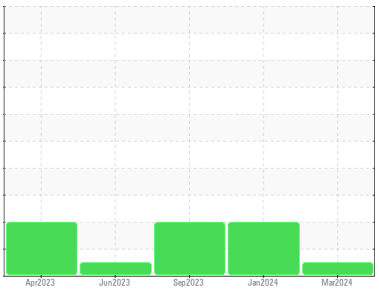
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
[CONHER]
Machine Id
VOLVO 2008 #111 Volvo
Component
Diesel Engine
Fluid
Volvo Mineral 15W40 CI-4 (45 LTR)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. (Customer Sample Comment: Fluid: Volvo mineral CI-4 15W40)

Wear
All component wear rates are normal.

Contamination
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KL0014533**	KL0013460	KL0012829
Sample Date		Client Info		**21 Mar 2024**	19 Jan 2024	16 Sep 2023
Machine Age	kms	Client Info		**21650**	5918	1752857
Oil Age	kms	Client Info		**10**	8000	57740
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**NORMAL**	ATTENTION	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>165	**4**	77	37
Chromium	ppm	ASTM D5185m	>5	**0**	2	1
Nickel	ppm	ASTM D5185m	>4	**0**	0	0
Titanium	ppm	ASTM D5185m	>2	**0**	<1	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**<1**	22	4
Lead	ppm	ASTM D5185m	>150	**1**	0	41
Copper	ppm	ASTM D5185m	>90	**<1**	9	2
Tin	ppm	ASTM D5185m	>5	**<1**	<1	<1
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

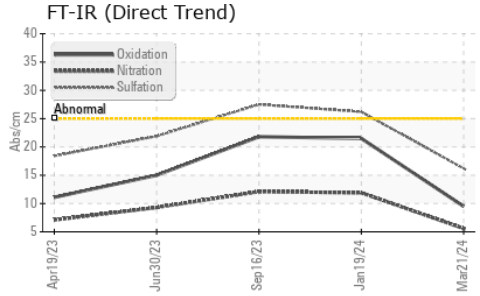
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	19	13
Barium	ppm	ASTM D5185m		**0**	1	0
Molybdenum	ppm	ASTM D5185m		**1**	53	9
Manganese	ppm	ASTM D5185m		**0**	<1	<1
Magnesium	ppm	ASTM D5185m		**8**	610	72
Calcium	ppm	ASTM D5185m		**2370**	2152	3370
Phosphorus	ppm	ASTM D5185m		**869**	1006	1034
Zinc	ppm	ASTM D5185m		**998**	1290	1302
Sulfur	ppm	ASTM D5185m		**4108**	3680	4237

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>35	**6**	38	17
Sodium	ppm	ASTM D5185m		**0**	<1	2
Potassium	ppm	ASTM D5185m	>20	**<1**	20	<1

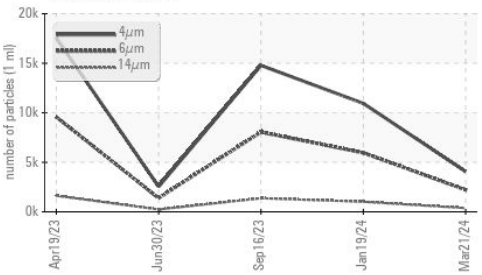
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>7.5	**0.1**	1.4	0.9
Nitration	Abs/cm	*ASTM D7624	>20	**5.6**	11.9	12.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	**16.2**	26.2	27.5

OIL ANALYSIS REPORT

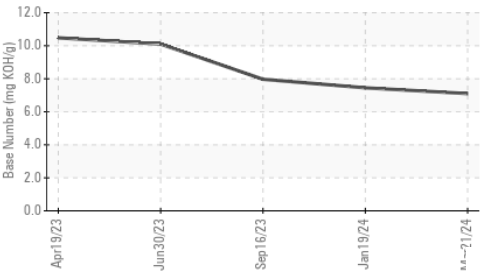
FT-IR (Direct Trend)



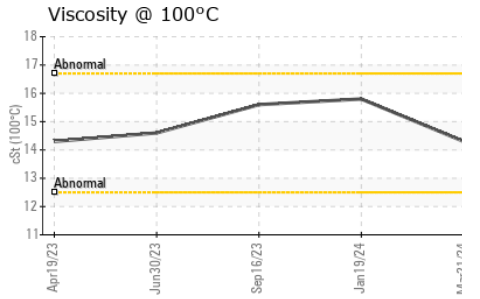
Particle Trend



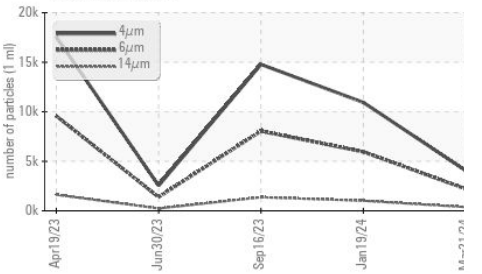
Base Number



Viscosity @ 100°C



Particle Trend



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**4071**	10944	14781
Particles >6µm		ASTM D7647	>5000	**2218**	5962	8052
Particles >14µm		ASTM D7647	>640	**377**	1015	1370
Particles >21µm		ASTM D7647	>160	**127**	342	462
Particles >38µm		ASTM D7647	>40	**20**	53	71
Particles >71µm		ASTM D7647	>10	**2**	5	7
Oil Cleanliness		ISO 4406 (c)	>19/16	**18/16**	20/17	20/18

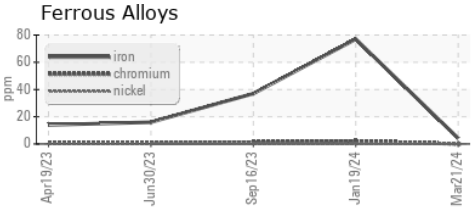
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**9.5**	21.5	21.8
Base Number (BN)	mg KOH/g	ASTM D2896		**7.10**	7.45	7.97

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

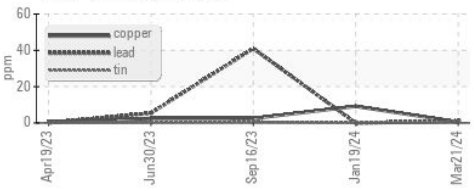
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**14.3**	15.8	15.6

GRAPHS

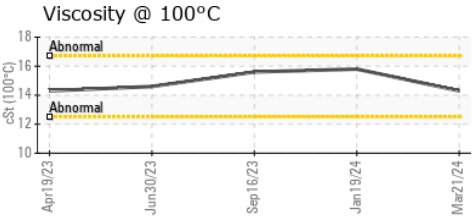
Ferrous Alloys



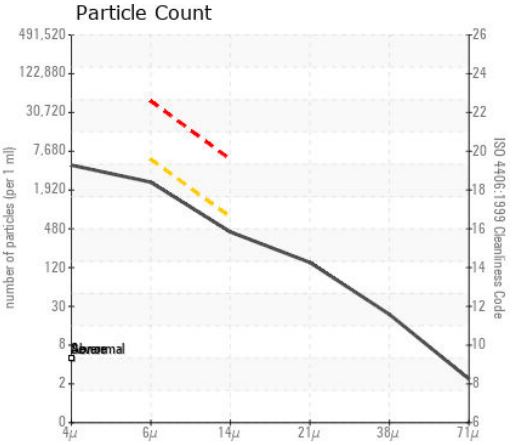
Non-ferrous Metals



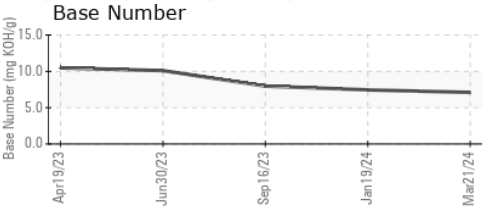
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0014533
Lab Number : 06153301
Unique Number : 10983379
Test Package : MOB 2 (Additional Tests: PrtCount)

Received : 18 Apr 2024
Tested : 23 Apr 2024
Diagnosed : 23 Apr 2024 - Jonathan Hester

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)

LAMO

NAVOJOA, MX
Contact: ANDRES MONROY
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T:
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Report Id: LAMNAV [WUSCAR] 06153301 (Generated: 04/23/2024 10:04:32) Rev: 1

Submitted By: ANDRES MONROY