



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
JOHN DEERE 310E 1DW310EXTMF712385

Component
Diesel Engine

Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0224494	JR0199661	JR0194546
Sample Date		Client Info		13 Jul 2024	30 Apr 2024	27 Dec 2023
Machine Age	hrs	Client Info		2930	2521	2175
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	N/A
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	16	19	21
Chromium	ppm	ASTM D5185m	>11	<1	<1	0
Nickel	ppm	ASTM D5185m	>5	2	2	4
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>31	4	6	21
Lead	ppm	ASTM D5185m	>26	<1	<1	0
Copper	ppm	ASTM D5185m	>26	1	2	7
Tin	ppm	ASTM D5185m	>4	<1	<1	2
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

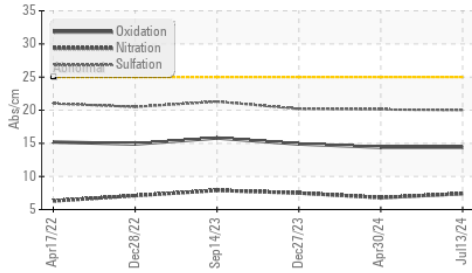
Silicon	ppm	ASTM D5185m	>22	7	8	21
Potassium	ppm	ASTM D5185m	>20	2	3	1
Fuel		WC Method	>2.1	<1.0	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	0.0
Soot %	%	*ASTM D7844	>3	0.2	0.1	0.2
Nitration	Abs/cm	*ASTM D7624	>20	7.4	6.8	7.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.0	20.1	20.2
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	▲ MODER
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	>0.21	NEG	NEG	▲ 0.2%

FLUID CONDITION

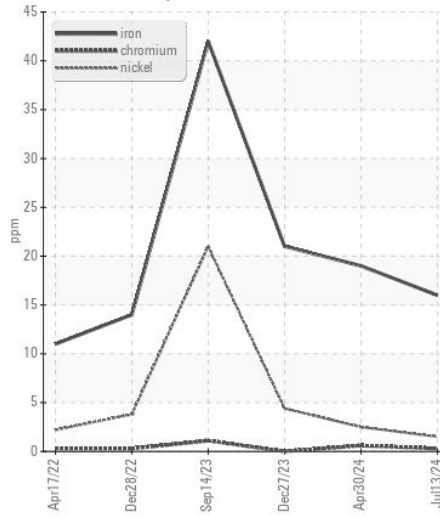
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>31	0	<1	<1
Boron	ppm	ASTM D5185m		227	320	288
Barium	ppm	ASTM D5185m		2	0	0
Molybdenum	ppm	ASTM D5185m		224	244	241
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		696	783	824
Calcium	ppm	ASTM D5185m		1457	1370	1365
Phosphorus	ppm	ASTM D5185m		926	898	946
Zinc	ppm	ASTM D5185m		1081	1050	1161
Sulfur	ppm	ASTM D5185m		3278	3290	3171
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.4	14.4	14.9
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	9.3	9.2	9.5
Visc @ 100°C	cSt	ASTM D445	15.4	13.2	13.3	13.7

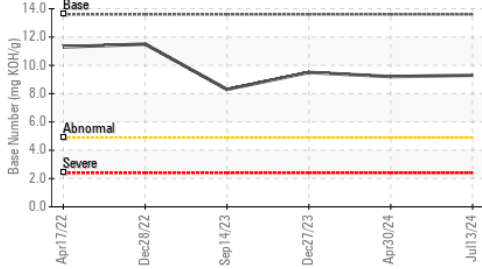
FT-IR (Direct Trend)



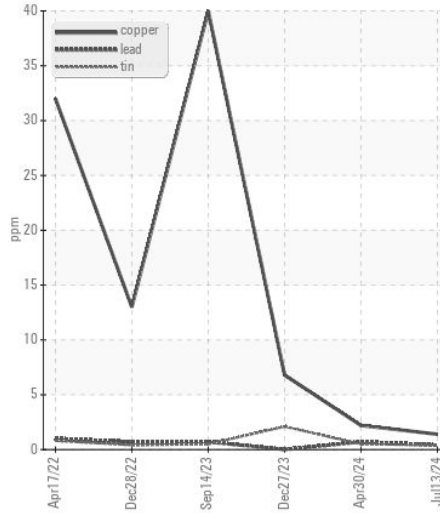
Ferrous Alloys



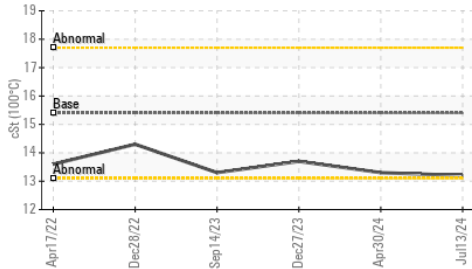
Base Number



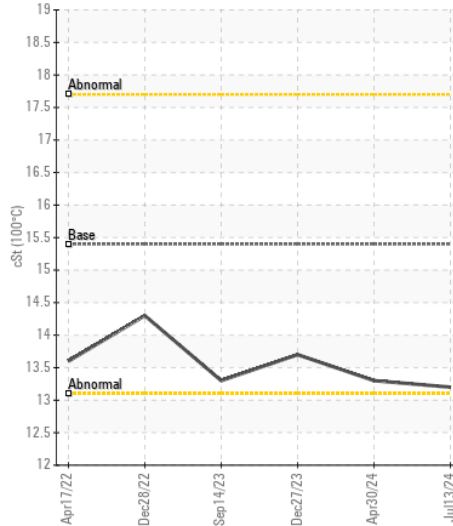
Non-ferrous Metals



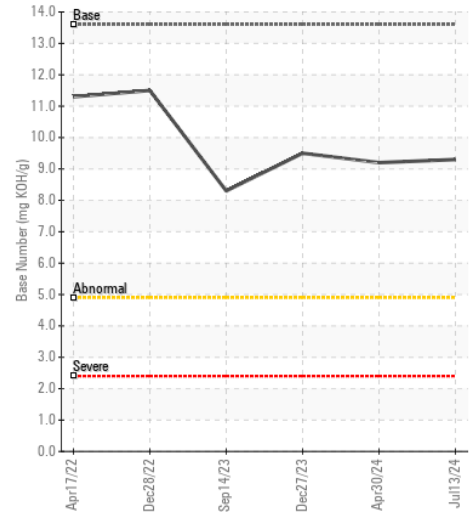
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0224494 **Received** : 17 Jul 2024
Lab Number : 06238968 **Tested** : 18 Jul 2024
Unique Number : 11127802 **Diagnosed** : 18 Jul 2024 - Wes Davis
Test Package : CONST (Additional Tests: TBN)

JRE - ASHLAND
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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)