

UOM

hrs

hrs

Method

Client Info

Client Info

Client Info

Client Info

Limit/Abn

Current

VPA062012

10 May 2024

452

0

Test

Sample Number

Sample Date

Machine Age

Oil Age

WEAR

NORMAL

ABNORMAL

NORMAL

History1

VPA023708 ----

08 Oct 2021

450

15

History2

RAFFY LORENTZIAN [205581] VOLVO PENTA A218649 - STERNDRIVE Port Gearbox

VOLVO PENTA GL-5 SAE 75W90 (2 QTS)

RECOMMENDATION

We advise that you check for the source of water entry. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

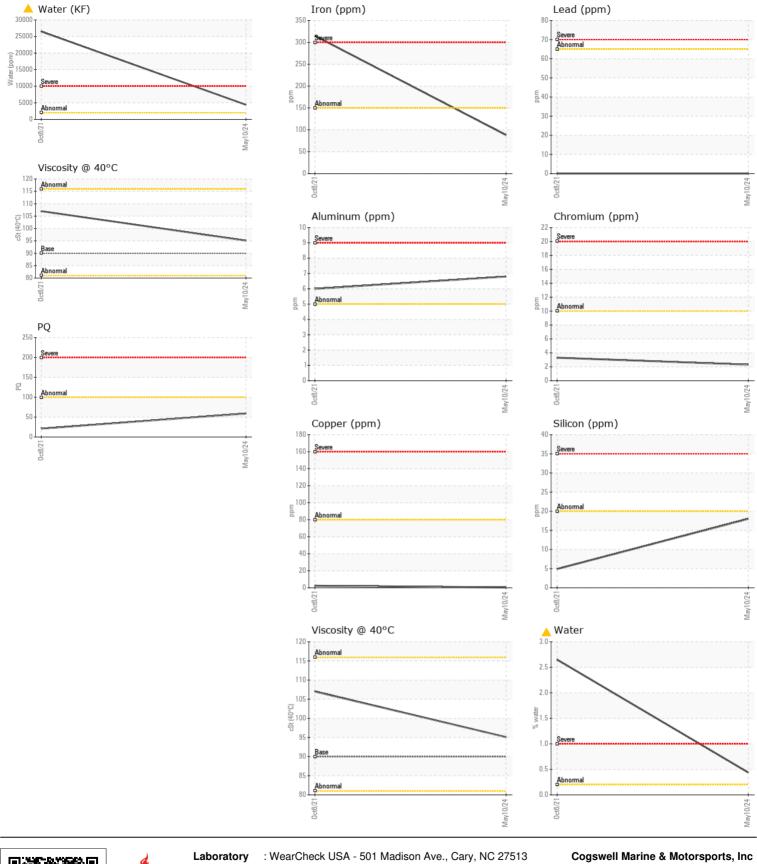
CONTAMINATION

Appearance is hazy. There is a moderate concentration of water present in the oil.

Filter Age hrs Client Info O	Oli Age	1115	Chefit Inio		U	15	
Filter ChangedClient InfoN/AN/ASample StatusASTM D8184SEVEREPQASTM D81845921IronppmASTM D8185>10088315ChromiumppmASTM D5185>1088315NickelppmASTM D5185>108100SilverppmASTM D5185<00AluminumppmASTM D5185>576LeadppmASTM D5185>80<12CopperppmASTM D5185>80<10VanadiumppmASTM D5185>80<10VanadiumppmASTM D5185>80<10Vellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185>2010SiliconppmASTM D5185>2010SiliconppmASTM D5185>2010SiliconppmASTM D5185>2010SiliconppmASTM D5185>2010SiliconppmASTM D5185>2010Soliconscalar'VisualNONENONESiliconppmASTM D51852040	Filter Age	hrs	Client Info		0	0	
Sample Status ABTM D8184 SEVERE PQ ASTM D8184 59 2:1 Iron ppm ASTM D5185m >10 88 3:15 Nickel ppm ASTM D5185m >10 2 3 Nickel ppm ASTM D5185m >10 88 10 Silver ppm ASTM D5185m >10 0 Aluminum ppm ASTM D5185m >55 7 6 Lead ppm ASTM D5185m >60 0 Vanadium ppm ASTM D5185m >80 <1 0 Vanadium ppm ASTM D5185m >80 <1 0 Vanadium ppm ASTM D5185m >80 <1 0 Vellow Metal scalar 'Visual NONE NONE NONE Silicon ppm	Oil Changed		Client Info		Changed	Changed	
PQ ASTM D8184 59 21 iron ppm ASTM D5185m >100 88 A 315 Nickel ppm ASTM D5185m >10 2 3 Nickel ppm ASTM D5185m >10 8 10 Titanium ppm ASTM D5185m >10 8 10 Silver ppm ASTM D5185m >5 7 6 Lead ppm ASTM D5185m >50 0 0 Vanadium ppm ASTM D5185m >80 <1 0 Vanadium ppm ASTM D5185m >80 <1 0 Vanadium ppm ASTM D5185m >80 <1 0 Vanadium ppm ASTM D5185m >20 18 5 Vanadium ppm ASTM D5185m >20 1 0	Filter Changed		Client Info		N/A	N/A	
Iron ppm ASTM D5185m >150 88 ▲ 315 Chromium ppm ASTM D5185m >10 2 3 Nickel ppm ASTM D5185m >10 8 10 Titanium ppm ASTM D5185m 6 0 Aluminum ppm ASTM D5185m >55 7 6 Lead ppm ASTM D5185m >60 0 Copper ppm ASTM D5185m >80 <1 0 Vanadium ppm ASTM D5185m >20 18 5 Vanadium ppm ASTM D5185m >20 1	Sample Status				ABNORMAL	SEVERE	
Iron ppm ASTM D5185m >150 88 ▲ 315 Chromium ppm ASTM D5185m >10 2 3 Nickel ppm ASTM D5185m >10 8 10 Titanium ppm ASTM D5185m 6 0 Aluminum ppm ASTM D5185m >55 7 6 Lead ppm ASTM D5185m >60 0 Copper ppm ASTM D5185m >80 <1 0 Vanadium ppm ASTM D5185m >20 18 5 Vanadium ppm ASTM D5185m >20 1							
Chromium ppm ASTM D5185m >10 2 3 Nickel ppm ASTM D5185m >10 8 10 Titanium ppm ASTM D5185m <1 0 Silver ppm ASTM D5185m >5 7 6 Aluminum ppm ASTM D5185m >60 0 Lead ppm ASTM D5185m >80 <1 2 Vanadium ppm ASTM D5185m >80 <1 0 Vanadium ppm ASTM D5185m >80 <1 0 Vanadium ppm ASTM D5185m >20 18 5 Vanadium ppm ASTM D5185m >20 18 2.65 Vanadium ppm ASTM D5185m >20 1 0 Vallow ASTM D5185m >20 18 2.65 <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
Nickel ppm ASTM D5185m >10 8 10 Titanium ppm ASTM D5185m 0 0 Silver ppm ASTM D5185m >5 7 6 Lead ppm ASTM D5185m >55 7 6 Lead ppm ASTM D5185m >60 0 Copper ppm ASTM D5185m >80 1 2 Vanadium ppm ASTM D5185m >80 0 0 Vanadium ppm ASTM D5185m >80 0 0 Vanadium ppm ASTM D5185m >20 18 5 Vandum ppm ASTM D5185m >20 1 0 Silicon ppm ASTM D5185m >20 1 0 Silicon ppm ASTM D5185m >20 1 0 </th <th></th> <th>ppm</th> <th></th> <th></th> <th></th> <th></th> <th></th>		ppm					
Titanium Dim SilverASTM D5185m<		ppm					
Silver ppm ASTM D5185m S 7 6 Aluminum ppm ASTM D5185m >55 7 6 Lead ppm ASTM D5185m >65 0 0 Copper ppm ASTM D5185m >80 <1 0 Vanadium ppm ASTM D5185m >20 18 5 Yellow Metal scalar 'Visual NONE NONE Yellow Metal scalar 'Visual NONE MODER Silicon ppm ASTM D5185m >20 4 0.4400 Debris scalar 'Visual NORE NORE		ppm		>10			
Aluminum ppm ASTM D5185m >55 7 6 Lead ppm ASTM D5185m >65 0 0 Copper ppm ASTM D5185m >80 <1 0 Vanadium ppm ASTM D5185m >80 <1 0 Vanadium ppm ASTM D5185m >80 <1 0 White Metal scalar 'Visual NONE NONE NONE Yellow Metal scalar 'Visual NONE NONE NONE Silicon ppm ASTM D5185m >20 1 0 Water % ASTM D5185m >20 1 0 Debris scalar 'Visual NONE MONE Appearance scalar 'Visual NORM MORM NORML Sodium ppm ASTM D5185m		ppm				0	
Lead ppm ASTM D5185m >65 0 0 Copper ppm ASTM D5185m >80 <1 2 Tin ppm ASTM D5185m >8 <1 0 Vanadium ppm ASTM D5185m >8 <1 0 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m<>20 18 5 Water % ASTM D5030 >0.2 4.0440 2.6550 ppm Water ppm ASTM D6304 >0.2 4.0400 2.6550 Sand/Dirt scalar *Visual NORE NORE NORE Appearance scalar *Visual <th>Silver</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>0</th> <th>0</th> <th></th>	Silver	ppm	ASTM D5185m		0	0	
Copper ppm ASTM D5185m >80 <1	Aluminum	ppm	ASTM D5185m	>5	7	6	
Tin ppm ASTM D5185m >8 <1	Lead	ppm	ASTM D5185m	>65	0	0	
Vanadium ppm ASTM D5185m 0 0 White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE Silicon ppm ASTM D5185m >20 18 5 Potassium ppm ASTM D5185m >20 1 0 Water % ASTM D5185m >20 1 0 Water % ASTM D6304 >0.2 4400 4.265 Debris scalar *Visual NONE MODER NONE Appearance scalar *Visual NOR MORM NORML Godor scalar *Visual NORM MORM NORML Appearance scalar *Visual NORM NORML NORML Boron	Copper	ppm	ASTM D5185m	>80	<1	2	
White Metal scalar *Visual NONE NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE Silicon ppm ASTM D5185m >20 18 5 Potassium ppm ASTM D5185m >20 1 0 Water % ASTM D6304 >0.20 ▲ 04400 ▲ 2.65 ppm Water ppm ASTM D6304 >2000 ▲ 4400 ▲ 2.6500 Silt scalar *Visual NONE MODER NONE Debris scalar *Visual NONE NONE NONE Appearance scalar *Visual NORM MORM NORML Godr scalar *Visual NORM NORML NORML Boron ppm ASTM D5185m 19 0.2% <th>Tin</th> <th>ppm</th> <th>ASTM D5185m</th> <th>>8</th> <th><1</th> <th>0</th> <th></th>	Tin	ppm	ASTM D5185m	>8	<1	0	
Yellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m >20 18 5 Potassium ppm ASTM D5185m >20 1 0 Water % ASTM D6304 >0.2 ▲ 0.4400 ▲ 26500 ppm Water ppm ASTM D6304 >2000 ▲ 4400 ▲ 26500 Silt scalar *Visual NONE MODER NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NORM MORML NORML Appearance scalar *Visual NORML NORML NORML Gdor scalar *Visual NORML NORML NORML Barium ppm ASTM D5185m 19 207 Boron ppm	Vanadium	ppm	ASTM D5185m		0	0	
Silicon ppm ASTM D5185m >20 18 5 Potassium ppm ASTM D5185m >20 1 0 Water % ASTM D6304 >0.2 ▲ 0.440 ▲ 2.65 ppm Water ppm ASTM D6304 >2000 ▲ 4400 ▲ 26500 Silt scalar *Visual NONE MODER NONE Debris scalar *Visual NONE NONE VLITE Sand/Dirt scalar *Visual NORE NONE NORE Appearance scalar *Visual NORML HAZY Gdor scalar *Visual NORML NORML Boron ppm ASTM D5185m 19 207 Barium ppm ASTM D5185m 133 188 Magnesium ppm ASTM D5185m	White Metal	scalar	*Visual	NONE	NONE	NONE	
Potassium ppm ASTM D5185m >20 1 0 Water % ASTM D6304 >0.2 ^ 0.4400 ^ 2.65 ppm Water ppm ASTM D6304 >2000 ^ 4400 ^ 2.650 Silt scalar *Visual NONE MODER NONE Debris scalar *Visual NONE NONE VLITE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML PHAZY Odor scalar *Visual NORML NORML NORML Boron ppm ASTM D5185m 19 207 Boron ppm ASTM D5185m 4 0 Molybdenum ppm ASTM D5185m 136 0 Magnesium ppm ASTM D5185m 202	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Potassium ppm ASTM D5185m >20 1 0 Water % ASTM D6304 >0.2 ^ 0.4400 ^ 2.65 ppm Water ppm ASTM D6304 >2000 ^ 4400 ^ 2.650 Silt scalar *Visual NONE MODER NONE Debris scalar *Visual NONE NONE VLITE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML PHAZY Odor scalar *Visual NORML NORML NORML Boron ppm ASTM D5185m 19 207 Boron ppm ASTM D5185m 4 0 Molybdenum ppm ASTM D5185m 136 0 Magnesium ppm ASTM D5185m 202	<u></u>				40	_	
Water % ASTM D6304 >0.2 0.4400 2.65 ppm Water ppm ASTM D6304 >2000 44000 26500 Silt scalar *Visual NONE MODER NONE Debris scalar *Visual NONE NONE VLITE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORM MRDEN NORML Odor scalar *Visual NORM NORML NORML Sodium ppm ASTM D5185m 19 207 Boron ppm ASTM D5185m 113 188 Molybdenum ppm ASTM D5185m 4 0 Magnesium ppm ASTM D5185m 136 0 Magnesium ppm ASTM D5185m 533 18 Phosphorus ppm ASTM D5185m 202 22 <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>							
ppm Water ppm ASTM D6304 >2000 4 4400 26500 Silt scalar *Visual NONE MODER NONE Debris scalar *Visual NONE NONE VLITE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORM MAZY Odor scalar *Visual NORM MORML NORML Boron scalar *Visual >0.2 0.2% Barium ppm ASTM D5185m 19 0.207 Molybdenum ppm ASTM D5185m 4 0 Magnesium ppm ASTM D5185m 136 0 Magnesium ppm ASTM D5185m 533 18 Phosphorus ppm ASTM D5185m 2022 222					-		
Siltscalar*VisualNONEMODERNONEDebrisscalar*VisualNONENONEVLITESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLHAZYHAZYOdorscalar*VisualNORMLMORMLNORMLEmulsified Waterscalar*Visual>0.20.2% \blacktriangle 0.2%SodiumppmASTM D5185m19207BoronppmASTM D5185m40BariumppmASTM D5185m40MolybdenumppmASTM D5185m1360MagnesiumppmASTM D5185m53318PhosphorusppmASTM D5185m20222PhosphorusppmASTM D5185m235333SulfurppmASTM D5185m2190126081Visc @ 40°CcStASTM D5185m90.095.1107							
Debrisscalar*VisualNONENONEVLITESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMHAZYHAZYOdorscalar*VisualNORMNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.20.2%▲ 0.2%SodiumppmASTM D5185m19207BoronppmASTM D5185m513188BariumppmASTM D5185m40MolybdenumppmASTM D5185m1360MagnesiumppmASTM D5185m53318CalciumppmASTM D5185m202222PhosphorusppmASTM D5185m235333ZincppmASTM D5185m2190126081Visc @ 40°CcStASTM D5185m90.095.1107	••						
Sand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLHAZYHAZYOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.20.2% \blacktriangle 0.2%SodiumppmASTM D5185m19207BoronppmASTM D5185m513188BariumppmASTM D5185m40MolybdenumppmASTM D5185m1360MaganeseppmASTM D5185m53318CalciumppmASTM D5185m20222PhosphorusppmASTM D5185m235333ZincppmASTM D5185m235333SulfurppmASTM D5185m2190126081Visc @ 40°CcStASTM D44590.095.1107							
Appearancescalar*VisualNORMLHAZYHAZYOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.20.2%0.2%SodiumppmASTM D5185m19207BoronppmASTM D5185m40BariumppmASTM D5185m40MolybdenumppmASTM D5185m1360MagnesiumppmASTM D5185m53318CalciumppmASTM D5185m20222PhosphorusppmASTM D5185m1608893ZincppmASTM D5185m23533SulfurppmASTM D5185m2190126081Visc @ 40°CcStASTM D44590.095.1107							
Odorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.20.2%▲ 0.2%SodiumppmASTM D5185m19207BoronppmASTM D5185m513188BariumppmASTM D5185m40MolybdenumppmASTM D5185m1360ManganeseppmASTM D5185m1333MagnesiumppmASTM D5185m20222PhosphorusppmASTM D5185m20222PhosphorusppmASTM D5185m23533SulfurppmASTM D5185m2190126081Visc @ 40°CcStASTM D44590.095.1107	Sand/Dirt						
Emulsified Water scalar *Visual >0.2 0.2% ▲ 0.2% Sodium ppm ASTM D5185m 19 207 Boron ppm ASTM D5185m 513 188 Barium ppm ASTM D5185m 4 0 Molybdenum ppm ASTM D5185m 44 0 Magnese ppm ASTM D5185m 136 0 Magnesium ppm ASTM D5185m 533 18 Calcium ppm ASTM D5185m 202 22 Phosphorus ppm ASTM D5185m 235 333 Zinc ppm ASTM D5185m 21901 26081 Visc @ 40°C cSt ASTM D5185m 21901 107		scalar	*Visual				
Sodium ppm ASTM D5185m 19 207 Boron ppm ASTM D5185m 513 188 Barium ppm ASTM D5185m 4 0 Molybdenum ppm ASTM D5185m 136 0 Manganese ppm ASTM D5185m 136 0 Magnesium ppm ASTM D5185m 53 18 Calcium ppm ASTM D5185m 202 22 Phosphorus ppm ASTM D5185m 203 33 Zinc ppm ASTM D5185m 235 33 Sulfur ppm ASTM D5185m 21901 26081 Visc @ 40°C cSt ASTM D445 90.0 95.1 107				NORML		NORML	
Boron ppm ASTM D5185m 513 188 Barium ppm ASTM D5185m 4 0 Molybdenum ppm ASTM D5185m 136 0 Manganese ppm ASTM D5185m 136 0 Magnesium ppm ASTM D5185m 53 18 Calcium ppm ASTM D5185m 202 22 Phosphorus ppm ASTM D5185m 235 33 Zinc ppm ASTM D5185m 235 33 Sulfur ppm ASTM D5185m 21901 26081 Visc @ 40°C cSt ASTM D445 90.0 95.1 107	Emulsified Water	scalar	*Visual	>0.2	0.2%	▲ 0.2%	
Barium ppm ASTM D5185m 4 0 Molybdenum ppm ASTM D5185m 136 0 Manganese ppm ASTM D5185m 133 3 Magnesium ppm ASTM D5185m 53 18 Calcium ppm ASTM D5185m 202 22 Phosphorus ppm ASTM D5185m 1608 893 Zinc ppm ASTM D5185m 235 33 Sulfur ppm ASTM D5185m 21901 26081 Visc @ 40°C cSt ASTM D445 90.0 95.1 107	Sodium	ppm	ASTM D5185m		19	207	
Molybdenum ppm ASTM D5185m 136 0 Manganese ppm ASTM D5185m 13 3 Magnesium ppm ASTM D5185m 53 18 Calcium ppm ASTM D5185m 202 22 Phosphorus ppm ASTM D5185m 1608 8933 Zinc ppm ASTM D5185m 235 33 Sulfur ppm ASTM D5185m 21901 26081 Visc @ 40°C cSt ASTM D445 90.0 95.1 107	Boron	ppm	ASTM D5185m		513	188	
Manganese ppm ASTM D5185m 13 3 Magnesium ppm ASTM D5185m 53 18 Calcium ppm ASTM D5185m 202 22 Phosphorus ppm ASTM D5185m 1608 893 Zinc ppm ASTM D5185m 235 33 Sulfur ppm ASTM D5185m 21901 26081 Visc @ 40°C cSt ASTM D445 90.0 95.1 107	Barium	ppm	ASTM D5185m		4	0	
Magnesium ppm ASTM D5185m 53 18 Calcium ppm ASTM D5185m 202 22 Phosphorus ppm ASTM D5185m 1608 893 Zinc ppm ASTM D5185m 235 33 Sulfur ppm ASTM D5185m 21901 26081 Visc @ 40°C cSt ASTM D445 90.0 95.1 107	Molybdenum	ppm	ASTM D5185m		136	0	
Calcium ppm ASTM D5185m 202 22 Phosphorus ppm ASTM D5185m 1608 893 Zinc ppm ASTM D5185m 235 33 Sulfur ppm ASTM D5185m 21901 26081 Visc @ 40°C cSt ASTM D445 90.0 95.1 107	Manganese	ppm	ASTM D5185m		13	3	
Phosphorus ppm ASTM D5185m 1608 893 Zinc ppm ASTM D5185m 235 33 Sulfur ppm ASTM D5185m 21901 26081 Visc @ 40°C cSt ASTM D445 90.0 95.1 107	Magnesium	ppm	ASTM D5185m		53	18	
Phosphorus ppm ASTM D5185m 1608 893 Zinc ppm ASTM D5185m 235 33 Sulfur ppm ASTM D5185m 21901 26081 Visc @ 40°C cSt ASTM D445 90.0 95.1 107	Calcium	ppm	ASTM D5185m		202	22	
Zinc ppm ASTM D5185m 235 33 Sulfur ppm ASTM D5185m 21901 26081 Visc @ 40°C cSt ASTM D445 90.0 95.1 107	Phosphorus		ASTM D5185m		1608	893	
Sulfur ppm ASTM D5185m 21901 26081 Visc @ 40°C cSt ASTM D445 90.0 95.1 107	Zinc		ASTM D5185m		235	33	
Visc @ 40°C cSt ASTM D445 90.0 95.1 107	Sulfur		ASTM D5185m				
				90.0			
		*					VP152133

FLUID CONDITION

The condition of the oil is acceptable for the time in service.



Sample No. : VPA062012 Received : 13 May 2024 865 Stella Street Lab Number : 06177911 CHULA VISTA, CA Tested : 17 May 2024 Unique Number : 11029237 : 17 May 2024 - Jonathan Hester US 91911 Diagnosed Test Package : MOB 1 (Additional Tests: KF, PQ) Contact: Mitchell Cogswell Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. Cogswellmarinemotorsports@gmail.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: