



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
HITACHI 160LC 1FFDBP70ARF240257
 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		JR0170726	JR0170797	JR0080977
Sample Date		Client Info		19 Apr 2024	11 Dec 2023	08 Feb 2023
Machine Age	hrs	Client Info		2961	2536	1552
Oil Age	hrs	Client Info		461	0	552
Filter Age	hrs	Client Info		461	0	552
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	7	6	12
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	6	7	8
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	2	4	34
Tin	ppm	ASTM D5185m	>15	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	<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.

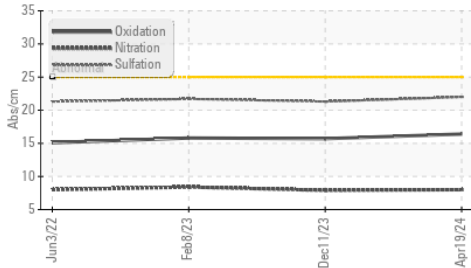
Silicon	ppm	ASTM D5185m	>25	7	7	8
Potassium	ppm	ASTM D5185m	>20	0	<1	2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.1	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.0	7.9	8.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.0	21.3	21.7
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	>0.2	NEG	NEG	NEG

FLUID CONDITION

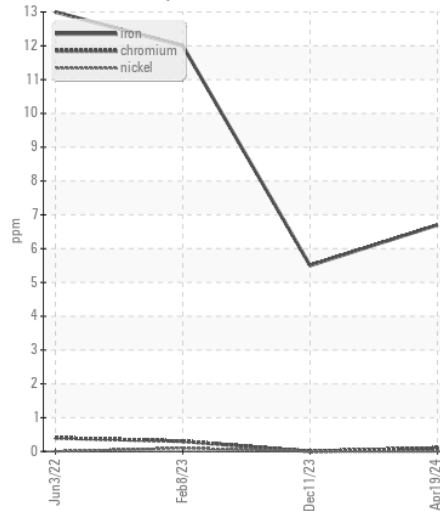
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		0	<1	0
Boron	ppm	ASTM D5185m		286	225	230
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		270	224	265
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		853	717	764
Calcium	ppm	ASTM D5185m		1555	1435	1521
Phosphorus	ppm	ASTM D5185m		925	813	895
Zinc	ppm	ASTM D5185m		1118	1061	1095
Sulfur	ppm	ASTM D5185m		3314	2707	3250
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.4	15.7	15.8
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	9.0	8.6	9.1
Visc @ 100°C	cSt	ASTM D445	15.4	13.3	13.5	12.8

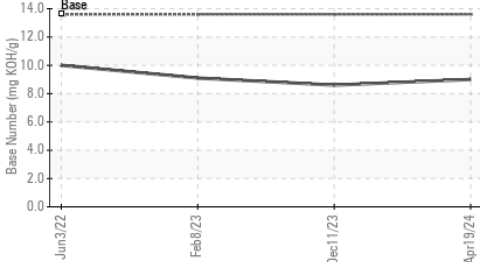
FT-IR (Direct Trend)



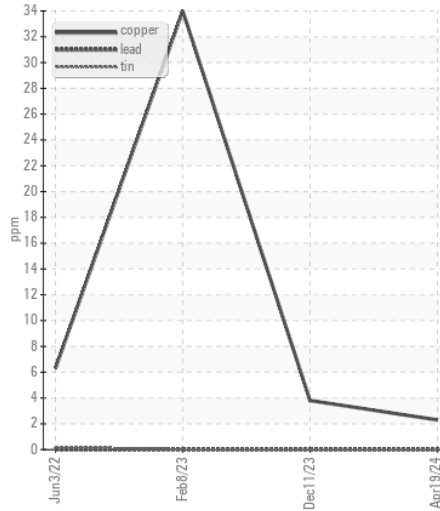
Ferrous Alloys



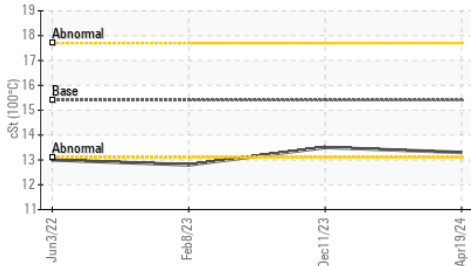
Base Number



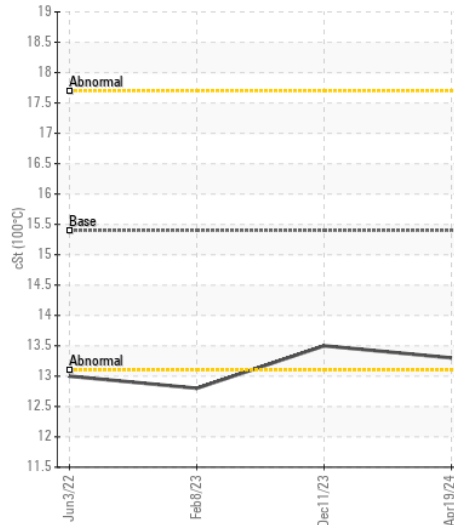
Non-ferrous Metals



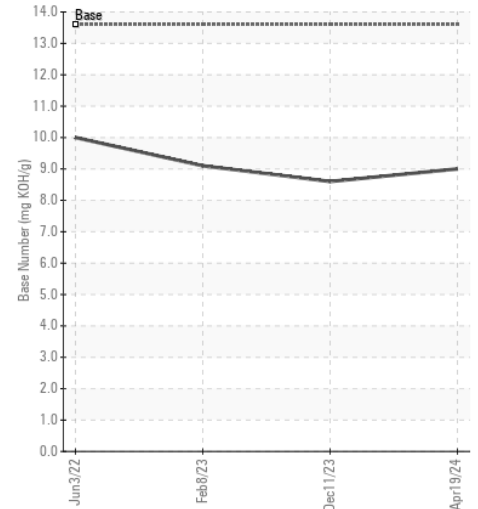
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : JR0170726 Received : 24 Apr 2024
 Lab Number : 06158851 Tested : 25 Apr 2024
 Unique Number : 10994274 Diagnosed : 25 Apr 2024 - Wes Davis
 Test Package : CONST (Additional Tests: TBN)

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 US 24641
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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)