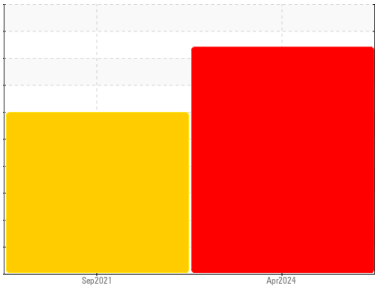
McCLUNG LOGAN EQUIPMENT COMPANY

PROBLEM SUMMARY

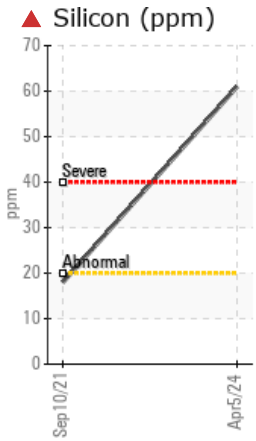
Sample Rating Trend

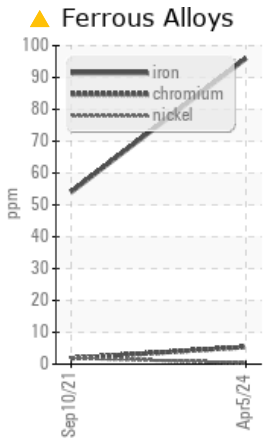


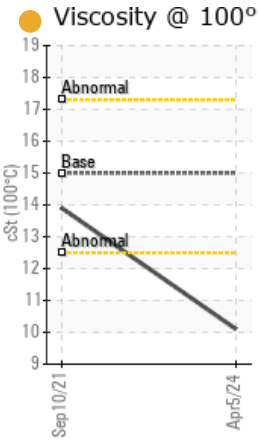
DIRT

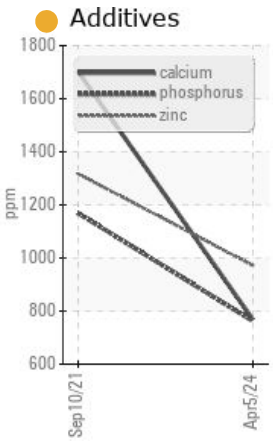
Machine Id
VOLVO EC210C 140029
Component
Diesel Engine
Fluid
VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (--- QTS)

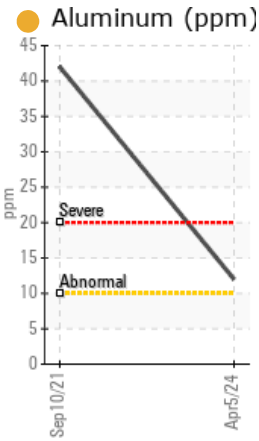
COMPONENT CONDITION SUMMARY











RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	---
Iron	ppm	ASTM D5185m	>100	▲ **96**	54	---
Silicon	ppm	ASTM D5185m	>20	▲ **61**	18	---

Customer Id: VOLVO1023
Sample No.: ML0000213
Lab Number: 06142063
Test Package: CONST

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.

HISTORICAL DIAGNOSIS

WEAR

10 Sep 2021 Diag: Jonathan Hester

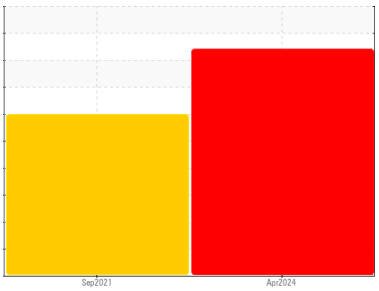
We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.The aluminum level is severe. Piston wear is indicated. High wear metal levels reflect the reported knocking. There is no indication of any contamination in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

McCLUNG LOGAN EQUIPMENT COMPANY

OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Machine Id
VOLVO EC210C 140029
Component
Diesel Engine
Fluid
VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (--- QTS)

DIAGNOSIS

Recommendation
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear
Cylinder, crank, or cam shaft wear is indicated.

Contamination
Fuel content negligible. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition
The oil viscosity is lower than normal. Additive levels indicate the addition of a different brand, or type of oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**ML0000213**	VCP298908	---
Sample Date		Client Info		**05 Apr 2024**	10 Sep 2021	---
Machine Age	hrs	Client Info		**9633**	8339	---
Oil Age	hrs	Client Info		**327**	0	---
Oil Changed		Client Info		**Not Changd**	N/A	---
Sample Status				**SEVERE**	SEVERE	---

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.1	**NEG**	NEG	---
Glycol		WC Method		**NEG**	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	▲ **96**	54	---
Chromium	ppm	ASTM D5185m	>10	**5**	2	---
Nickel	ppm	ASTM D5185m	>10	**<1**	2	---
Titanium	ppm	ASTM D5185m		**1**	<1	---
Silver	ppm	ASTM D5185m	>2	**0**	<1	---
Aluminum	ppm	ASTM D5185m	>10	● **12**	▲ 42	---
Lead	ppm	ASTM D5185m	>20	**1**	6	---
Copper	ppm	ASTM D5185m	>15	**14**	6	---
Tin	ppm	ASTM D5185m	>10	**1**	4	---
Antimony	ppm	ASTM D5185m		**---**	0	---
Vanadium	ppm	ASTM D5185m		**<1**	<1	---
Cadmium	ppm	ASTM D5185m		**0**	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2.5	**4**	17	---
Barium	ppm	ASTM D5185m	0.0	**0**	0	---
Molybdenum	ppm	ASTM D5185m	0.7	**33**	63	---
Manganese	ppm	ASTM D5185m	0.0	**<1**	<1	---
Magnesium	ppm	ASTM D5185m	256	● **532**	865	---
Calcium	ppm	ASTM D5185m	2057	● **768**	1702	---
Phosphorus	ppm	ASTM D5185m	935	● **762**	1169	---
Zinc	ppm	ASTM D5185m	1223	● **972**	1317	---
Sulfur	ppm	ASTM D5185m	4079	**2968**	2790	---

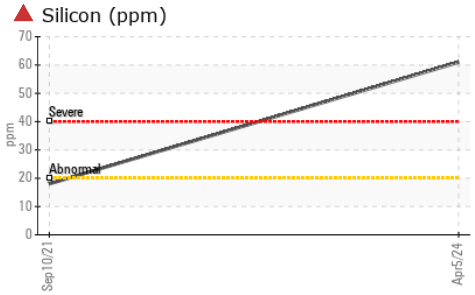
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	▲ **61**	18	---
Sodium	ppm	ASTM D5185m		**2**	<1	---
Potassium	ppm	ASTM D5185m	>20	**5**	1	---
Fuel	%	ASTM D3524	>6.0	**0.2**	<1.0	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.2**	0.7	---
Nitration	Abs/cm	*ASTM D7624	>20	**4.6**	10.9	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**15.2**	26.8	---

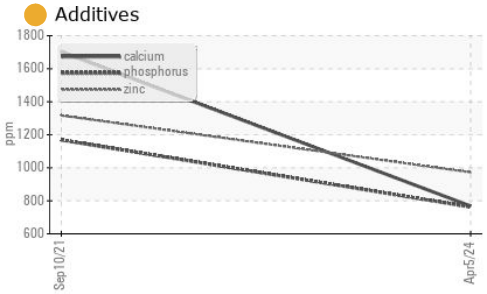
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**8.6**	22.2	---
Base Number (BN)	mg KOH/g	ASTM D2896	10	**5.2**	---	---

OIL ANALYSIS REPORT

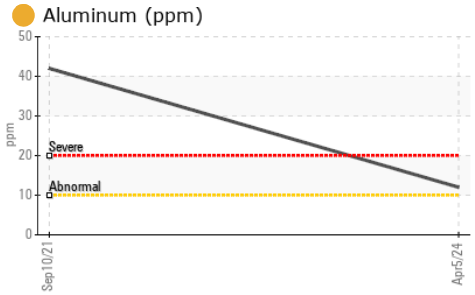
Silicon (ppm)



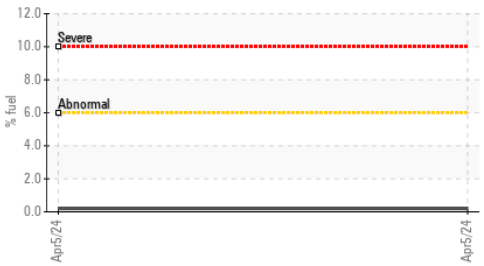
Additives



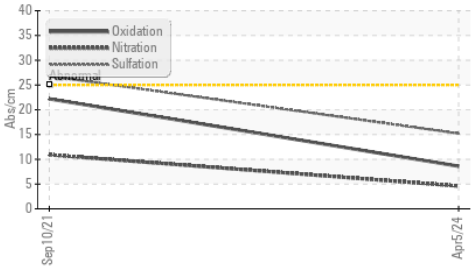
Aluminum (ppm)



Fuel Dilution



FT-IR (Direct Trend)

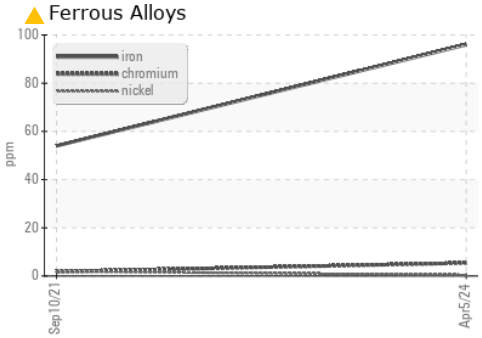


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	---
Appearance	scalar	*Visual	NORML	**NORML**	NORML	---
Odor	scalar	*Visual	NORML	**NORML**	NORML	---
Emulsified Water	scalar	*Visual	>0.1	**NEG**	NEG	---
Free Water	scalar	*Visual		**NEG**	NEG	---

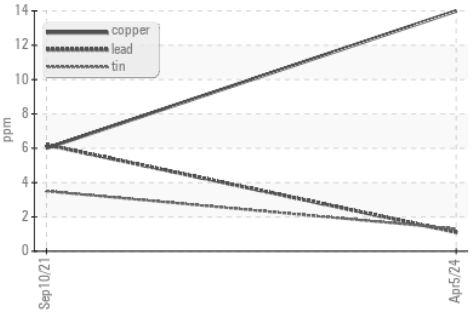
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.0	**10.1**	13.9	---

GRAPHS

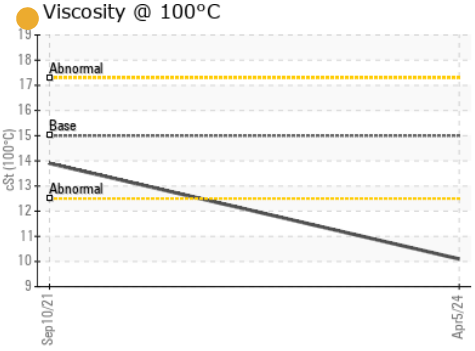
Ferrous Alloys



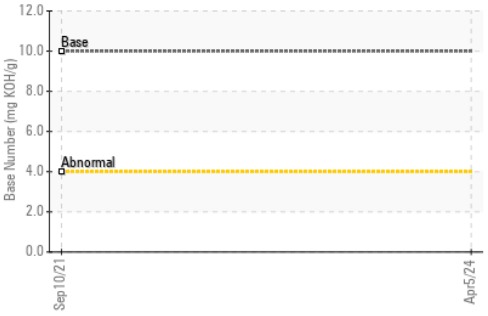
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : ML0000213
Lab Number : 06142063
Unique Number : 10966871
Test Package : CONST (Additional Tests: FuelDilution, PercentFuel, TBN)

Received : 08 Apr 2024
Tested : 15 Apr 2024
Diagnosed : 15 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)

MCCLUNG-LOGAN EQUIPMENT CO - BRIDGEVILLE
17941 SUSSEX HIGHWAY
BRIDGEVILLE, DE
US 19933
Contact: KELLI LEWIS
klewis@mcclung-logan.com
T:
F: (302)337-9083