



Machine Id
JOHN DEERE 310SG T0310SG959732

Component
Diesel Engine

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

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0218332	---	---
Sample Date		Client Info		16 Jun 2024	---	---
Machine Age	hrs	Client Info		3337	---	---
Oil Age	hrs	Client Info		0	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		Changed	---	---
Sample Status				SEVERE	---	---

WEAR

Cylinder, crank, or cam shaft wear is indicated. Valve wear is indicated.

Iron	ppm	ASTM D5185m	>51	▲ 273	---	---
Chromium	ppm	ASTM D5185m	>11	▲ 13	---	---
Nickel	ppm	ASTM D5185m	>5	▲ 17	---	---
Titanium	ppm	ASTM D5185m		3	---	---
Silver	ppm	ASTM D5185m	>3	0	---	---
Aluminum	ppm	ASTM D5185m	>31	● 39	---	---
Lead	ppm	ASTM D5185m	>26	4	---	---
Copper	ppm	ASTM D5185m	>26	9	---	---
Tin	ppm	ASTM D5185m	>4	<1	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

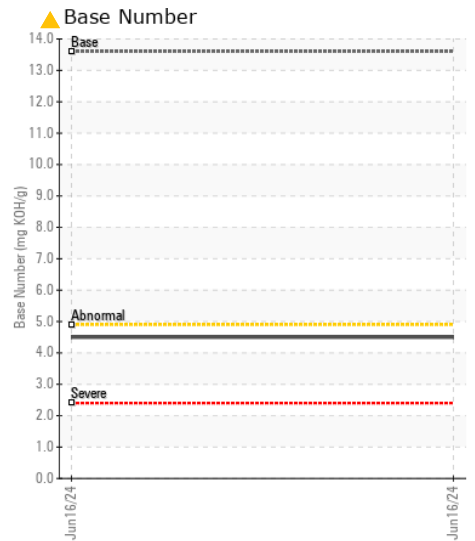
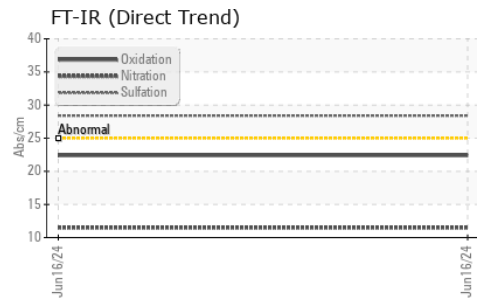
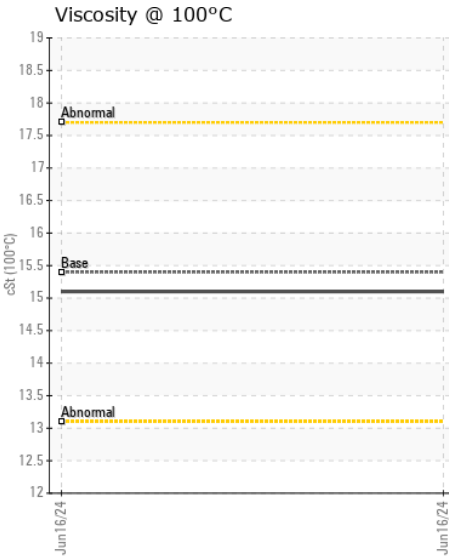
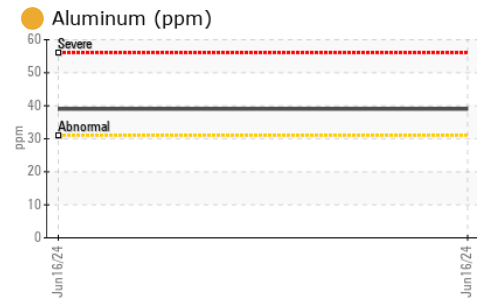
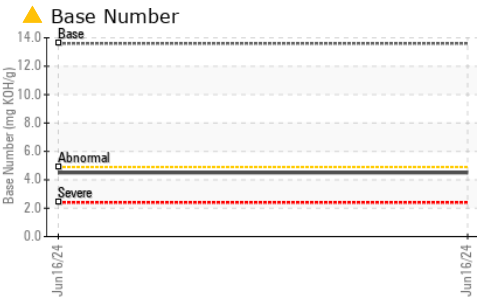
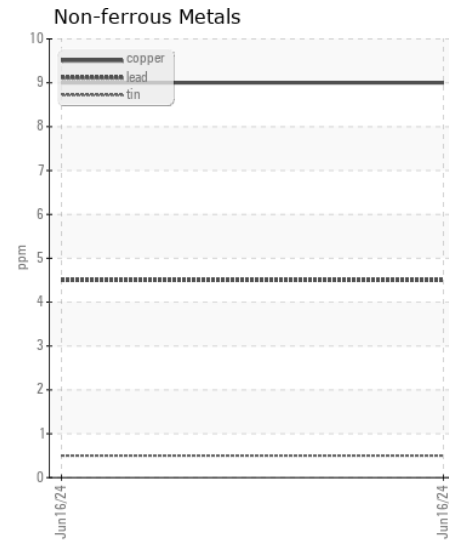
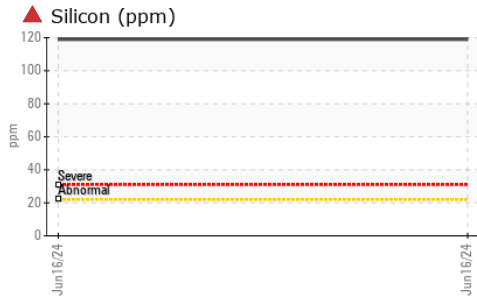
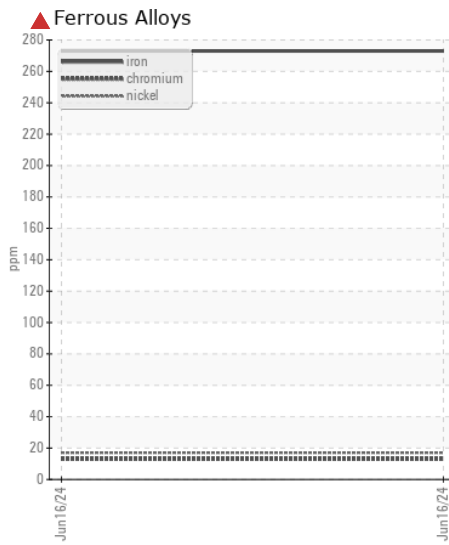
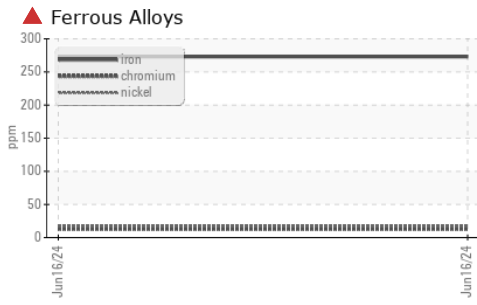
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>22	▲ 119	---	---
Potassium	ppm	ASTM D5185m	>20	17	---	---
Fuel		WC Method	>2.1	<1.0	---	---
Water		WC Method	>0.21	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	0.7	---	---
Nitration	Abs/cm	*ASTM D7624	>20	11.5	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	28.4	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.21	NEG	---	---

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m	>31	9	---	---
Boron	ppm	ASTM D5185m		74	---	---
Barium	ppm	ASTM D5185m		0	---	---
Molybdenum	ppm	ASTM D5185m		37	---	---
Manganese	ppm	ASTM D5185m		4	---	---
Magnesium	ppm	ASTM D5185m		39	---	---
Calcium	ppm	ASTM D5185m		2238	---	---
Phosphorus	ppm	ASTM D5185m		870	---	---
Zinc	ppm	ASTM D5185m		1194	---	---
Sulfur	ppm	ASTM D5185m		3727	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.4	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	▲ 4.5	---	---
Visc @ 100°C	cSt	ASTM D445	15.4	15.1	---	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0218332 **Received** : 14 Jun 2024
Lab Number : 06211044 **Tested** : 19 Jun 2024
Unique Number : 11083908 **Diagnosed** : 19 Jun 2024 - Sean Felton
Test Package : CONST (Additional Tests: TBN)

JRE - MANASSAS PARK
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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)