



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
JOHN DEERE 310E 1DW310EXPLF706554
Component
Diesel Engine
Fluid
{not provided} (--- GAL)

RECOMMENDATION

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

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0220478	JR0205376	JR0189113
Sample Date		Client Info		15 Jun 2024	22 Mar 2024	03 Nov 2023
Machine Age	hrs	Client Info		4496	4216	4055
Oil Age	hrs	Client Info		4335	161	588
Filter Age	hrs	Client Info		0	161	0
Oil Changed		Client Info		Changed	N/A	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	29	26	26
Chromium	ppm	ASTM D5185m	>11	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	1	2
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>31	5	6	7
Lead	ppm	ASTM D5185m	>26	0	<1	0
Copper	ppm	ASTM D5185m	>26	<1	<1	<1
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
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.

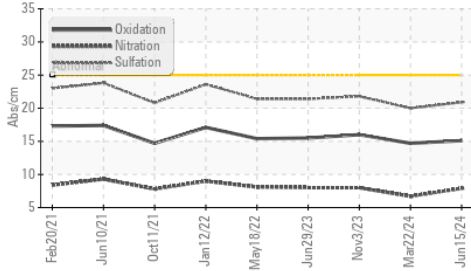
Silicon	ppm	ASTM D5185m	>22	11	8	9
Potassium	ppm	ASTM D5185m	>20	34	3	<1
Fuel		WC Method	>2.1	<1.0	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.1	0.4
Nitration	Abs/cm	*ASTM D7624	>20	7.9	6.7	8.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.9	20.0	21.8
Silt	scalar	*Visual	NONE	NONE	NONE	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	>0.21	NEG	NEG	NEG

FLUID CONDITION

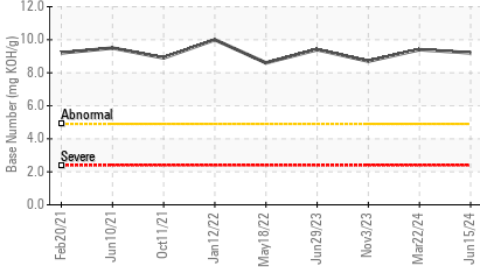
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>31	94	7	6
Boron	ppm	ASTM D5185m		174	258	214
Barium	ppm	ASTM D5185m		0	0	<1
Molybdenum	ppm	ASTM D5185m		234	242	266
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		767	807	882
Calcium	ppm	ASTM D5185m		1423	1353	1497
Phosphorus	ppm	ASTM D5185m		891	912	956
Zinc	ppm	ASTM D5185m		1001	1060	1219
Sulfur	ppm	ASTM D5185m		3359	3407	3310
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.1	14.7	16.0
Base Number (BN)	mg KOH/g	ASTM D2896		9.2	9.4	8.7
Visc @ 100°C	cSt	ASTM D445		13.3	13.5	13.2

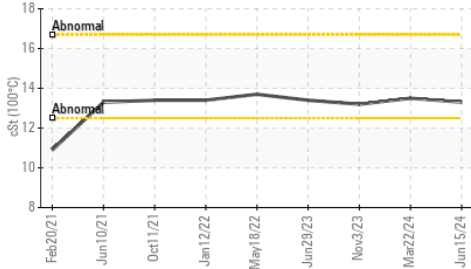
FT-IR (Direct Trend)



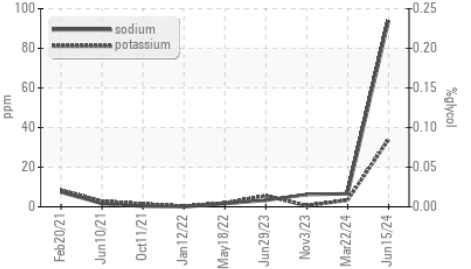
Base Number



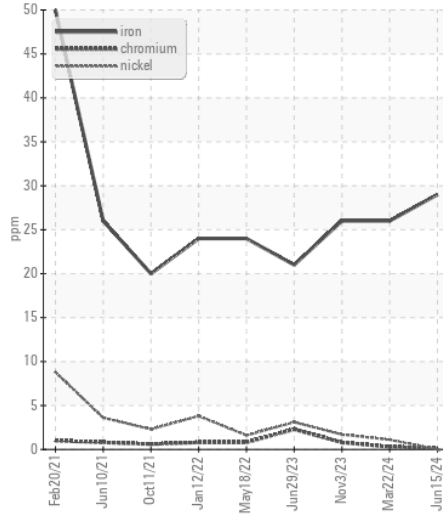
Viscosity @ 100°C



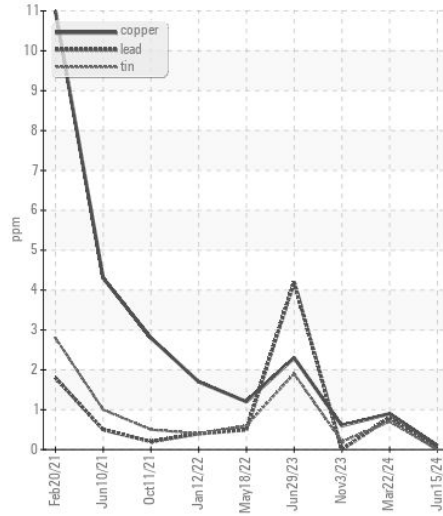
Glycol Contamination



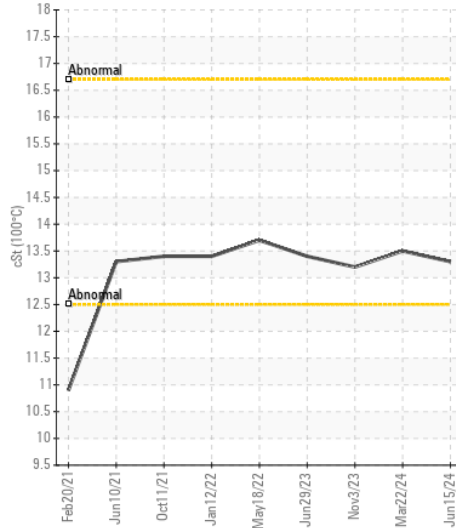
Ferrous Alloys



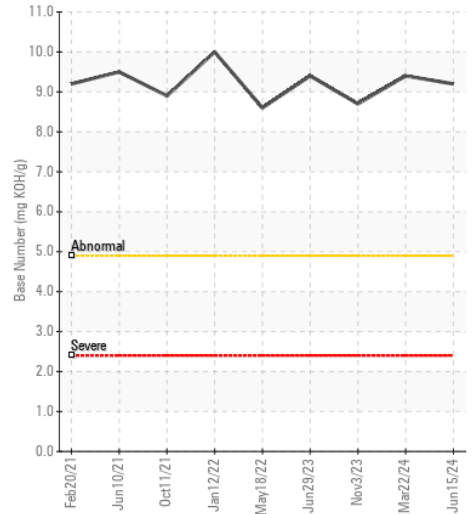
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0220478 **Received** : 19 Jun 2024
Lab Number : 06214368 **Tested** : 21 Jun 2024
Unique Number : 11087232 **Diagnosed** : 21 Jun 2024 - Don Baldrige
Test Package : CONST (Additional Tests: Glycol, TBN)

JRE - CHARLOTTE
 9550 STATESVILLE ROAD
 CHARLOTTE, NC
 US 28269

Contact: CHARLOTTE SHOP
 myoung@jamesriverequipment.com

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)

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