



VOLVO PENTA

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL

Area
DANIEL HUTCHINSON [HUTCH]
Machine Id
JAGUAR HCP12200
Component
Diesel Engine
Fluid
RAVENOL 0W30 (7 QTS)

RECOMMENDATION

The oil is near the end of it's useful service life, recommend schedule an oil change. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		VPA059537	VPA060181	VPA041594
Sample Date		Client Info		08 Jan 2024	13 Nov 2023	01 Aug 2023
Machine Age	mls	Client Info		79222	75000	71000
Oil Age	mls	Client Info		4000	4000	3000
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ABNORMAL	ABNORMAL	MARGINAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	47	▲ 108	48
Chromium	ppm	ASTM D5185m	>20	1	3	2
Nickel	ppm	ASTM D5185m	>4	<1	2	<1
Titanium	ppm	ASTM D5185m		<1	2	1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	31	▲ 70	29
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	2	4	2
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

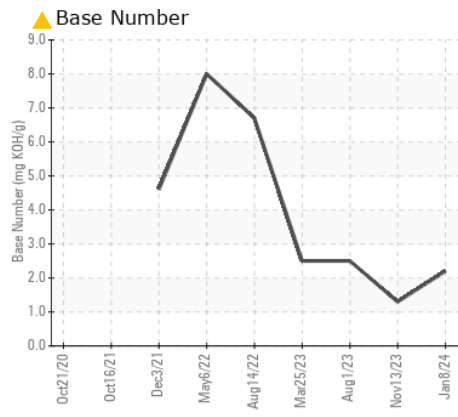
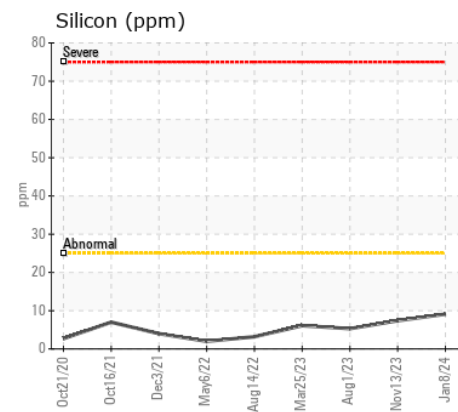
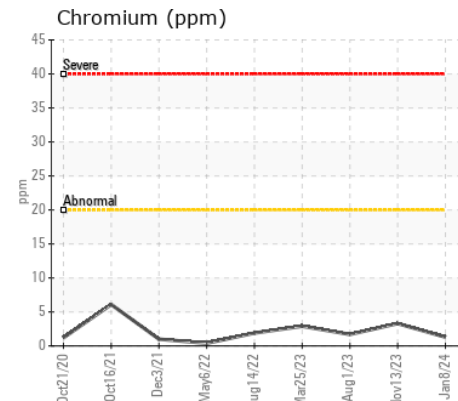
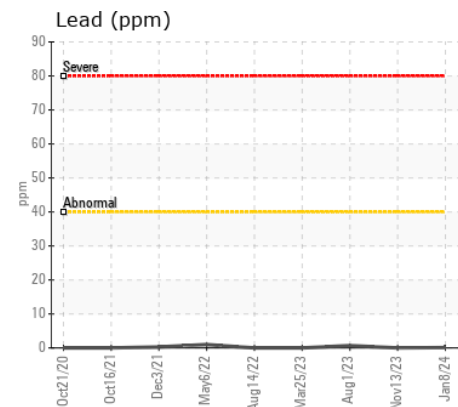
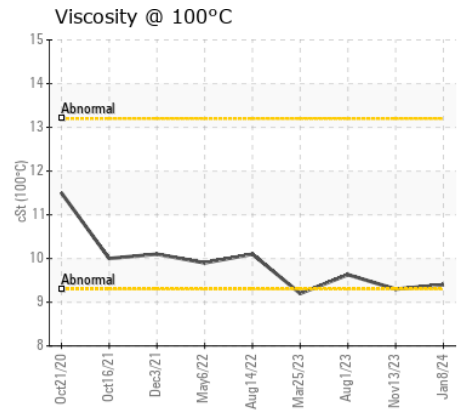
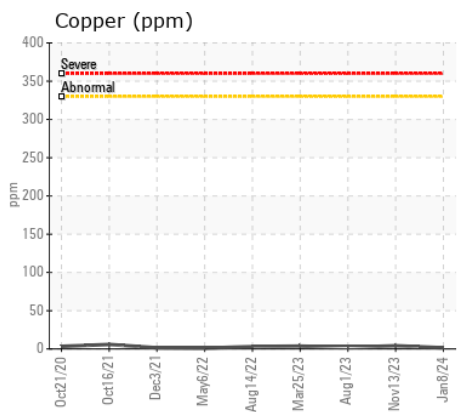
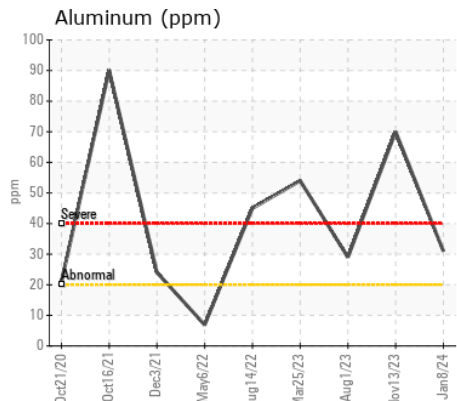
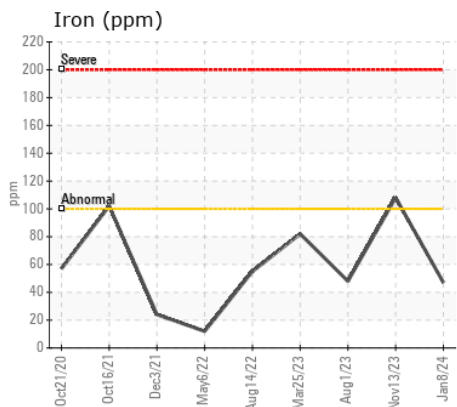
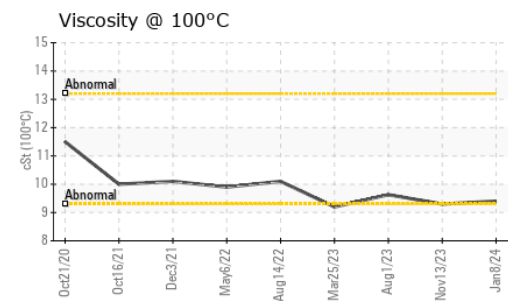
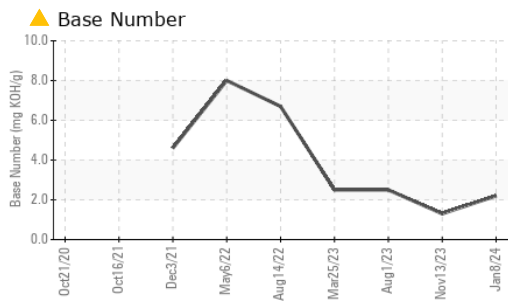
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	9	7	5
Potassium	ppm	ASTM D5185m	>20	<1	5	3
Fuel		WC Method	>5	<1.0	▲ 4.2	▲ 2.8
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.6	0.3
Nitration	Abs/cm	*ASTM D7624	>20	8.3	10.6	8.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	34.1	39.5	36.0
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	>0.2	NEG	NEG	NEG

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		4	13	13
Boron	ppm	ASTM D5185m		81	72	82
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		73	90	90
Manganese	ppm	ASTM D5185m		<1	2	1
Magnesium	ppm	ASTM D5185m		444	9	23
Calcium	ppm	ASTM D5185m		1122	1718	1855
Phosphorus	ppm	ASTM D5185m		692	675	718
Zinc	ppm	ASTM D5185m		804	836	862
Sulfur	ppm	ASTM D5185m		2036	2045	2544
Oxidation	Abs/.1mm	*ASTM D7414	>25	40.6	47.0	42.5
Base Number (BN)	mg KOH/g	ASTM D2896		▲ 2.2	▲ 1.3	2.5
Visc @ 100°C	cSt	ASTM D445		9.4	9.3	9.63



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : VPA059537 **Received** : 16 Jan 2024
Lab Number : 06060650 **Diagnosed** : 17 Jan 2024
Unique Number : 10832032 **Diagnostician** : Jonathan Hester
Test Package : MOB 1 (Additional Tests: TBN)

Helmuts Marine Service
 619 Canal Street
 SAN RAFAEL, CA
 US 94901-3545
 Contact: NADINE URUIOLI
 SERVICE@HELMUTSMARINE.COM
 T: x:
 F: x:

Certificate L2367
 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)