CONST

WEAR CHECK

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ATTENTION

Area
Mobile Fleet
Machine Id
5228 5228
Component
Diesel Engine
Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (9 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

WEAR

Exhaust valve wear is indicated.

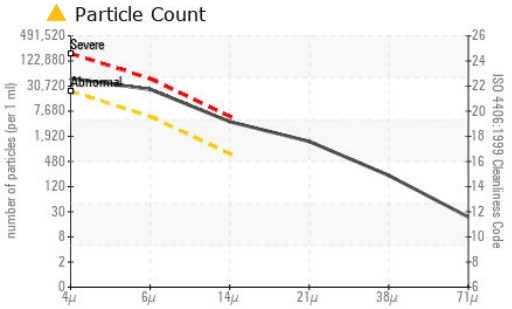
CONTAMINATION

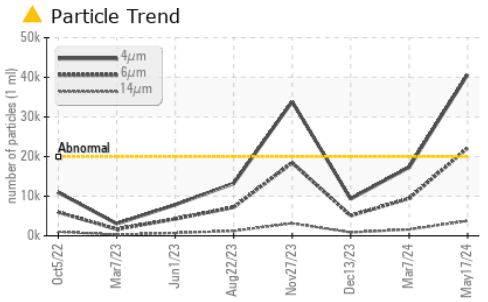
There is a high amount of particulates present in the oil. Sodium and/or potassium levels remain high. Test for glycol is negative.

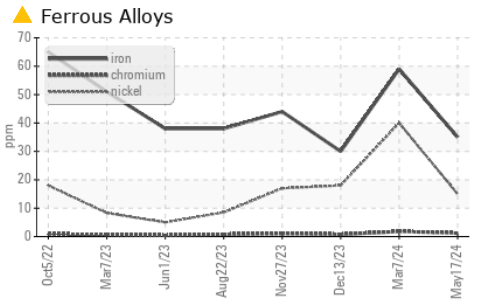
FLUID CONDITION

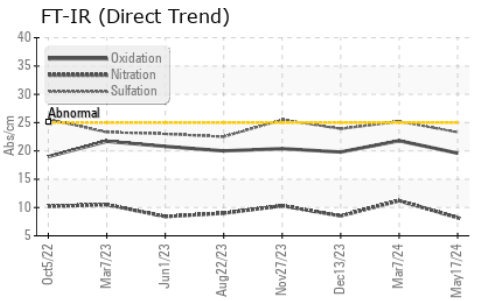
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

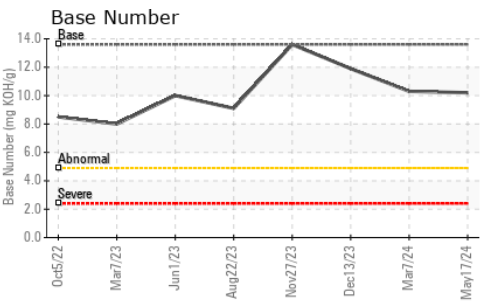
Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0937788	WC0902918	WC0861616
Sample Date		Client Info		17 May 2024	07 Mar 2024	13 Dec 2023
Machine Age	hrs	Client Info		5031	4486	3920
Oil Age	hrs	Client Info		545	691	100
Filter Age	hrs	Client Info		545	691	100
Oil Changed		Client Info		Changed	Changed	Not Changd
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				ABNORMAL	SEVERE	SEVERE
Iron	ppm	ASTM D5185m	>51	35	59	30
Chromium	ppm	ASTM D5185m	>11	1	2	<1
Nickel	ppm	ASTM D5185m	>5	▲ 15	▲ 40	▲ 18
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	<1	0
Aluminum	ppm	ASTM D5185m	>31	7	● 13	● 9
Lead	ppm	ASTM D5185m	>26	2	9	6
Copper	ppm	ASTM D5185m	>26	4	11	6
Tin	ppm	ASTM D5185m	>4	2	2	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>22	17	▲ 48	▲ 35
Potassium	ppm	ASTM D5185m	>20	8	▲ 54	▲ 49
Fuel		WC Method	>2.1	<1.0	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	▲ 0.10	NEG
Soot %	%	*ASTM D7844	>3	1.1	1.3	0.6
Nitration	Abs/cm	*ASTM D7624	>20	8.2	11.2	8.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.3	25.2	23.9
Particles >4µm		ASTM D7647	>20000	▲ 40688	17304	9291
Particles >6µm		ASTM D7647	>5000	▲ 22165	▲ 9426	● 5061
Particles >14µm		ASTM D7647	>640	▲ 3772	▲ 1604	● 861
Particles >21µm		ASTM D7647	>160	▲ 1271	▲ 540	● 290
Particles >38µm		ASTM D7647	>40	▲ 196	▲ 83	● 45
Particles >71µm		ASTM D7647	>10	▲ 20	9	5
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ 23/22/19	▲ 21/20/18	● 20/20/17
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
Sodium	ppm	ASTM D5185m	>31	● 132	▲ 1043	▲ 914
Boron	ppm	ASTM D5185m		22	17	30
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		52	95	76
Manganese	ppm	ASTM D5185m		2	3	1
Magnesium	ppm	ASTM D5185m		512	521	427
Calcium	ppm	ASTM D5185m		1691	1819	1621
Phosphorus	ppm	ASTM D5185m		803	799	731
Zinc	ppm	ASTM D5185m		936	1001	894
Sulfur	ppm	ASTM D5185m		2877	3084	2050
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.6	21.8	19.8
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	10.2	10.3	11.9
Visc @ 100°C	cSt	ASTM D445	15.4	13.3	12.9	12.7

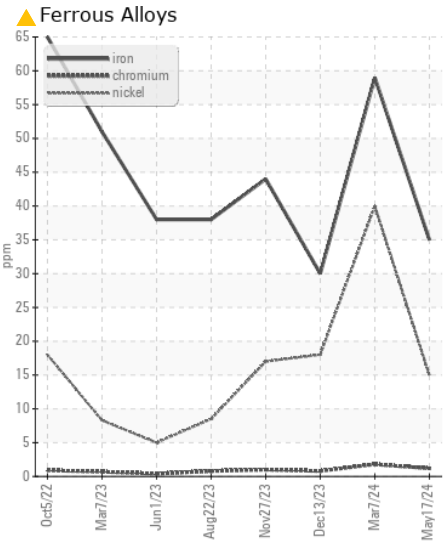


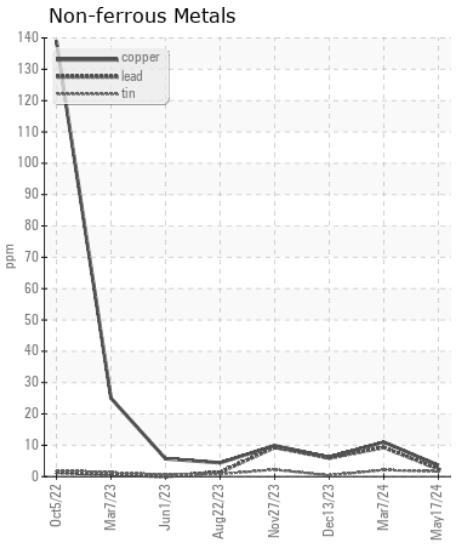


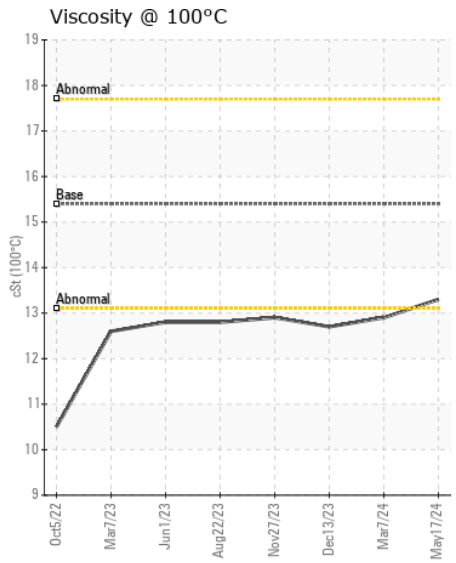


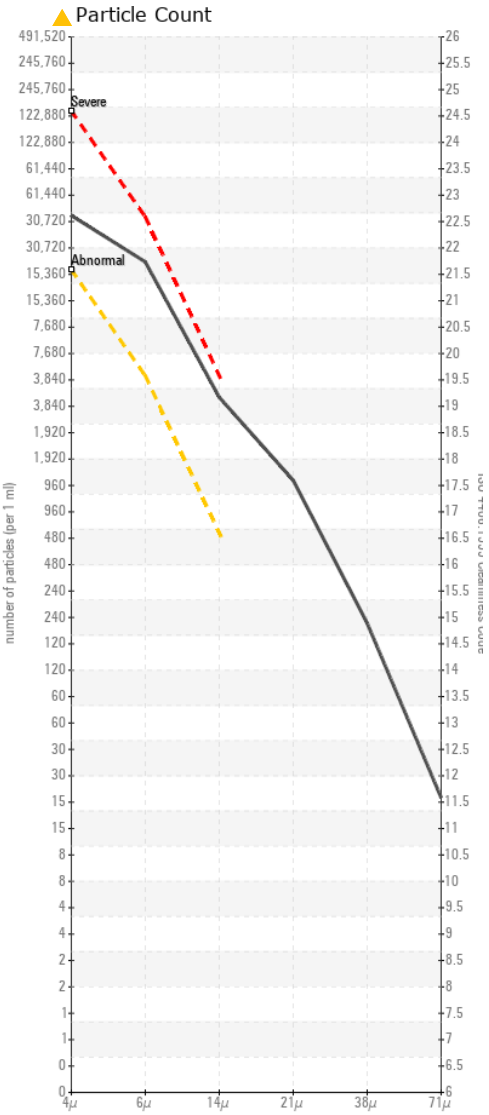


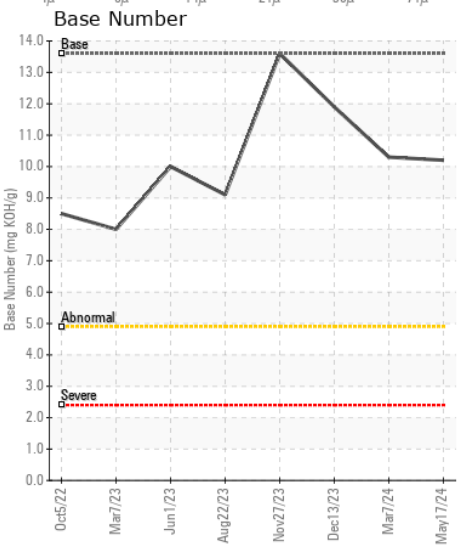












Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0937788 **Received** : 21 May 2024
Lab Number : 06185994 **Tested** : 23 May 2024
Unique Number : 11042746 **Diagnosed** : 23 May 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: PrtCount, TBN)

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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