



# VOLVO PENTA

## OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Area  
**JEREMY BLUNT**  
Machine Id  
**CATERPILLAR JKX00166**  
Component  
**Starboard Diesel Engine**  
Fluid  
**SHELL ROTELLA T4 15W40 (10 GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>VPA059719</b>	VPA044415	VPA043160
Sample Date		Client Info		<b>18 Jun 2024</b>	19 Aug 2023	03 Sep 2022
Machine Age	hrs	Client Info		<b>3610</b>	409	3208
Oil Age	hrs	Client Info		<b>33</b>	151	221
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Chngd</b>	Changed	Changed
Filter Changed		Client Info		<b>Not Chngd</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>25</b>	31	40
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	1
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>25	<b>5</b>	<1	6
Lead	ppm	ASTM D5185m	>40	<b>2</b>	1	4
Copper	ppm	ASTM D5185m	>330	<b>22</b>	35	123
Tin	ppm	ASTM D5185m	>15	<b>0</b>	<1	2
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

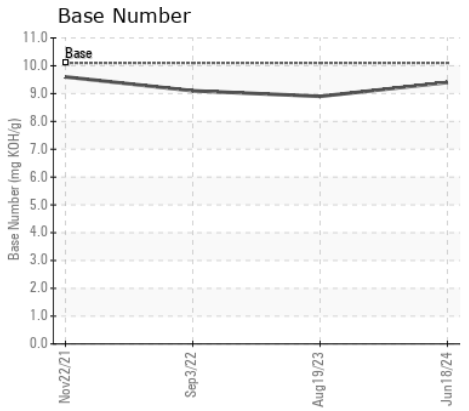
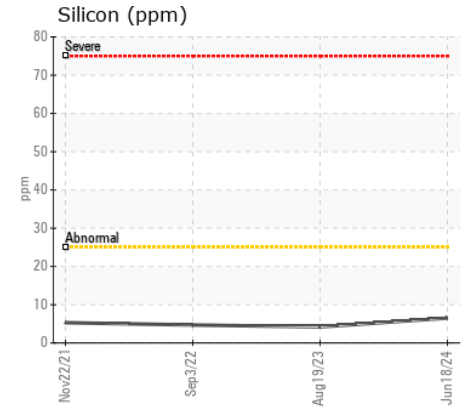
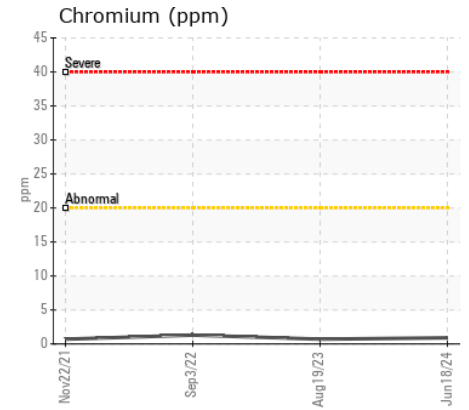
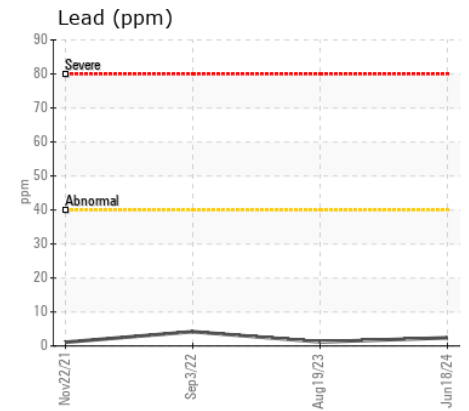
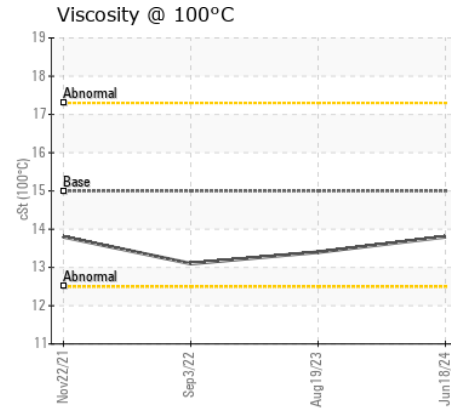
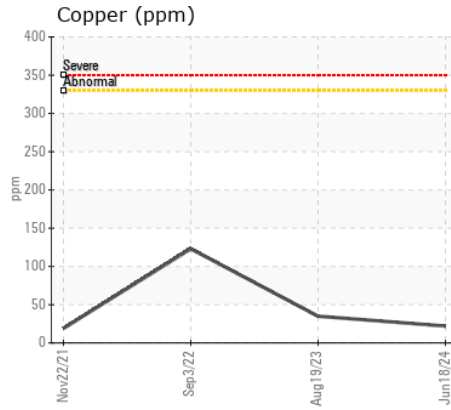
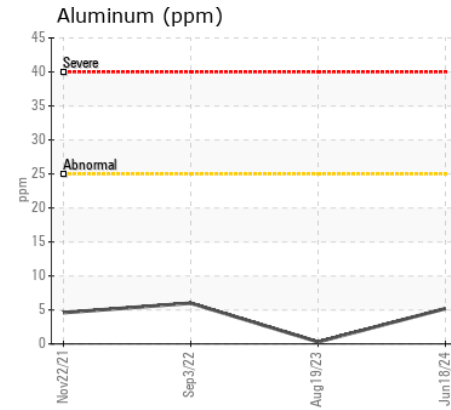
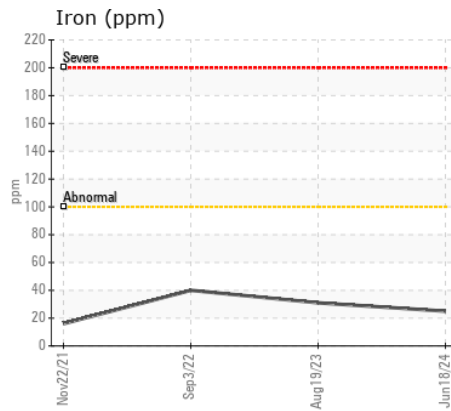
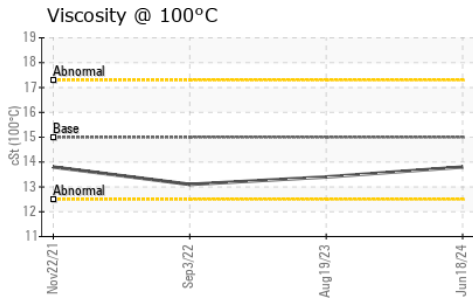
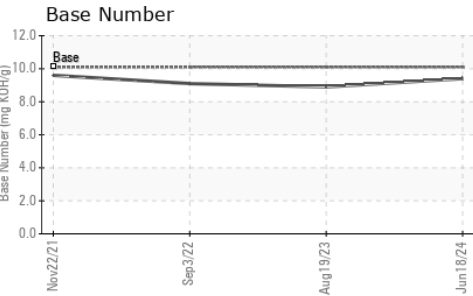
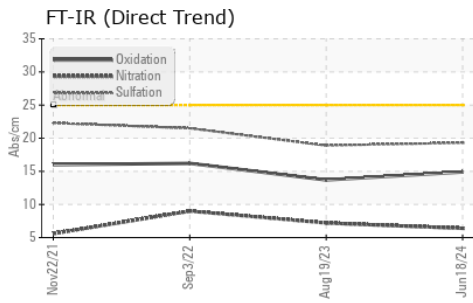
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>6</b>	4	5
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	2	3
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.3</b>	0.6	1.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.4</b>	7.2	9.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.3</b>	18.9	21.5
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	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		<b>7</b>	4	7
Boron	ppm	ASTM D5185m		<b>50</b>	57	45
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>45</b>	43	20
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185m		<b>532</b>	397	164
Calcium	ppm	ASTM D5185m		<b>1777</b>	1871	1693
Phosphorus	ppm	ASTM D5185m		<b>1118</b>	1005	619
Zinc	ppm	ASTM D5185m		<b>1395</b>	1219	762
Sulfur	ppm	ASTM D5185m		<b>4016</b>	3811	3894
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.9</b>	13.7	16.2
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>9.4</b>	8.9	9.1
Visc @ 100°C	cSt	ASTM D445	15	<b>13.8</b>	13.4	13.1



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VPA059719 **Received** : 20 Jun 2024  
**Lab Number** : 06215585 **Tested** : 21 Jun 2024  
**Unique Number** : 11088449 **Diagnosed** : 22 Jun 2024 - Don Baldrige  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**Edward's Marine and Sons**  
 12741 Sunset Ave  
 OCEAN CITY, MD  
 US 21842

Contact: Edward Bartholme  
 edwardsmarine@comcast.net; canastasio@wearcheckusa.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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