



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Area  
**[W65260-1]**  
 Machine Id  
**JOHN DEERE 310E 1DW310EXVMF710644**  
 Component  
**Diesel Engine**  
 Fluid  
**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (9 GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0206351</b>	JR0203650	JR0170705
Sample Date		Client Info		<b>14 Mar 2024</b>	29 Jan 2024	15 Jul 2023
Machine Age	hrs	Client Info		<b>3302</b>	2640	2640
Oil Age	hrs	Client Info		<b>0</b>	3299	2060
Filter Age	hrs	Client Info		<b>0</b>	3299	0
Oil Changed		Client Info		<b>Not Chngd</b>	Changed	Changed
Filter Changed		Client Info		<b>Not Chngd</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	<b>20</b>	38	40
Chromium	ppm	ASTM D5185m	>11	<b>0</b>	<1	1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	4	7
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>31	<b>3</b>	9	7
Lead	ppm	ASTM D5185m	>26	<b>0</b>	<1	2
Copper	ppm	ASTM D5185m	>26	<b>3</b>	27	2
Tin	ppm	ASTM D5185m	>4	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

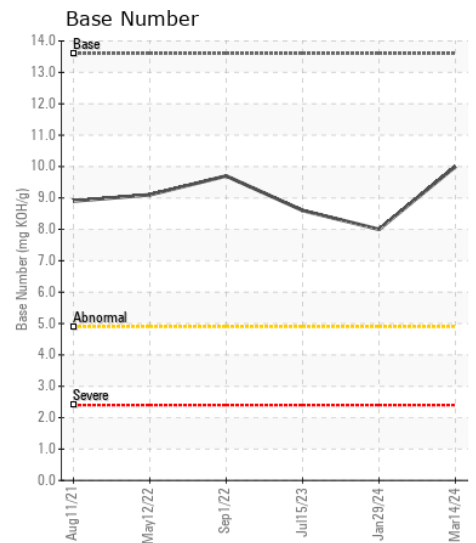
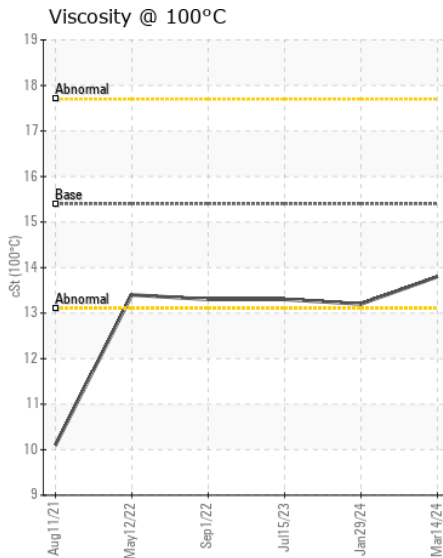
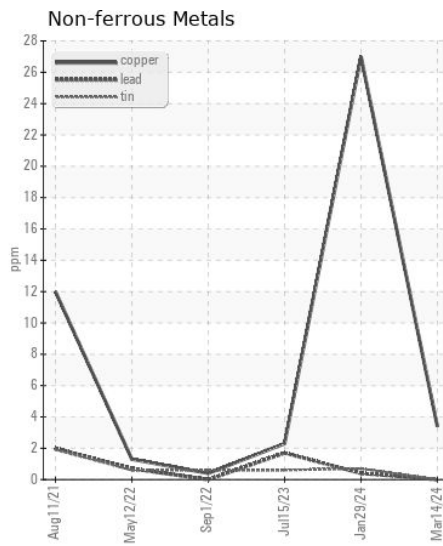
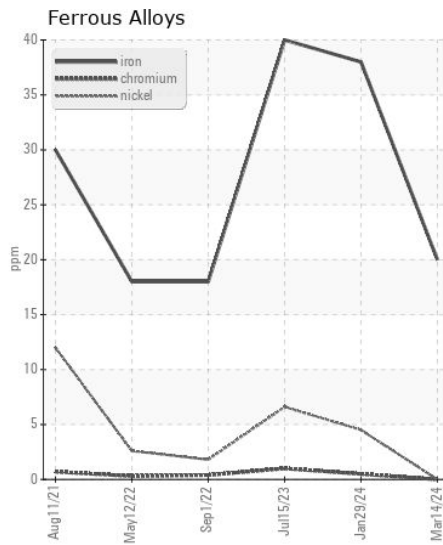
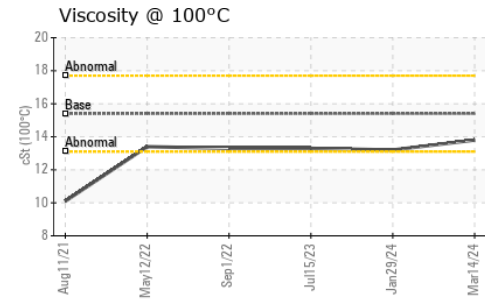
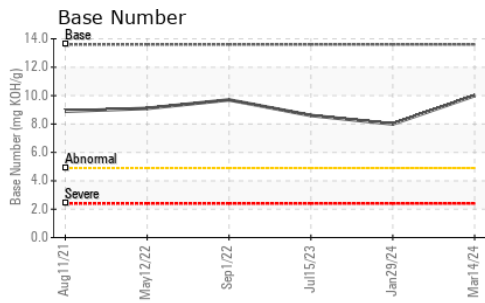
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>22	<b>7</b>	7	8
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	3	3
Fuel		WC Method	>2.1	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.21	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.9</b>	8.6	8.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.9</b>	22.6	21.3
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.21	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>31	<b>0</b>	1	2
Boron	ppm	ASTM D5185m		<b>243</b>	169	241
Barium	ppm	ASTM D5185m		<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185m		<b>232</b>	248	256
Manganese	ppm	ASTM D5185m		<b>0</b>	1	1
Magnesium	ppm	ASTM D5185m		<b>828</b>	804	897
Calcium	ppm	ASTM D5185m		<b>1450</b>	1375	1596
Phosphorus	ppm	ASTM D5185m		<b>911</b>	881	967
Zinc	ppm	ASTM D5185m		<b>1077</b>	1064	1161
Sulfur	ppm	ASTM D5185m		<b>3623</b>	2803	3798
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.5</b>	15.7	15.2
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	<b>10.0</b>	8.0	8.6
Visc @ 100°C	cSt	ASTM D445	15.4	<b>13.8</b>	13.2	13.3



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0206351 **Received** : 19 Mar 2024  
**Lab Number** : 06122086 **Tested** : 19 Mar 2024  
**Unique Number** : 10936237 **Diagnosed** : 19 Mar 2024 - Wes Davis  
**Test Package** : CONST ( Additional Tests: TBN )

**CARLTON'S BACKHOE**  
 9550 STATESVILLE ROAD  
 CHARLOTTE, NC  
 US 28269  
 Contact: LEO

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: (704)547-0211

F: