



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Area
Store 9 - Marietta [140622]
 Machine Id
JOHN DEERE 859M 1T0859MXCJF338653
 Component
Diesel Engine
 Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (--- GAL)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. 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 recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LEC0041104	LEC0036896	LEC0026889
Sample Date		Client Info		28 Jun 2023	03 Feb 2023	07 Jun 2022
Machine Age	hrs	Client Info		5196	4675	3855
Oil Age	hrs	Client Info		521	820	533
Filter Age	hrs	Client Info		521	820	533
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	NORMAL

WEAR

Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>51	▲ 108	▲ 85	53
Chromium	ppm	ASTM D5185m	>11	3	1	1
Nickel	ppm	ASTM D5185m	>5	2	<1	<1
Titanium	ppm	ASTM D5185m		2	0	<1
Silver	ppm	ASTM D5185m	>3	2	0	0
Aluminum	ppm	ASTM D5185m	>31	● 8	9	7
Lead	ppm	ASTM D5185m	>26	11	4	2
Copper	ppm	ASTM D5185m	>26	5	3	2
Tin	ppm	ASTM D5185m	>4	2	<1	1
Vanadium	ppm	ASTM D5185m		1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

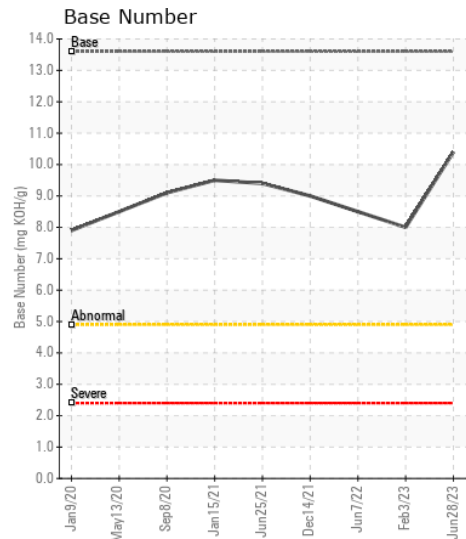
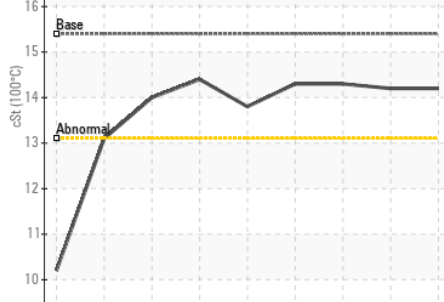
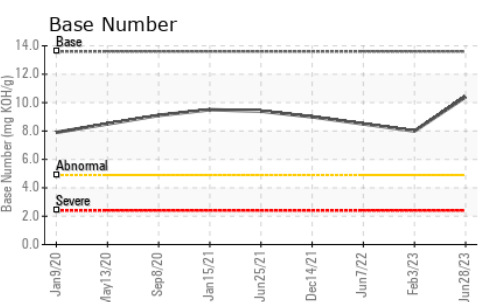
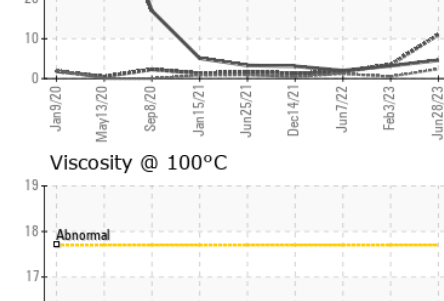
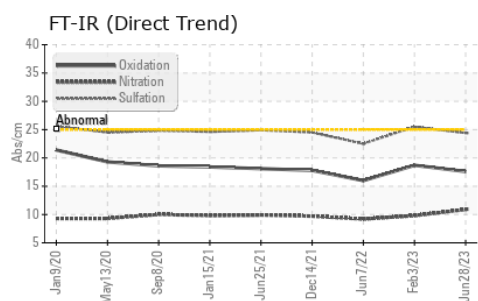
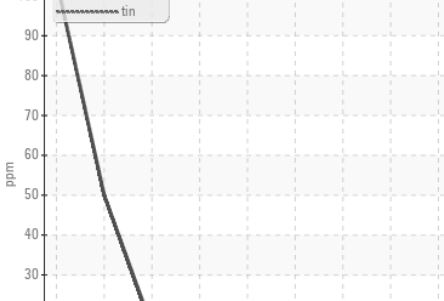
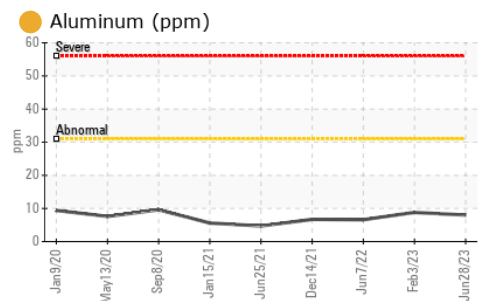
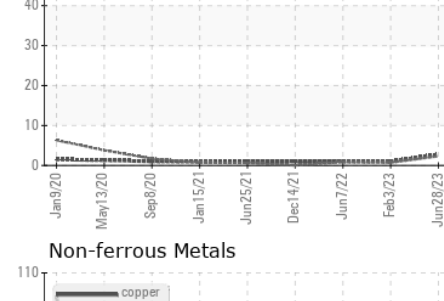
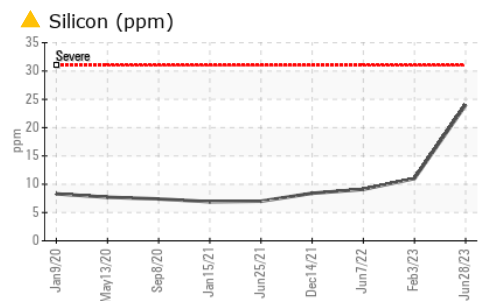
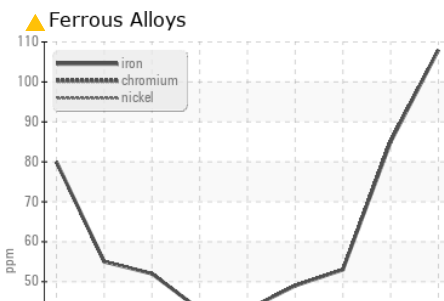
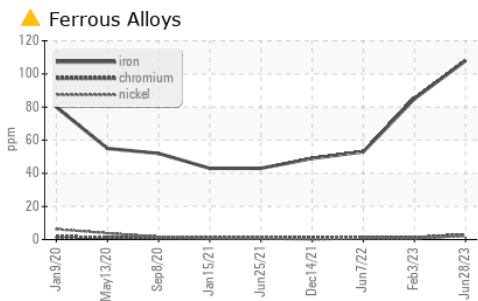
Sodium and/or potassium levels are high. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>120	▲ 24	11	9
Potassium	ppm	ASTM D5185m	>20	▲ 30	14	7
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	0.8	1.1	0.8
Nitration	Abs/cm	*ASTM D7624	>20	10.9	9.8	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.4	25.5	22.5
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.

Sodium	ppm	ASTM D5185m	>31	▲ 524	0	2
Boron	ppm	ASTM D5185m		32	98	186
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		249	286	219
Manganese	ppm	ASTM D5185m		3	<1	<1
Magnesium	ppm	ASTM D5185m		878	810	725
Calcium	ppm	ASTM D5185m		1555	1619	1645
Phosphorus	ppm	ASTM D5185m		885	905	853
Zinc	ppm	ASTM D5185m		1122	1123	1037
Sulfur	ppm	ASTM D5185m		3457	2826	2617
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.6	18.7	16.0
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	10.4	8.0	8.5
Visc @ 100°C	cSt	ASTM D445	15.4	14.2	14.2	14.3



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0041104 **Received** : 03 Jul 2023
Lab Number : 05888881 **Tested** : 06 Jul 2023
Unique Number : 10539364 **Diagnosed** : 06 Jul 2023 - Jonathan Hester
Test Package : CONST (Additional Tests: Glycol, TBN)

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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)