



ASCENDUM

OIL ANALYSIS REPORT



Area
[OMNISOURCE]
 Machine Id
VOLVO L220H 3177
 Component
Diesel Engine
 Fluid
VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (--- GAL)

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

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		ASC0003398	ASC0003476	ASC0003242
Sample Date		Client Info		09 Feb 2024	12 Dec 2023	11 Oct 2023
Machine Age	hrs	Client Info		8637	8263	7828
Oil Age	hrs	Client Info		500	7828	500
Filter Age	hrs	Client Info		500	7828	500
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	3	6	6
Chromium	ppm	ASTM D5185m	>10	<1	0	<1
Nickel	ppm	ASTM D5185m	>10	<1	0	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>10	2	2	0
Lead	ppm	ASTM D5185m	>20	<1	<1	<1
Copper	ppm	ASTM D5185m	>15	1	1	1
Tin	ppm	ASTM D5185m	>10	<1	0	<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

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

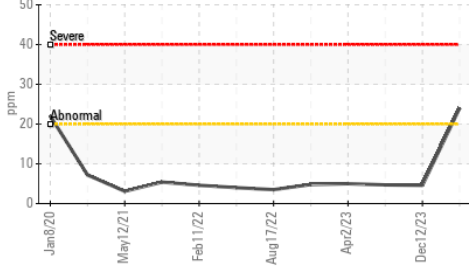
Silicon	ppm	ASTM D5185m	>20	▲ 24	5	5
Potassium	ppm	ASTM D5185m	>20	1	<1	3
Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.4	0.3
Nitration	Abs/cm	*ASTM D7624	>20	6.1	8.3	7.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.8	21.7	21.1
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

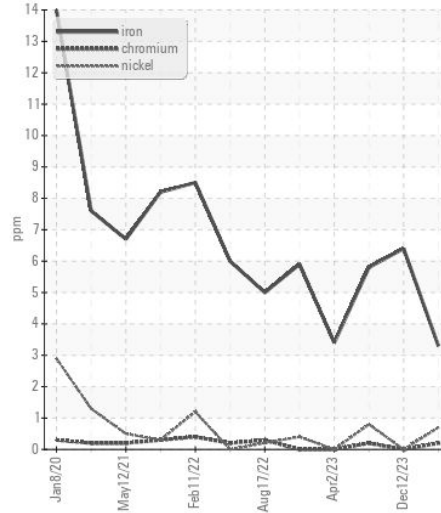
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		0	2	0
Boron	ppm	ASTM D5185m	2.5	54	17	25
Barium	ppm	ASTM D5185m	0.0	13	0	2
Molybdenum	ppm	ASTM D5185m	0.7	38	36	39
Manganese	ppm	ASTM D5185m	0.0	<1	<1	<1
Magnesium	ppm	ASTM D5185m	256	452	521	454
Calcium	ppm	ASTM D5185m	2057	1528	1635	1548
Phosphorus	ppm	ASTM D5185m	935	970	922	861
Zinc	ppm	ASTM D5185m	1223	1024	1085	999
Sulfur	ppm	ASTM D5185m	4079	3365	2756	2662
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.4	20.6	19.0
Base Number (BN)	mg KOH/g	ASTM D2896	10	9.5	8.2	8.9
Visc @ 100°C	cSt	ASTM D445	15.0	12.5	12.7	12.6

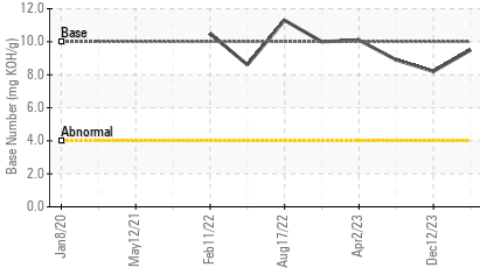
▲ Silicon (ppm)



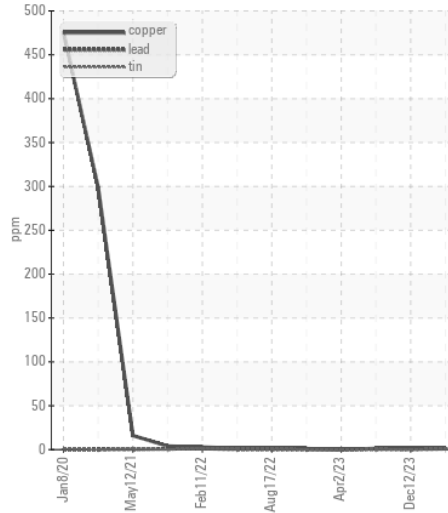
Ferrous Alloys



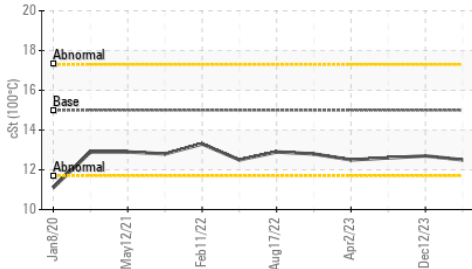
Base Number



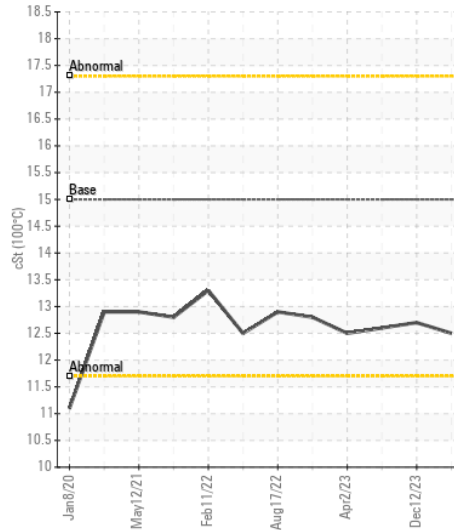
Non-ferrous Metals



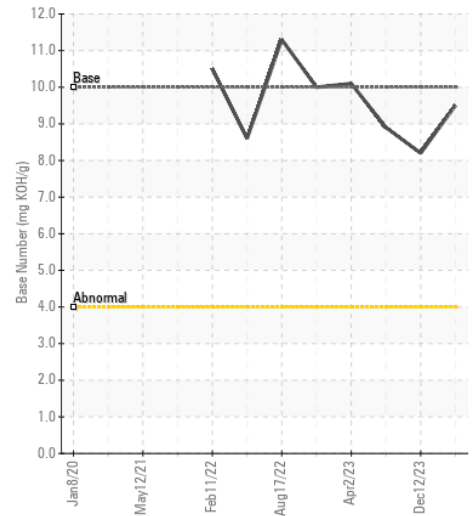
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : ASC0003398 **Received** : 12 Feb 2024
Lab Number : 06085696 **Tested** : 12 Feb 2024
Unique Number : 10873141 **Diagnosed** : 13 Feb 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: TBN)

160 - ASCENDUM MACHINERY INC - MILLS RIVER
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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)