



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>ATTENTION</b>



Machine Id  
**VOLVO A35G 342019**  
Component  
**Diesel Engine**  
Fluid  
**VOLVO VDS-4.5 Premium Motor Oil 15W40 (--- GAL)**

**RECOMMENDATION**

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>ML0001815</b>	ML0000810	VCP449043
Sample Date		Client Info		<b>23 May 2024</b>	21 Mar 2024	05 Jan 2024
Machine Age	hrs	Client Info		<b>8637</b>	8225	7825
Oil Age	hrs	Client Info		<b>412</b>	500	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ATTENTION</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>200	<b>5</b>	6	6
Chromium	ppm	ASTM D5185m	>20	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m	>10	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>30	<b>2</b>	4	3
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	1	<1
Copper	ppm	ASTM D5185m	>20	<b>1</b>	2	2
Tin	ppm	ASTM D5185m	>20	<b>0</b>	1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

Fuel content negligible. There is no indication of any contamination in the oil.

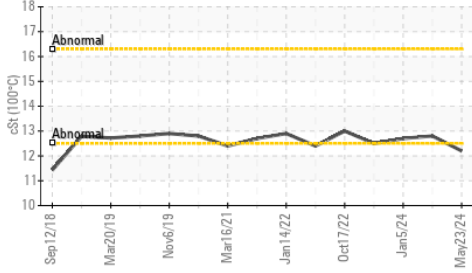
Silicon	ppm	ASTM D5185m	>20	<b>4</b>	5	6
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	2	<1
Fuel	%	ASTM D3524	>3.0	<b>0.3</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.2</b>	0.1	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.0</b>	9.3	9.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.6</b>	18.8	18.7
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

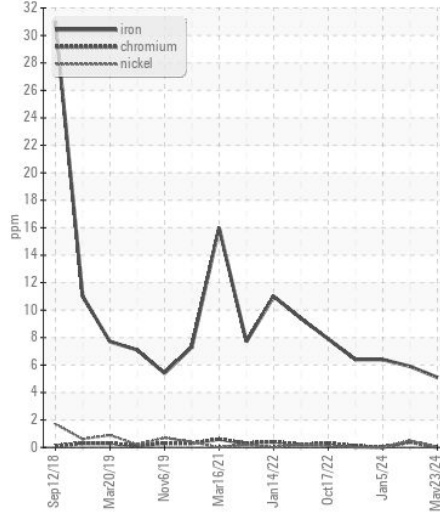
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		<b>2</b>	0	2
Boron	ppm	ASTM D5185m		<b>30</b>	51	38
Barium	ppm	ASTM D5185m		<b>0</b>	2	0
Molybdenum	ppm	ASTM D5185m		<b>54</b>	97	80
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>691</b>	26	35
Calcium	ppm	ASTM D5185m		<b>1512</b>	2443	2063
Phosphorus	ppm	ASTM D5185m		<b>859</b>	1100	1007
Zinc	ppm	ASTM D5185m		<b>1001</b>	1260	1186
Sulfur	ppm	ASTM D5185m		<b>3215</b>	4343	3703
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.7</b>	13.8	13.5
Base Number (BN)	mg KOH/g	ASTM D2896		<b>6.9</b>	5.4	5.4
Visc @ 100°C	cSt	ASTM D445		<b>12.2</b>	12.8	12.7

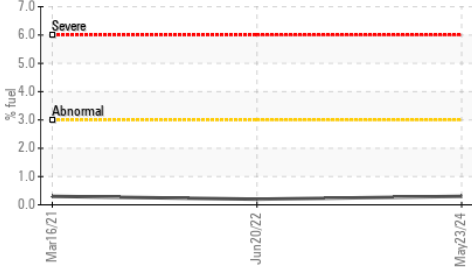
● Viscosity @ 100°C



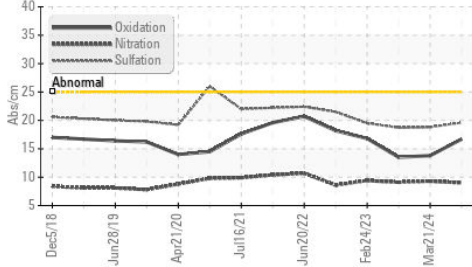
Ferrous Alloys



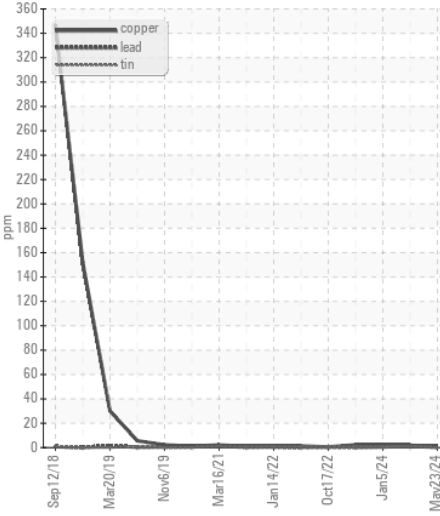
Fuel Dilution



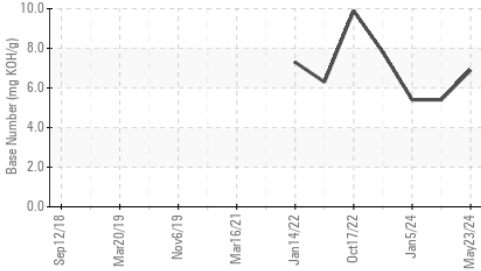
FT-IR (Direct Trend)



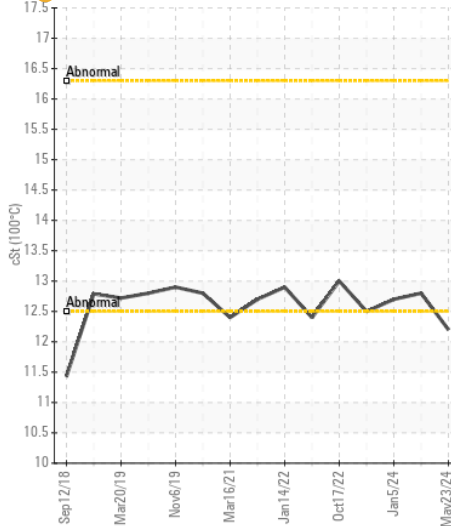
Non-ferrous Metals



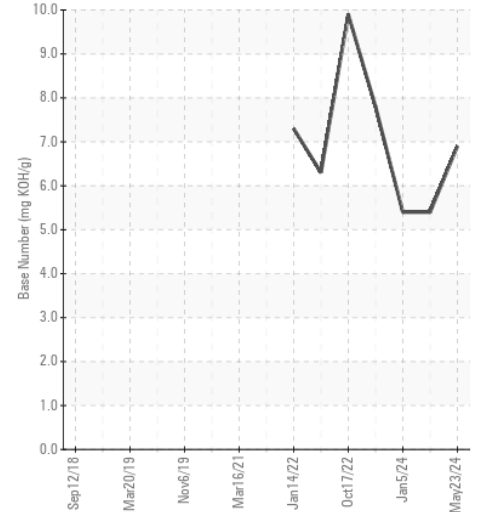
Base Number



● Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : ML0001815 **Received** : 29 May 2024  
**Lab Number** : 06193494 **Tested** : 31 May 2024  
**Unique Number** : 11050246 **Diagnosed** : 31 May 2024 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: FuelDilution, PercentFuel, TBN )

**MCCLEUNG-LOGAN EQUIPMENT CO - RICHMOND**  
 1345 MOUNTAIN ROAD  
 GLEN ALLEN, VA  
 US 23060  
 Contact: KYLE RATLIFFE  
 KRATLIFFE@MCCLEUNG-LOGAN.COM

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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