



VOLVO

OIL ANALYSIS REPORT

WEAR	ATTENTION
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area

[SWO-069177]

Machine Id

TAKEUCHI TL6 406001662

Component

Diesel Engine

Fluid

VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (--- GAL)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. 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		VCP444459	VCP380776	VCP376424
Sample Date		Client Info		20 Feb 2024	10 Jan 2023	10 Jul 2022
Machine Age	hrs	Client Info		3140	3027	2241
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	SEVERE	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	77	87	45
Chromium	ppm	ASTM D5185m	>20	3	3	1
Nickel	ppm	ASTM D5185m	>4	<1	2	1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	21	44	5
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	6	33	6
Tin	ppm	ASTM D5185m	>15	<1	2	1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

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

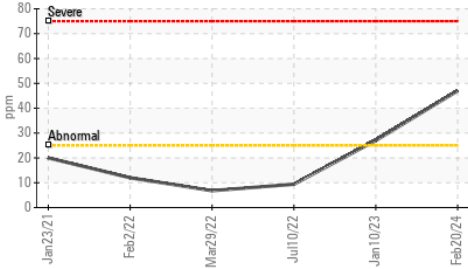
Silicon	ppm	ASTM D5185m	>25	47	27	9
Potassium	ppm	ASTM D5185m	>20	6	2	0
Fuel	%	ASTM D3524	>5	1.6	8.2	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.9	1	2
Nitration	Abs/cm	*ASTM D7624	>20	11.9	10.5	13.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.1	21.9	27.5
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

FLUID CONDITION

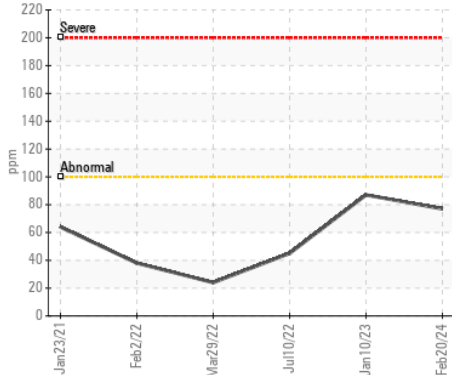
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		4	3	3
Boron	ppm	ASTM D5185m	2.5	27	38	40
Barium	ppm	ASTM D5185m	0.0	0	0	0
Molybdenum	ppm	ASTM D5185m	0.7	67	72	53
Manganese	ppm	ASTM D5185m	0.0	<1	2	<1
Magnesium	ppm	ASTM D5185m	256	967	917	626
Calcium	ppm	ASTM D5185m	2057	1933	1307	1680
Phosphorus	ppm	ASTM D5185m	935	1137	1002	919
Zinc	ppm	ASTM D5185m	1223	1329	1192	1183
Sulfur	ppm	ASTM D5185m	4079	3049	3166	3144
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.1	18.1	25.4
Base Number (BN)	mg KOH/g	ASTM D2896	10	10.2	8.5	9.3
Visc @ 100°C	cSt	ASTM D445	15.0	14.2	11.2	14.7

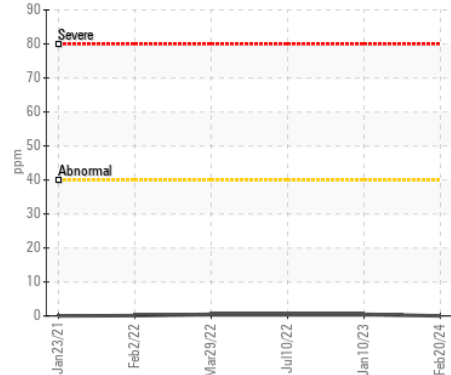
▲ Silicon (ppm)



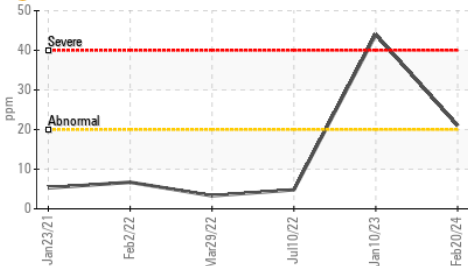
Iron (ppm)



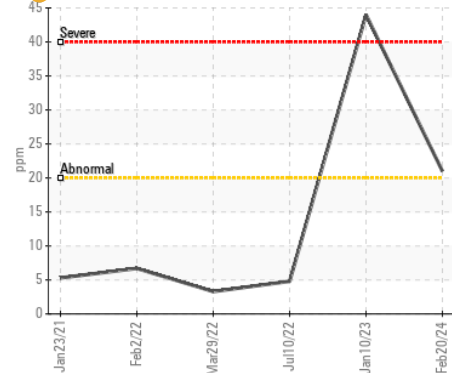
Lead (ppm)



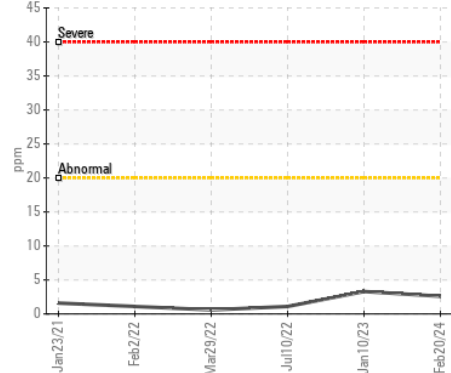
● Aluminum (ppm)



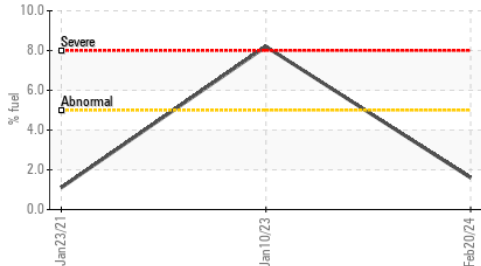
● Aluminum (ppm)



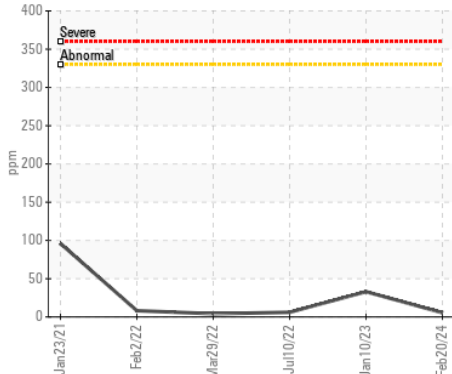
Chromium (ppm)



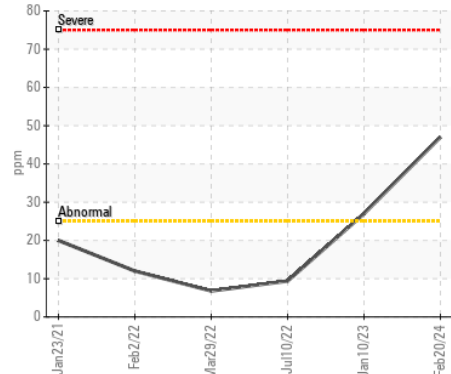
Fuel Dilution



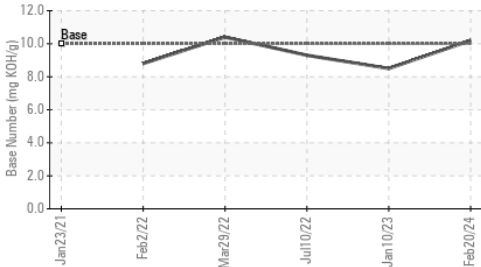
Copper (ppm)



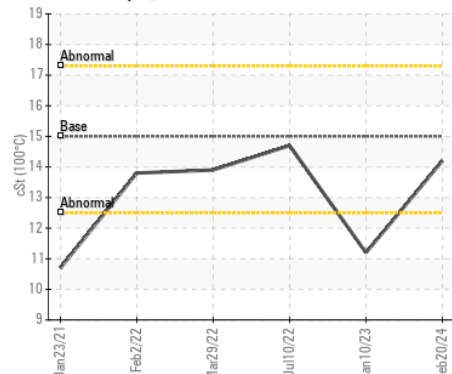
▲ Silicon (ppm)



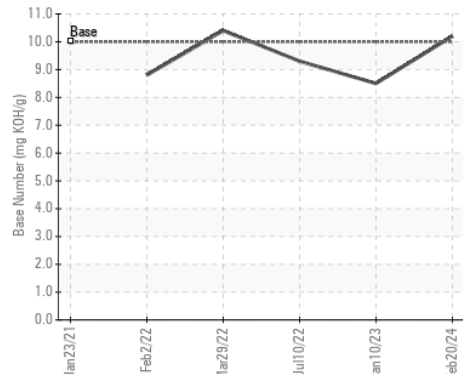
Base Number



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : VCP444459 **Received** : 27 Feb 2024
Lab Number : 06101284 **Tested** : 29 Feb 2024
Unique Number : 10899514 **Diagnosed** : 29 Feb 2024 - Doug Bogart

WHITAKER CONTRACTING
 692 CONVICT CAMP RD
 GUNTERSVILLE, AL
 US 35976

Contact: BROTHER WHITAKER
 BrotherWhitaker@whitaker-contracting.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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F: