>25	3	2	
Tin ppm ASTM D5185m >10 <1 1 Vanadium ppm ASTM D5185m 0 0 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 hist Boron ppm ASTM D5185m 3 1 Barium ppm ASTM D5185m 3 4 Barium ppm ASTM D5185m 2 2 Molybdenum ppm ASTM D5185m 5 6 Magnesium ppm ASTM D5185m 102 92 Magnesium ppm ASTM D5185m 3433 3326 Phosphorus ppm ASTM D5185m 1044 939 Zinc ppm ASTM D5185m 1230 1205 Sulfur ppm ASTM D5185m 3992 4017	Lead	ppm	ASTM D5185m	>25	8	7	
Vanadium ppm ASTM D5185m 0 0 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 hist Boron ppm ASTM D5185m 3 1 Barium ppm ASTM D5185m 3 4 Molybdenum ppm ASTM D5185m 2 2 2 Manganese ppm ASTM D5185m 5 6 Magnesium ppm ASTM D5185m 102 92 Calcium ppm ASTM D5185m 3433 3326 Phosphorus ppm ASTM D5185m 1044 939 Zinc ppm ASTM D5185m 1230 1205 Sulfur ppm ASTM D5185m 3992 4017 CONTAMINANTS method limit/base curre	Copper	ppm	ASTM D5185m	>100	10	16	
Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 hist Boron ppm ASTM D5185m 3 1 Barium ppm ASTM D5185m 3 4 Molybdenum ppm ASTM D5185m 2 2 Manganese ppm ASTM D5185m 5 6 Magnesium ppm ASTM D5185m 102 92 Calcium ppm ASTM D5185m 3433 3326 Phosphorus ppm ASTM D5185m 1044 939 Zinc ppm ASTM D5185m 1230 1205 Sulfur ppm ASTM D5185m 3992 4017 CONTAMINANTS method limit/base current history1 hist Sodium ppm ASTM D5185m >75 15 14 </td <td>Tin</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>10</td> <td><1</td> <td>1</td> <td></td>	Tin	ppm	ASTM D5185m	>10	<1	1	
ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 3 1 Barium ppm ASTM D5185m 3 4 Molybdenum ppm ASTM D5185m 2 2 Manganese ppm ASTM D5185m 5 6 Magnesium ppm ASTM D5185m 102 92 Calcium ppm ASTM D5185m 3433 3326 Phosphorus ppm ASTM D5185m 1044 939 Zinc ppm ASTM D5185m 1230 1205 Sulfur ppm ASTM D5185m 3992 4017 CONTAMINANTS method limit/base current history1 hist Sodium ppm ASTM D5185m 3 6 Potassium ppm ASTM D5185m >20 2 <td< td=""><td>Vanadium</td><td>ppm</td><td>ASTM D5185m</td><td></td><td>0</td><td>0</td><td></td></td<>	Vanadium	ppm	ASTM D5185m		0	0	
Boron ppm ASTM D5185m 3 1 Barium ppm ASTM D5185m 3 4 Molybdenum ppm ASTM D5185m 2 2 Manganese ppm ASTM D5185m 5 6 Magnesium ppm ASTM D5185m 102 92 Calcium ppm ASTM D5185m 3433 3326 Phosphorus ppm ASTM D5185m 1044 939 Zinc ppm ASTM D5185m 1230 1205 Sulfur ppm ASTM D5185m 3992 4017 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >75 15 14 Sodium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current	Cadmium	ppm	ASTM D5185m		0	0	
Barium ppm ASTM D5185m 3 4 Molybdenum ppm ASTM D5185m 2 2 Manganese ppm ASTM D5185m 5 6 Magnesium ppm ASTM D5185m 102 92 Calcium ppm ASTM D5185m 3433 3326 Phosphorus ppm ASTM D5185m 1044 939 Zinc ppm ASTM D5185m 1230 1205 Sulfur ppm ASTM D5185m 3992 4017 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >75 15 14 Sodium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current history1 hist	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 2 2 Manganese ppm ASTM D5185m 5 6 Magnesium ppm ASTM D5185m 102 92 Calcium ppm ASTM D5185m 3433 3326 Phosphorus ppm ASTM D5185m 1044 939 Zinc ppm ASTM D5185m 1230 1205 Sulfur ppm ASTM D5185m 3992 4017 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >75 15 14 Sodium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current history1 hist	Boron	ppm	ASTM D5185m		3	1	
Manganese ppm ASTM D5185m 5 6 Magnesium ppm ASTM D5185m 102 92 Calcium ppm ASTM D5185m 3433 3326 Phosphorus ppm ASTM D5185m 1044 939 Zinc ppm ASTM D5185m 1230 1205 Sulfur ppm ASTM D5185m 3992 4017 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >75 15 14 Sodium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current history1 hist	Barium	ppm	ASTM D5185m		3	4	
Magnesium ppm ASTM D5185m 102 92 Calcium ppm ASTM D5185m 3433 3326 Phosphorus ppm ASTM D5185m 1044 939 Zinc ppm ASTM D5185m 1230 1205 Sulfur ppm ASTM D5185m 3992 4017 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >75 15 14 Sodium ppm ASTM D5185m 3 6 Potassium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current history1 hist	Molybdenum	ppm	ASTM D5185m		2	2	
Calcium ppm ASTM D5185m 3433 3326 Phosphorus ppm ASTM D5185m 1044 939 Zinc ppm ASTM D5185m 1230 1205 Sulfur ppm ASTM D5185m 3992 4017 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >75 15 14 Sodium ppm ASTM D5185m 3 6 Potassium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current history1 hist	Manganese	ppm	ASTM D5185m		5	6	
Phosphorus ppm ASTM D5185m 1044 939 Zinc ppm ASTM D5185m 1230 1205 Sulfur ppm ASTM D5185m 3992 4017 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >75 15 14 Sodium ppm ASTM D5185m 3 6 Potassium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current history1 hist	Magnesium	ppm	ASTM D5185m		102	92	
Zinc ppm ASTM D5185m 1230 1205 Sulfur ppm ASTM D5185m 3992 4017 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >75 15 14 Sodium ppm ASTM D5185m 3 6 Potassium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current history1 hist	Calcium	ppm	ASTM D5185m		3433	3326	
Sulfur ppm ASTM D5185m 3992 4017 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >75 15 14 Sodium ppm ASTM D5185m 3 6 Potassium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current history1 hist	Phosphorus	ppm	ASTM D5185m		1044	939	
CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >75 15 14 Sodium ppm ASTM D5185m 3 6 Potassium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current history1 hist	Zinc	ppm	ASTM D5185m		1230	1205	
Silicon ppm ASTM D5185m >75 15 14 Sodium ppm ASTM D5185m 3 6 Potassium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current history1 hist	Sulfur	ppm	ASTM D5185m		3992	4017	
Sodium ppm ASTM D5185m 3 6 Potassium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current history1 hist	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m 3 6 Potassium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current history1 hist	Silicon	ppm	ASTM D5185m	>75	15	14	
Potassium ppm ASTM D5185m >20 2 3 VISUAL method limit/base current history1 history1	Sodium		ASTM D5185m		3	6	
·	Potassium		ASTM D5185m	>20	2	3	
White Metal scalar *Visual NONE NONE NONE	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	

Yellow Metal

Precipitate

Silt

Debris

Odor

Sand/Dirt

Appearance

Free Water

Emulsified Water

scalar *Visual

scalar *Visual

scalar *Visual

scalar *Visual

scalar *Visual

scalar

scalar

scalar

scalar

*Visual

*Visual

*Visual

*Visual

NONE

NONE

NONE

NONE

NONE

NORML

NORML

>.2

NONE

NONE

NONE

NONE

NONE

NORML

NORML

NEG

NEG

NONE

NONE

NONE

NONE

NONE

NORML

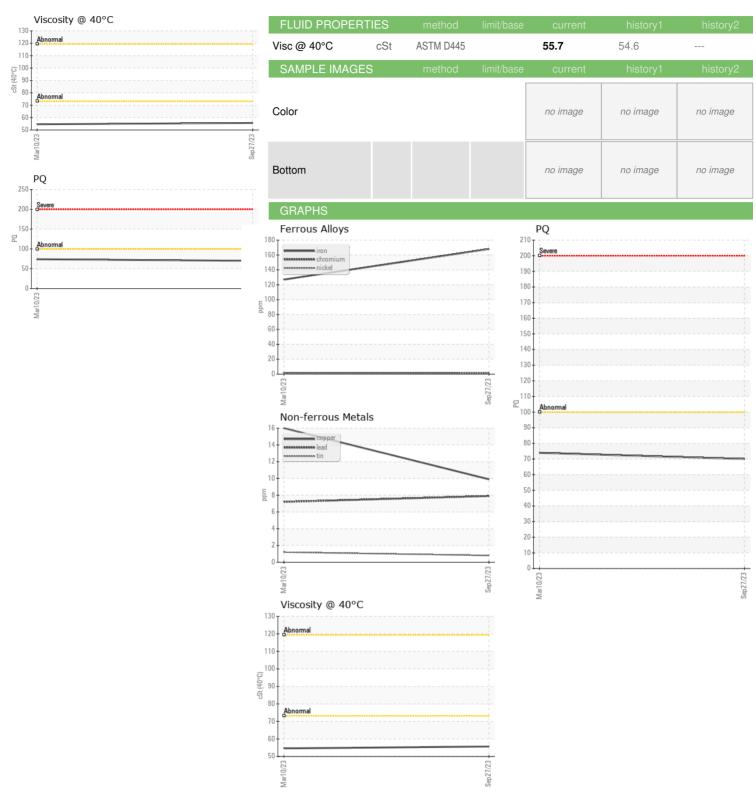
NORML

NEG

NEG



OIL ANALYSIS REPORT







Laboratory Sample No. Lab Number Unique Number

: JR0179961 : 05963705 : 10670256

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 28 Sep 2023 Diagnosed Diagnostician : Sean Felton

: 29 Sep 2023

JRE - ASHLAND 11047 LEADBETTER RD ASHLAND, VA US 23005

Test Package : CONST (Additional Tests: PQ) Contact: DAVID ZIEG To discuss this sample report, contact Customer Service at 1-800-237-1369. dzieg@jamesriverequipment.com

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (804)798-6001 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (804)798-0292