



ASCENDUM

OIL ANALYSIS REPORT

WEAR

NORMAL

CONTAMINATION

ABNORMAL

FLUID CONDITION

NORMAL



Area

Ascendum Machinery

Machine Id

VOLVO L45H 4122284

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. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		ASC0009602	ASC0005004	VCP0004248
Sample Date		Client Info		17 May 2024	27 Oct 2023	07 Sep 2022
Machine Age	hrs	Client Info		7355	6259	4083
Oil Age	hrs	Client Info		1096	2176	666
Filter Age	hrs	Client Info		0	0	666
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	21	17	21
Chromium	ppm	ASTM D5185m	>10	1	1	1
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>10	3	3	4
Lead	ppm	ASTM D5185m	>20	<1	<1	<1
Copper	ppm	ASTM D5185m	>15	2	<1	4
Tin	ppm	ASTM D5185m	>10	<1	<1	1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

Elemental level of silicon (Si) above normal indicating ingress of seal material.

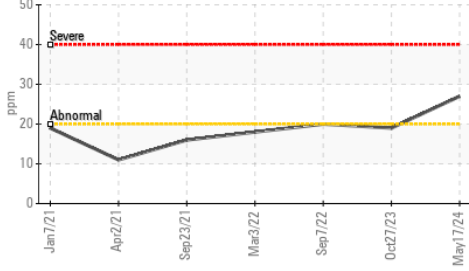
Silicon	ppm	ASTM D5185m	>20	▲ 27	19	20
Potassium	ppm	ASTM D5185m	>20	2	1	2
Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.7	0.7	1.1
Nitration	Abs/cm	*ASTM D7624	>20	10.5	9.9	10.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.4	23.0	25.2
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	>0.1	NEG	NEG	NEG

FLUID CONDITION

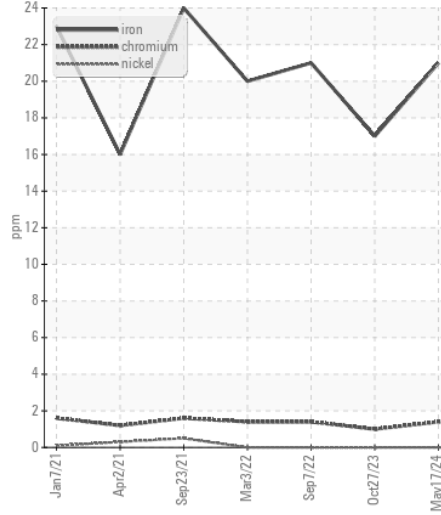
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		3	2	2
Boron	ppm	ASTM D5185m		24	16	25
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		42	43	45
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		519	536	464
Calcium	ppm	ASTM D5185m		1830	1516	1648
Phosphorus	ppm	ASTM D5185m		958	938	901
Zinc	ppm	ASTM D5185m		1160	1219	1119
Sulfur	ppm	ASTM D5185m		3152	2645	2882
Oxidation	Abs/.1mm	*ASTM D7414	>25	23.7	21.0	22.4
Base Number (BN)	mg KOH/g	ASTM D2896		7.6	6.7	10.2
Visc @ 100°C	cSt	ASTM D445		12.9	13.6	13.1

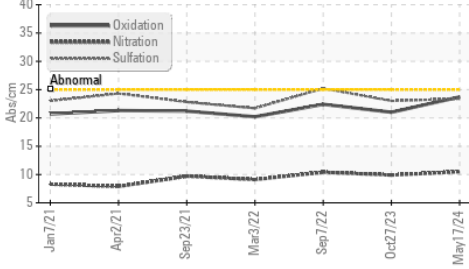
▲ Silicon (ppm)



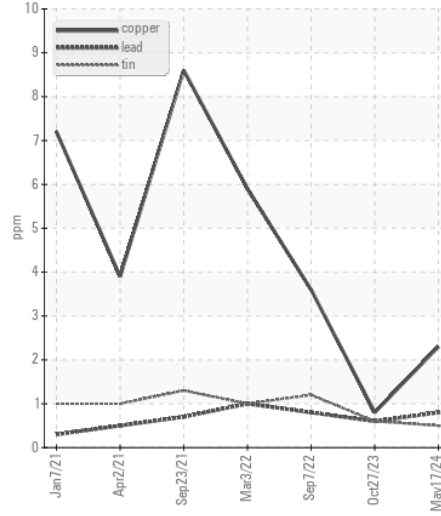
Ferrous Alloys



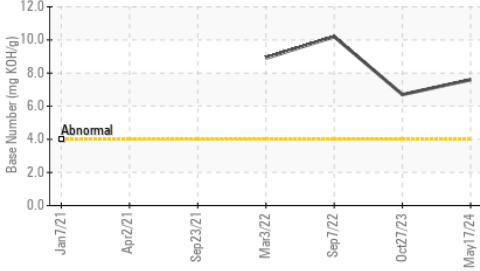
FT-IR (Direct Trend)



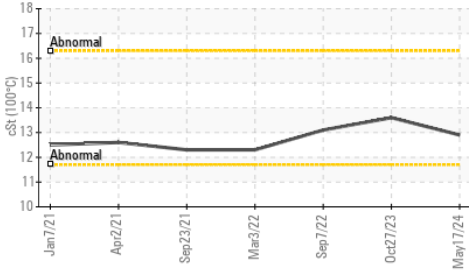
Non-ferrous Metals



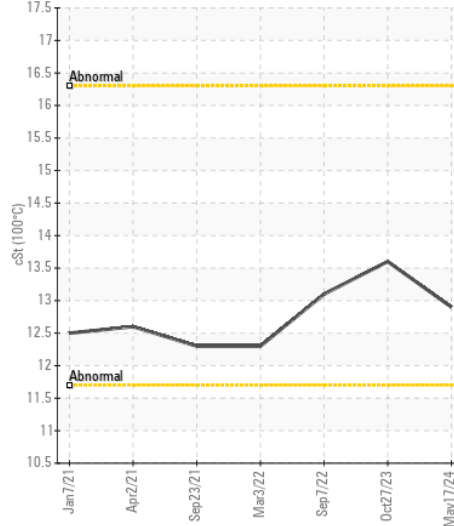
Base Number



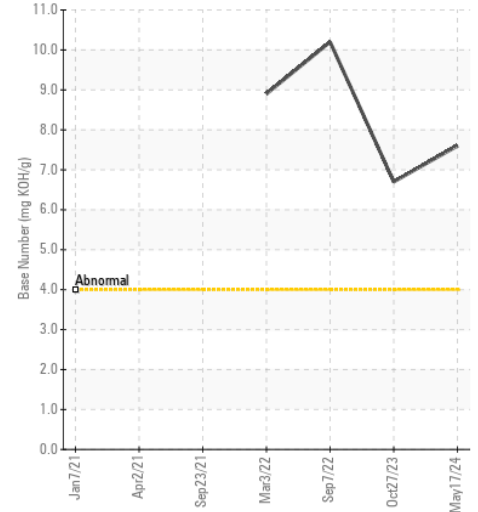
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : ASC0009602
 Lab Number : 06191582
 Unique Number : 11048334
 Test Package : CONST (Additional Tests: TBN)

BENFIELD SANITATION SERVICES
 282 SCOTTS CREEK RD
 STATESVILLE, NC
 US 28625
 Contact: Service Manager

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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