

OIL ANALYSIS REPORT



ALASKA LUXURY TOURS APEX-STBD VOLVO PENTA 2006040393 - STARBOARD DIESEL ENGINE

Sample No: VPA060141
Oil Type: KIRKLAND 15W40

SAMPLE INFORMATION

Sample Number	VPA060141	VPA060120	VPA036543	VPA056360
Sample Date	17 Oct 2023	14 Sep 2023	07 Aug 2023	03 Jul 2023
Machine Hours	2737	2654	2440	2209
Oil Hours	83	214	230	201
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

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OIL CONDITION

Visc @ 100°C	cSt	14.8	13.8	15.1	15.2
Base Number (BN)	mg KOH/g	9.3	9.3	9.0	9.7
Oxidation (PA)	%	68	80	77	84

CONTAMINATION

Soot %	%	0.2	0.4	0.4	0.4
Nitration (PA)	%	72	89	84	92
Sulfation (PA)	%	55	61	60	63
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	3	4	3	2
Sodium	ppm	2	6	2	<1
Potassium	ppm	4	5	0	2

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

WEAR METALS

Iron	ppm	5	9	8	10
Copper	ppm	7	5	10	9
Lead	ppm	1	<1	4	4
Tin	ppm	0	<1	<1	<1
Aluminum	ppm	<1	1	0	2
Chromium	ppm	0	<1	<1	<1
Molybdenum	ppm	59	30	64	60
Nickel	ppm	<1	0	1	2
Titanium	ppm	0	15	<1	<1
Silver	ppm	0	0	0	0
Manganese	ppm	0	1	<1	<1
Vanadium	ppm	0	<1	<1	<1

ADDITIVES

Calcium	ppm	1041	1572	1193	1115
Magnesium	ppm	1003	794	1063	986
Zinc	ppm	1325	831	1383	1295
Phosphorus	ppm	1077	722	1121	1016
Barium	ppm	0	0	0	0
Boron	ppm	2	91	<1	<1

Depot: VP154394
Unique No: 10709775
Signed: Jonathan Hester
Report Date: 25 Oct 2023

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VOLVO PENTA

GRAPHS

