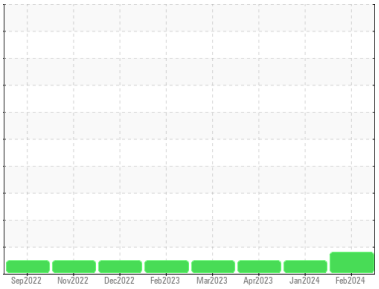
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
Liberty 1
Component
Natural Gas Engine
Fluid
PETRO CANADA SENTRON LD 3000 (--- GAL)

DIAGNOSIS

▲ Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor.

▲ Wear
An increase in the lead level is noted. All other component wear rates are normal.

Contamination
Tests indicate that there is no fuel present in the oil. There is no indication of any contamination in the oil.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0111968**	PCA0103417	PCA0091280
Sample Date		Client Info		**02 Feb 2024**	02 Jan 2024	03 Apr 2023
Machine Age	hrs	Client Info		**69528**	69211	67974
Oil Age	hrs	Client Info		**11318**	67974	1663
Oil Changed		Client Info		**N/A**	N/A	Not Changd
Sample Status				**ATTENTION**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.1	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	**4**	2	1
Chromium	ppm	ASTM D5185m	>4	**0**	<1	<1
Nickel	ppm	ASTM D5185m	>2	**<1**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>9	**1**	2	0
Lead	ppm	ASTM D5185m	>30	▲ **15**	0	0
Copper	ppm	ASTM D5185m	>35	**2**	<1	0
Tin	ppm	ASTM D5185m	>4	**<1**	0	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	5	**0**	<1	0
Barium	ppm	ASTM D5185m	1	**0**	0	0
Molybdenum	ppm	ASTM D5185m	2	**<1**	1	2
Manganese	ppm	ASTM D5185m	1	**<1**	0	0
Magnesium	ppm	ASTM D5185m	5	**16**	10	10
Calcium	ppm	ASTM D5185m	1220	**1406**	1264	1148
Phosphorus	ppm	ASTM D5185m	298	**327**	316	264
Zinc	ppm	ASTM D5185m	350	**396**	328	329
Sulfur	ppm	ASTM D5185m	1995	**2329**	2444	2295

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	**1**	2	4
Sodium	ppm	ASTM D5185m		**2**	0	<1
Potassium	ppm	ASTM D5185m	>20	**2**	2	<1
Fuel	%	ASTM D3524	>4.0	**0.2**	0.0	0.3

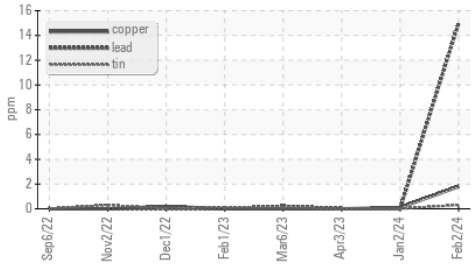
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0	0
Nitration	Abs/cm	*ASTM D7624	>20	**5.7**	3.5	3.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.0**	13.9	13.5

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**14.4**	7.6	7.2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.86	**1.44**	0.268	0.32
Base Number (BN)	mg KOH/g	ASTM D2896	3.9	**2.52**	3.17	4.81

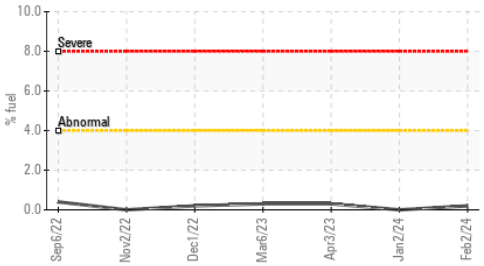
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

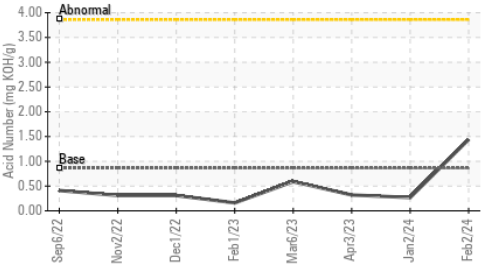
Non-ferrous Metals



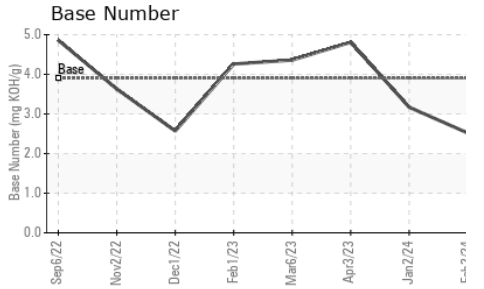
Fuel Dilution



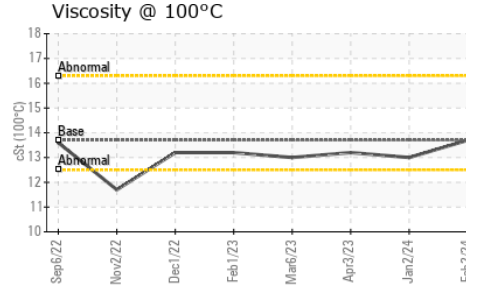
Acid Number



Base Number



Viscosity @ 100°C

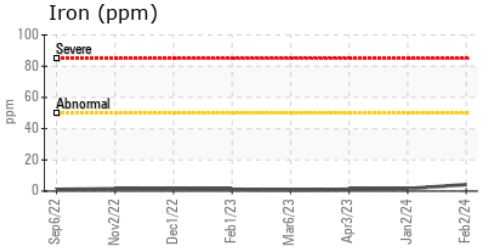


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

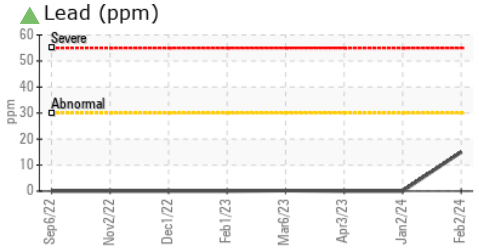
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.7	**13.7**	13.0	13.2

GRAPHS

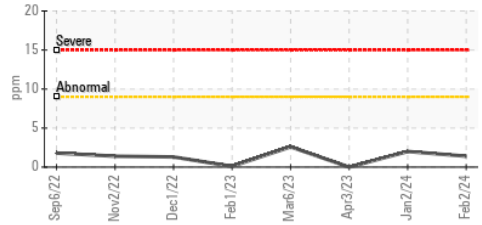
Iron (ppm)



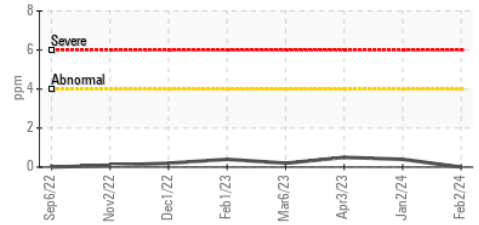
Lead (ppm)



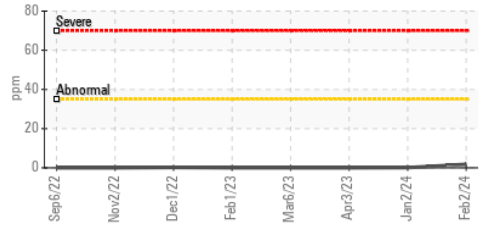
Aluminum (ppm)



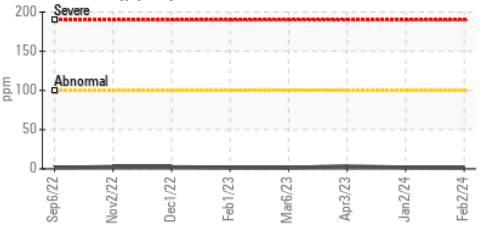
Chromium (ppm)



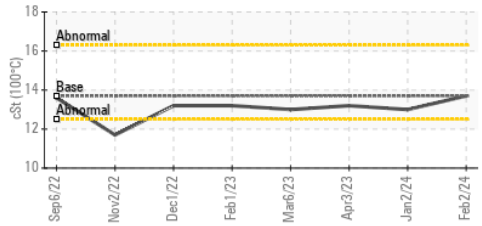
Copper (ppm)



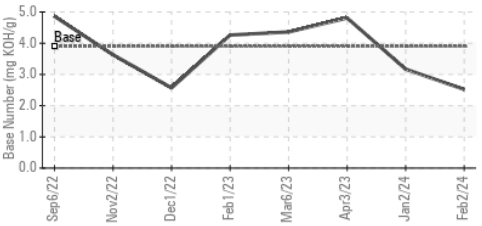
Silicon (ppm)



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0111968
Lab Number : 06092446
Unique Number : 10885299
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

Received : 16 Feb 2024
Tested : 20 Feb 2024
Diagnosed : 20 Feb 2024 - Sean Felton

Certificate L2367

ENERVEST OPERATING - LIBERTY
318 SINGLETON ROAD
NORA, VA
US 24272
Contact: Service Manager
T:
F:

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)