



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
HITACHI 002144
Component
Diesel Engine
Fluid
CASTROL VECTON 15W40 CK4 (7 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0856162	WC0800523	WC0758061
Sample Date		Client Info		20 Jun 2024	01 Dec 2023	20 Mar 2023
Machine Age	hrs	Client Info		5492	4938	4331
Oil Age	hrs	Client Info		554	607	546
Filter Age	hrs	Client Info		554	607	546
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	6	8	5
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	8	9	9
Lead	ppm	ASTM D5185m	>40	0	1	0
Copper	ppm	ASTM D5185m	>330	3	2	1
Tin	ppm	ASTM D5185m	>15	0	1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
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.

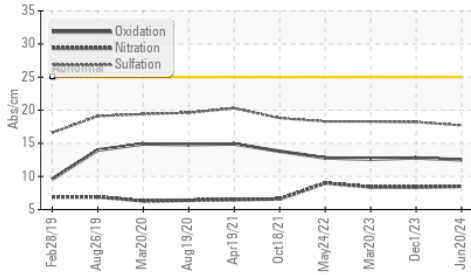
Silicon	ppm	ASTM D5185m	>25	4	6	5
Potassium	ppm	ASTM D5185m	>20	<1	0	0
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.4	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	8.5	8.4	8.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.7	18.2	18.3
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

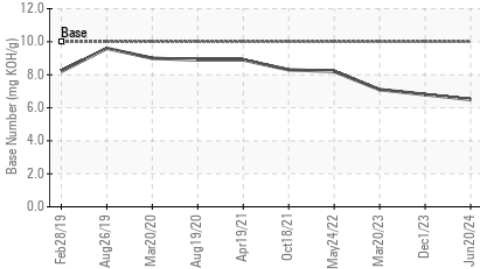
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		2	3	2
Boron	ppm	ASTM D5185m		38	47	54
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m		82	88	81
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		88	83	91
Calcium	ppm	ASTM D5185m		2264	1966	2042
Phosphorus	ppm	ASTM D5185m		1015	1064	966
Zinc	ppm	ASTM D5185m		1181	1217	1142
Sulfur	ppm	ASTM D5185m		4023	3597	3818
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.5	12.8	12.6
Base Number (BN)	mg KOH/g	ASTM D2896	10	6.5	6.8	7.1
Visc @ 100°C	cSt	ASTM D445	15.5	13.1	13.4	13.2

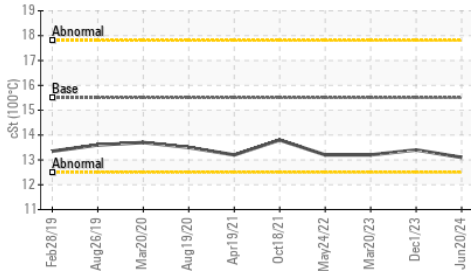
FT-IR (Direct Trend)



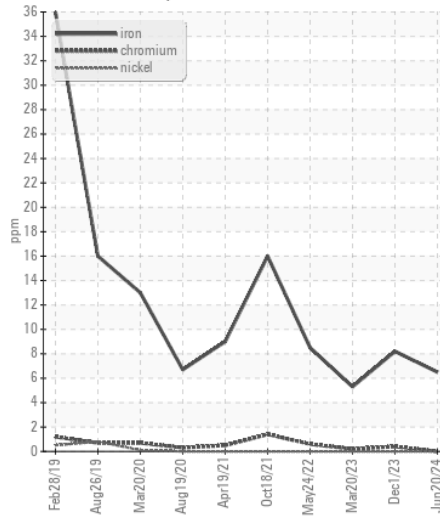
Base Number



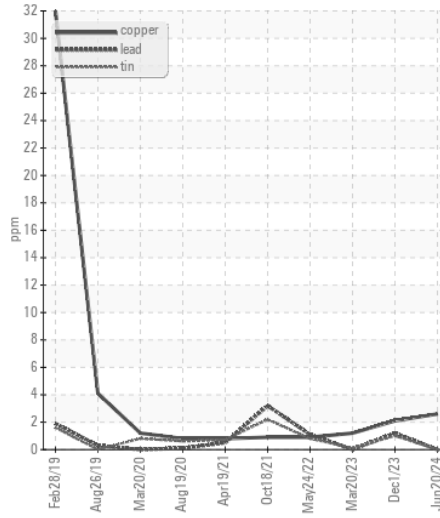
Viscosity @ 100°C



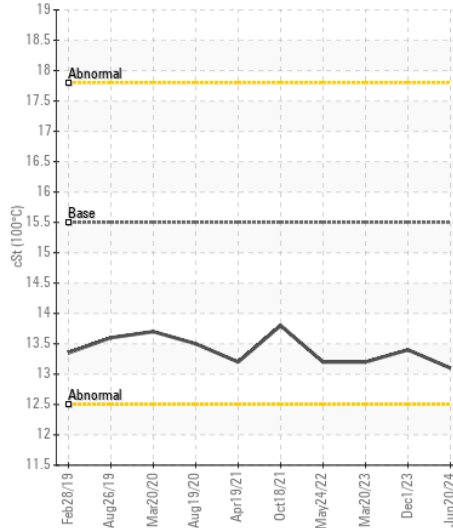
Ferrous Alloys



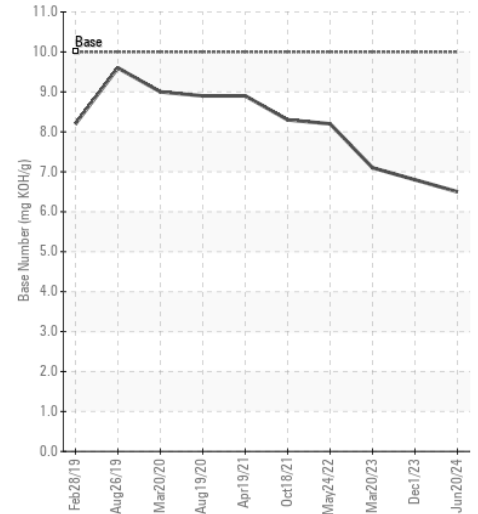
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0856162 Received : 09 Jul 2024
 Lab Number : 06231338 Tested : 10 Jul 2024
 Unique Number : 11114831 Diagnosed : 10 Jul 2024 - Wes Davis
 Test Package : CONST (Additional Tests: 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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