



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
1316
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. 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		HRE0000492	WC0887534	WC0860419
Sample Date		Client Info		19 Jun 2024	04 Mar 2024	12 Nov 2023
Machine Age	mls	Client Info		296746	291524	285973
Oil Age	mls	Client Info		0	6000	6000
Filter Age	mls	Client Info		0	6000	6000
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	12	13	9
Chromium	ppm	ASTM D5185m	>20	0	1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	3
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	8	4	1
Tin	ppm	ASTM D5185m	>15	0	<1	0
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.

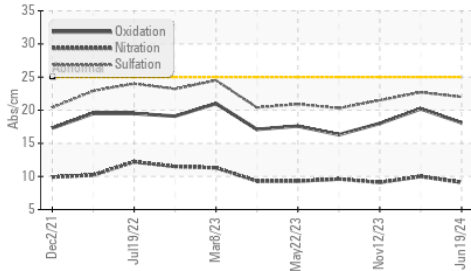
Silicon	ppm	ASTM D5185m	>25	8	10	7
Potassium	ppm	ASTM D5185m	>20	0	2	<1
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.6	0.3	0.5
Nitration	Abs/cm	*ASTM D7624	>20	9.1	10.0	9.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.0	22.7	21.5
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	>0.2	NEG	NEG	NEG

FLUID CONDITION

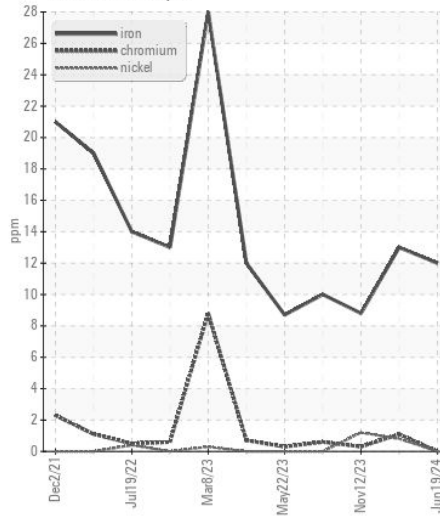
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>158	2	0	3
Boron	ppm	ASTM D5185m	250	110	75	91
Barium	ppm	ASTM D5185m	10	0	<1	0
Molybdenum	ppm	ASTM D5185m	100	70	81	73
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m	450	382	248	350
Calcium	ppm	ASTM D5185m	3000	1415	1760	1575
Phosphorus	ppm	ASTM D5185m	1150	981	1026	1001
Zinc	ppm	ASTM D5185m	1350	1208	1159	1243
Sulfur	ppm	ASTM D5185m	4250	3521	3324	3254
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.1	20.2	18.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	5.3	5.0	6.6
Visc @ 100°C	cSt	ASTM D445	14.4	14.0	13.7	14.2

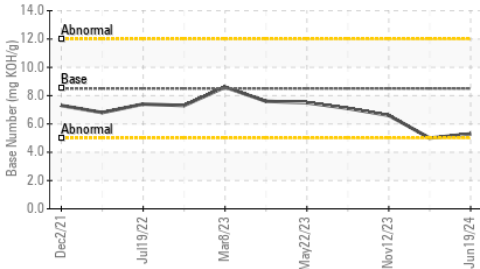
FT-IR (Direct Trend)



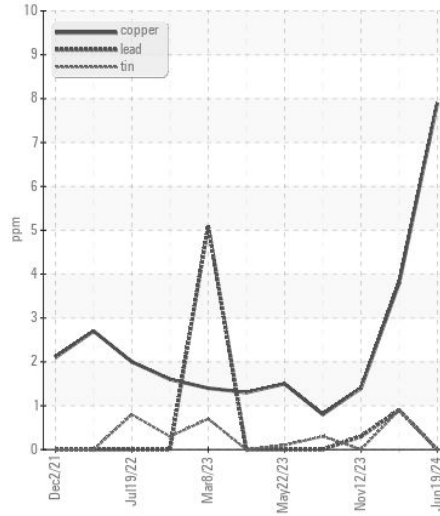
Ferrous Alloys



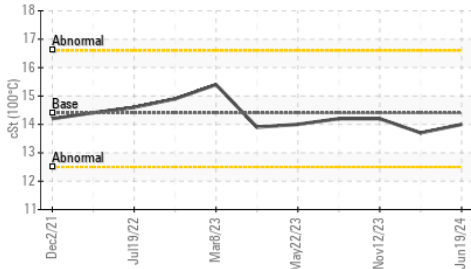
Base Number



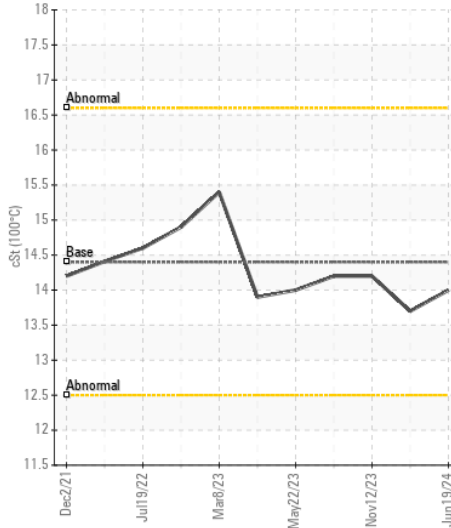
Non-ferrous Metals



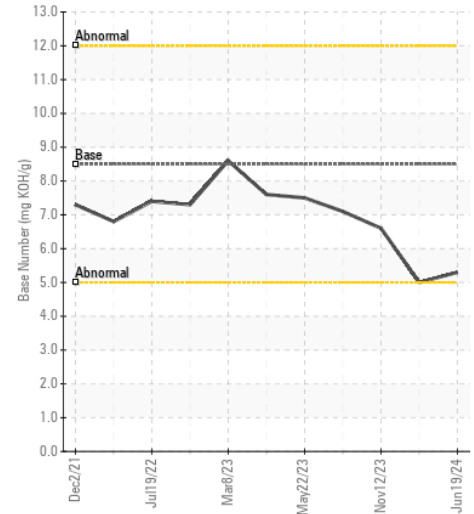
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : HRE0000492

Lab Number : 06232963

Unique Number : 11116456

Test Package : FLEET

Received : 11 Jul 2024

Tested : 11 Jul 2024

Diagnosed : 11 Jul 2024 - Wes Davis

TOWN OF CHAPEL HILL

6900 MILLHOUSE RD

CHAPEL HILL, NC

US 27516

Contact: Lisa DePasqua

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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)