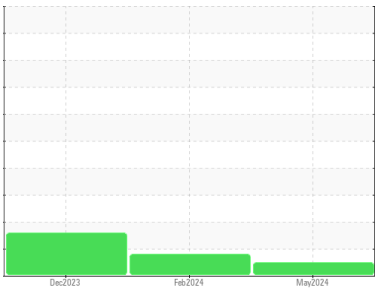
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
FLEET
Machine Id
VOLVO 2227087 (S/N 4V4NC9EH8RN643765)
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 30 (42 QTS)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) DIESEL ENGINE OIL SAE 30. Please confirm.

Wear
Metal levels are typical for a new component breaking in.

Contamination
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination 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		**PCA0124530**	PCA0118722	PCA0108204
Sample Date		Client Info		**16 May 2024**	26 Feb 2024	13 Dec 2023
Machine Age	mls	Client Info		**59985**	39500	21064
Oil Age	mls	Client Info		**41549**	18436	21064
Oil Changed		Client Info		**Changed**	Not Changd	Changed
Sample Status				**NORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
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	>100	**29**	15	27
Chromium	ppm	ASTM D5185m	>20	**2**	<1	<1
Nickel	ppm	ASTM D5185m	>2	**5**	2	2
Titanium	ppm	ASTM D5185m		**<1**	0	<1
Silver	ppm	ASTM D5185m	>2	**2**	4	19
Aluminum	ppm	ASTM D5185m	>25	**11**	9	30
Lead	ppm	ASTM D5185m	>40	**1**	4	0
Copper	ppm	ASTM D5185m	>330	**230**	▲ 357	112
Tin	ppm	ASTM D5185m	>15	**3**	<1	4
Vanadium	ppm	ASTM D5185m		**<1**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**8**	16	213
Barium	ppm	ASTM D5185m	10	**0**	0	<1
Molybdenum	ppm	ASTM D5185m	100	**69**	68	115
Manganese	ppm	ASTM D5185m		**2**	<1	3
Magnesium	ppm	ASTM D5185m	450	**961**	1044	703
Calcium	ppm	ASTM D5185m	3000	**1199**	1215	1329
Phosphorus	ppm	ASTM D5185m	1150	**965**	1040	716
Zinc	ppm	ASTM D5185m	1350	**1223**	1279	835
Sulfur	ppm	ASTM D5185m	4250	**2558**	2937	2305

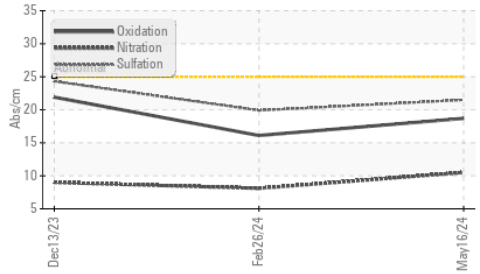
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**15**	13	▲ 57
Sodium	ppm	ASTM D5185m	>75	**3**	3	4
Potassium	ppm	ASTM D5185m	>20	**34**	21	83
Fuel	%	ASTM D3524	>6.0	**<1.0**	<1.0	0.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.2**	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	**10.5**	8.1	9.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	**21.5**	19.9	24.3

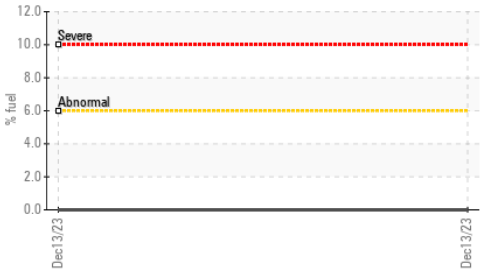
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.7**	16.1	21.9
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**6.5**	7.5	7.9

OIL ANALYSIS REPORT

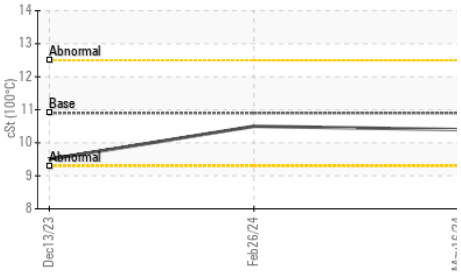
FT-IR (Direct Trend)



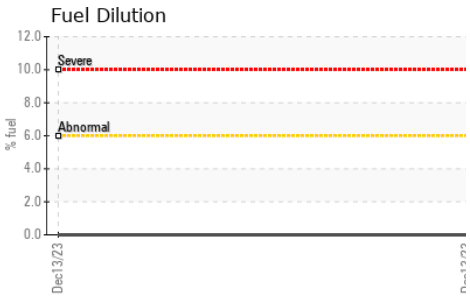
Fuel Dilution



Viscosity @ 100°C



Fuel Dilution

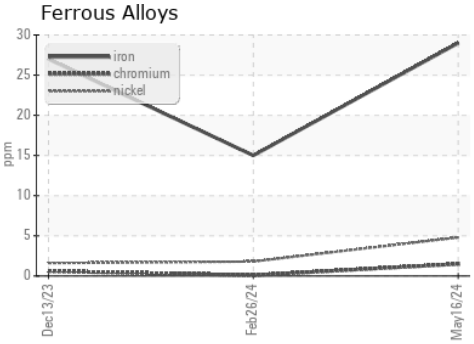


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

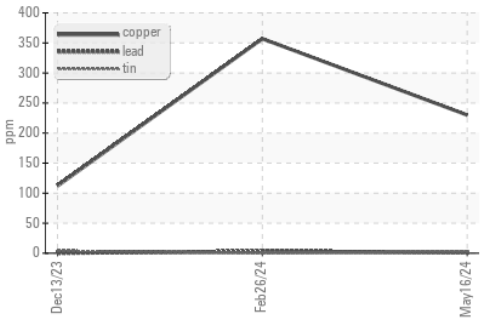
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	10.9	**10.4**	10.5	9.5

GRAPHS

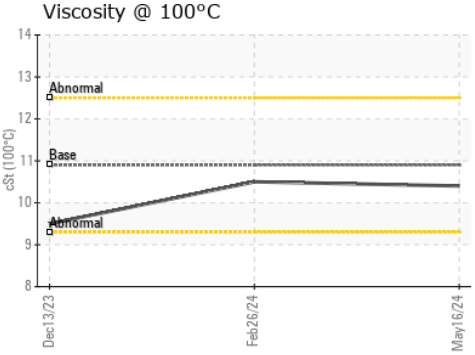
Ferrous Alloys



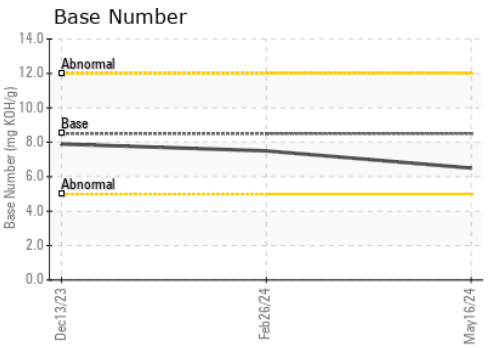
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0124530
Lab Number : 06188776
Unique Number : 11045528
Test Package : FLEET (Additional Tests: FuelDilution)

Received : 23 May 2024
Tested : 24 May 2024
Diagnosed : 24 May 2024 - Wes Davis

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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Report Id: PERACCPCA [WUSCAR] 06188776 (Generated: 05/24/2024 16:53:10) Rev: 1

Submitted By: RANDY PARKER