



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Area

[KNUDSON]

Machine Id

VOLVO PENTA 7011449650

Component

Port Diesel Engine

Fluid

DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

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		VPA036216	VPA036189	VPA044931
Sample Date		Client Info		19 Jun 2024	12 Feb 2024	27 Sep 2023
Machine Age	hrs	Client Info		899	735	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Chngd	N/A	N/A
Filter Changed		Client Info		Not Chngd	N/A	N/A
Sample Status				ATTENTION	ATTENTION	ATTENTION

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	8	2	21
Chromium	ppm	ASTM D5185m	>6	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	1	<1	0
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	<1	<1	0
Aluminum	ppm	ASTM D5185m	>20	2	1	2
Lead	ppm	ASTM D5185m	>95	1	1	<1
Copper	ppm	ASTM D5185m	>85	43	14	37
Tin	ppm	ASTM D5185m	>9	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

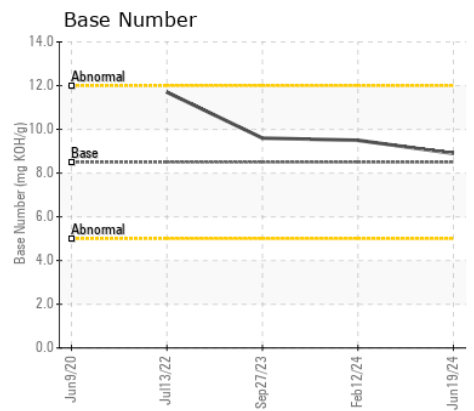
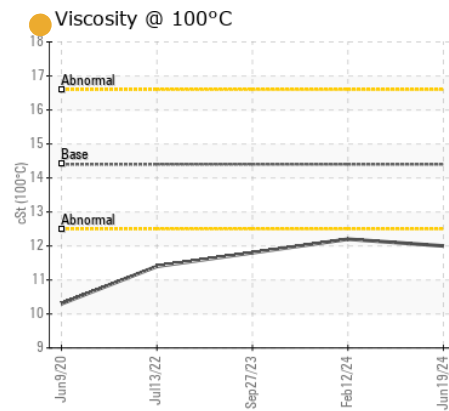
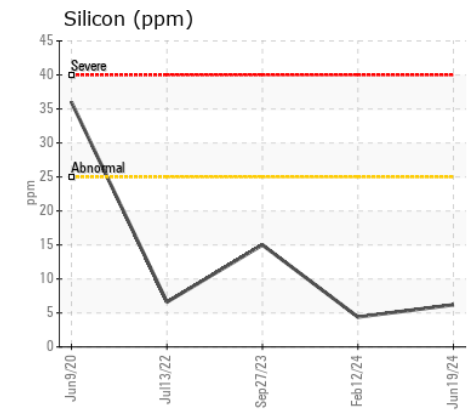
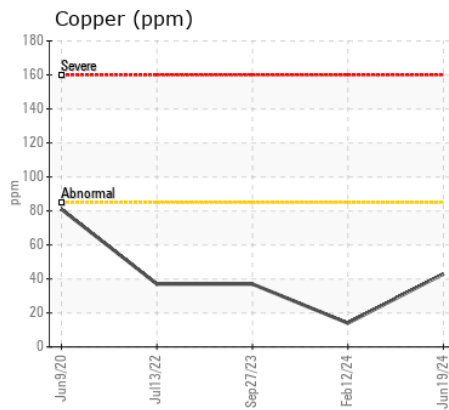
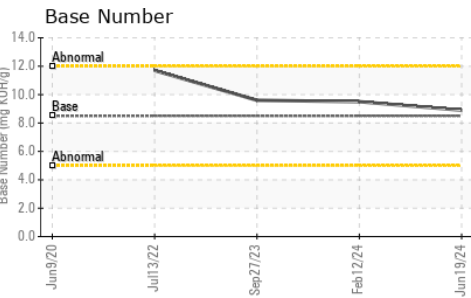
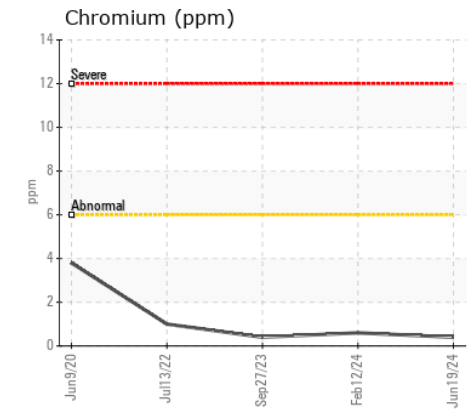
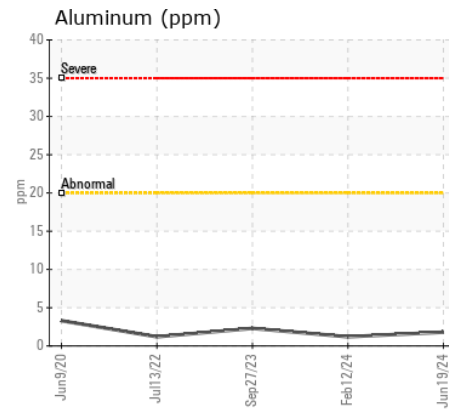
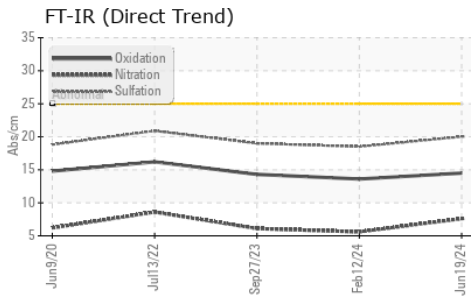
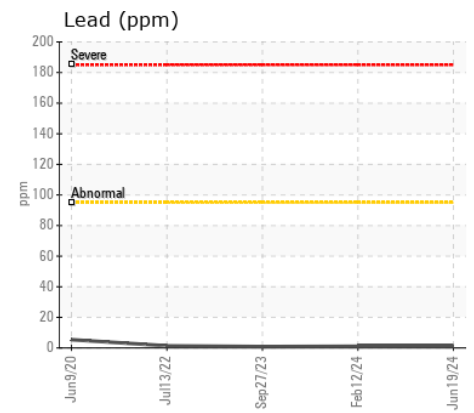
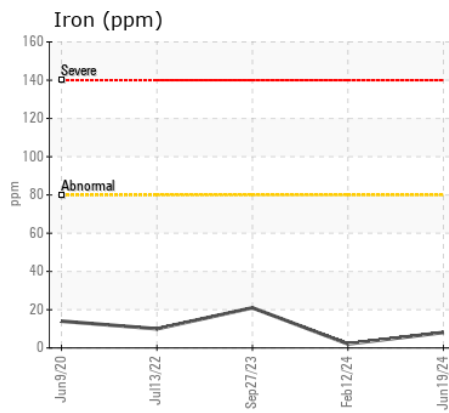
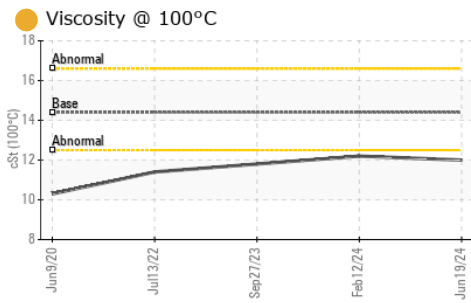
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	6	4	15
Potassium	ppm	ASTM D5185m	>20	2	1	2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.5	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	7.6	5.6	6.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.0	18.5	19.0
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 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	>158	1	0	4
Boron	ppm	ASTM D5185m	250	3	1	317
Barium	ppm	ASTM D5185m	10	0	0	<1
Molybdenum	ppm	ASTM D5185m	100	62	61	129
Manganese	ppm	ASTM D5185m		1	<1	3
Magnesium	ppm	ASTM D5185m	450	1016	961	718
Calcium	ppm	ASTM D5185m	3000	1091	1024	1555
Phosphorus	ppm	ASTM D5185m	1150	1122	964	697
Zinc	ppm	ASTM D5185m	1350	1363	1235	844
Sulfur	ppm	ASTM D5185m	4250	3933	3618	2558
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.5	13.6	14.3
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	8.9	9.5	9.6
Visc @ 100°C	cSt	ASTM D445	14.4	12.0	12.2	11.8



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : VPA036216 **Received** : 27 Jun 2024
Lab Number : 06222952 **Tested** : 28 Jun 2024
Unique Number : 11101149 **Diagnosed** : 30 Jun 2024 - Don Baldrige
Test Package : MOB 1 (Additional Tests: TBN)

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 US 34240
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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)