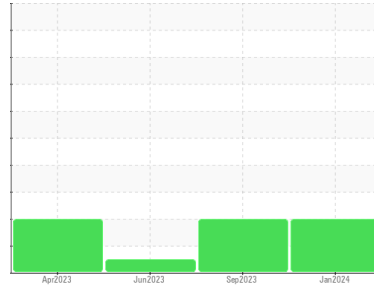




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



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

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: Fluid Volvo Mineral 15W40)

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of particulates present in the oil.

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			KL0013460	KL0012829	KL0012385
Sample Date	Client Info			19 Jan 2024	16 Sep 2023	30 Jun 2023
Machine Age	kms	Client Info		5918	1752857	1719576
Oil Age	kms	Client Info		8000	57740	22459
Oil Changed	Client Info			Not Chngd	Not Chngd	Not Chngd
Sample Status				ATTENTION	ABNORMAL	NORMAL

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	77	37	16
Chromium	ppm	ASTM D5185m	>5	2	1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	22	4	2
Lead	ppm	ASTM D5185m	>150	0	41	5
Copper	ppm	ASTM D5185m	>90	9	2	2
Tin	ppm	ASTM D5185m	>5	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		19	13	34
Barium	ppm	ASTM D5185m		1	0	0
Molybdenum	ppm	ASTM D5185m		53	9	15
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		610	72	99
Calcium	ppm	ASTM D5185m		2152	3370	3656
Phosphorus	ppm	ASTM D5185m		1006	1034	998
Zinc	ppm	ASTM D5185m		1290	1302	1234
Sulfur	ppm	ASTM D5185m		3680	4237	5134

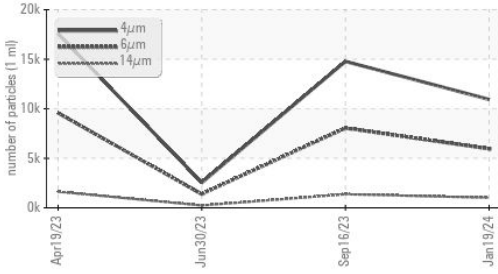
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>35	38	17	24
Sodium	ppm	ASTM D5185m		<1	2	1
Potassium	ppm	ASTM D5185m	>20	20	<1	2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>7.5	1.4	0.9	0.7
Nitration	Abs/cm	*ASTM D7624	>20	11.9	12.1	9.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	26.2	27.5	21.9

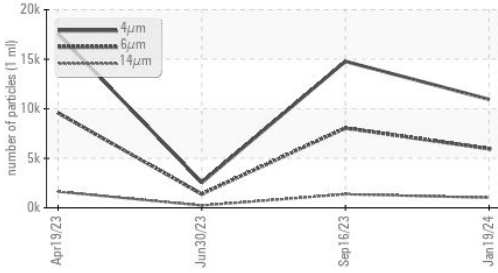


OIL ANALYSIS REPORT

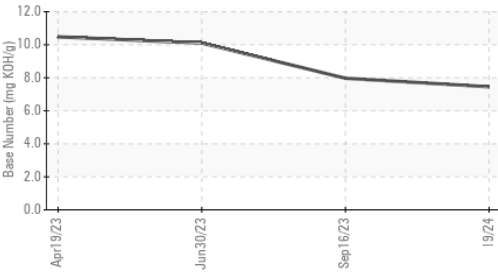
▲ Particle Trend



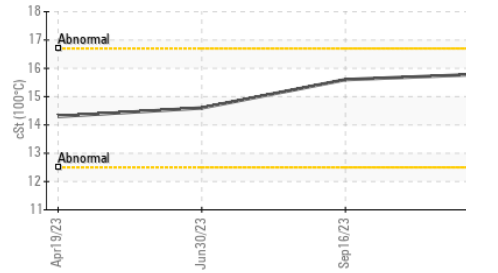
▲ Particle Trend



Base Number



Viscosity @ 100°C



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		10944	14781	2540
Particles >6µm	ASTM D7647	>5000	▲ 5962	▲ 8052	1384
Particles >14µm	ASTM D7647	>640	▲ 1015	▲ 1370	236
Particles >21µm	ASTM D7647	>160	▲ 342	▲ 462	79
Particles >38µm	ASTM D7647	>40	▲ 53	▲ 71	12
Particles >71µm	ASTM D7647	>10	5	7	1
Oil Cleanliness	ISO 4406 (c)	>19/16	▲ 20/17	▲ 20/18	18/15

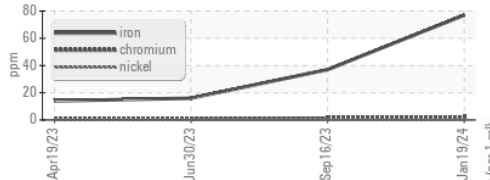
FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs./1mm *ASTM D7414	>25	21.5	21.8	15.0
Base Number (BN)	mg KOH/g ASTM D2896		7.45	7.97	10.10

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

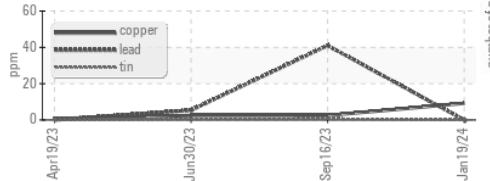
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt ASTM D445		15.8	15.6	14.6

GRAPHS

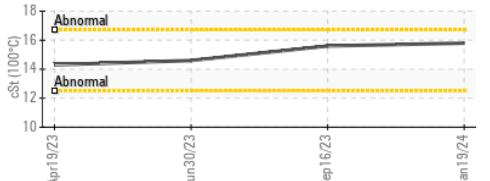
Ferrous Alloys



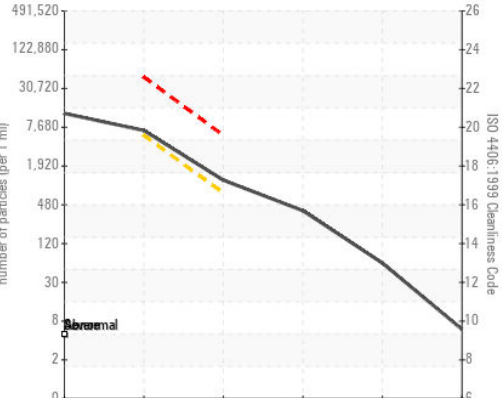
Non-ferrous Metals



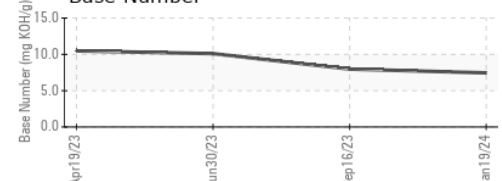
Viscosity @ 100°C



▲ Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013460 **Received** : 30 Jan 2024
Lab Number : 06075007 **Diagnosed** : 02 Feb 2024
Unique Number : 10857098 **Diagnostician** : Jonathan Hester

Test Package : MOB 2 (Additional Tests: PrtCount)

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
andres.monroy@cmoderna.com

T:
F: