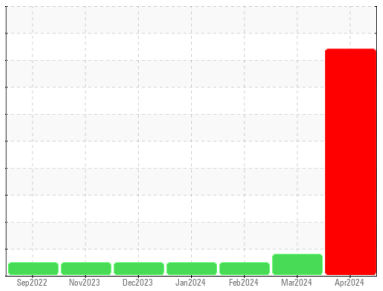
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
Smith Ridge 1
Component
Natural Gas Engine
Fluid
CITGO PACEMAKER GAS ENGIN 1700 SERIES 40W (--- GAL)

DIAGNOSIS

▲ Recommendation
We recommend that you drain the oil and perform a filter service on this component if not already done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

▲ Wear
Bearing and/or bushing wear is indicated.

Contamination
Fuel content negligible. There is no indication of any contamination in the oil.

▲ Fluid Condition
The BN level is low. The AN level is at the top-end of the recommended limit. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0117146**	PCA0117144	PCA0117139
Sample Date		Client Info		**01 Apr 2024**	05 Mar 2024	06 Feb 2024
Machine Age	hrs	Client Info		**185876**	185258	184598
Oil Age	hrs	Client Info		**185876**	185258	184598
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**SEVERE**	ABNORMAL	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	**10**	5	5
Chromium	ppm	ASTM D5185m	>4	**1**	<1	<1
Nickel	ppm	ASTM D5185m	>2	**<1**	<1	<1
Titanium	ppm	ASTM D5185m		**2**	1	1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>9	**2**	2	2
Lead	ppm	ASTM D5185m	>30	▲ **94**	▲ 39	5
Copper	ppm	ASTM D5185m	>35	**16**	11	12
Tin	ppm	ASTM D5185m	>4	**2**	1	<1
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	0
Barium	ppm	ASTM D5185m		**<1**	0	0
Molybdenum	ppm	ASTM D5185m		**3**	1	<1
Manganese	ppm	ASTM D5185m		**1**	<1	<1
Magnesium	ppm	ASTM D5185m		**19**	22	21
Calcium	ppm	ASTM D5185m		**1620**	1517	1404
Phosphorus	ppm	ASTM D5185m		**351**	318	314
Zinc	ppm	ASTM D5185m		**430**	419	382
Sulfur	ppm	ASTM D5185m		**2916**	2489	2469

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	**3**	2	2
Sodium	ppm	ASTM D5185m		**8**	10	10
Potassium	ppm	ASTM D5185m	>20	**3**	2	2
Fuel	%	ASTM D3524	>4.0	**0.3**	0.3	0.3

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	0	0
Nitration	Abs/cm	*ASTM D7624	>20	**8.6**	7.0	5.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	**22.5**	20.3	18.0

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**22.8**	18.7	14.2
Acid Number (AN)	mg KOH/g	ASTM D8045		▲ **2.60**	1.90	1.17
Base Number (BN)	mg KOH/g	ASTM D2896		▲ **2.36**	3.12	3.05

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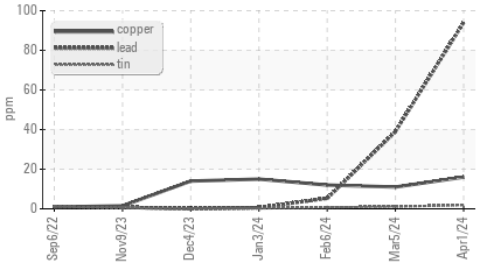
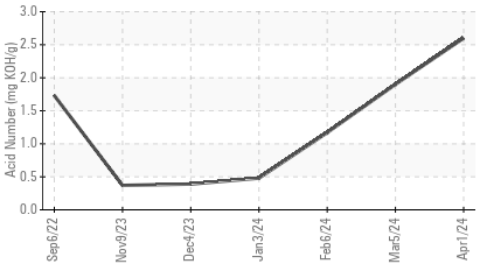
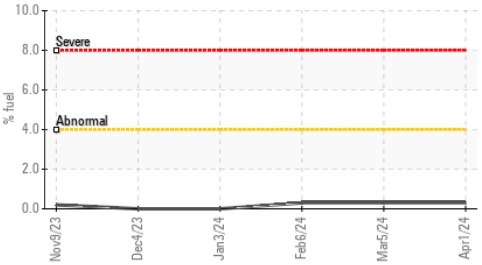
Non-ferrous Metals



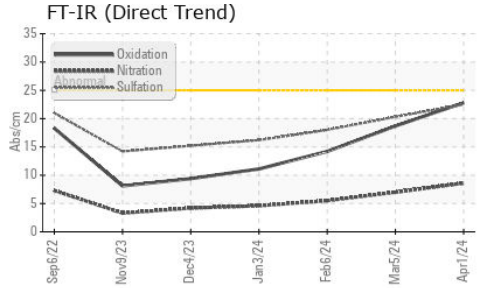
Acid Number



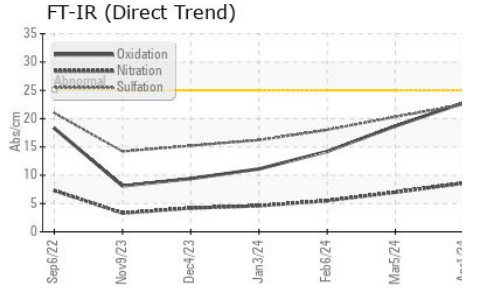
Fuel Dilution



FT-IR (Direct Trend)



FT-IR (Direct Trend)

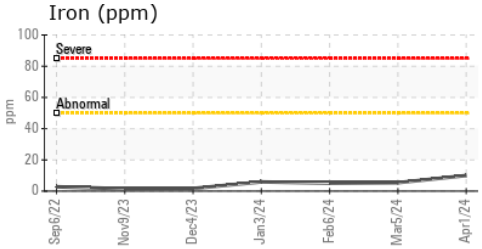


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**LIGHT**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

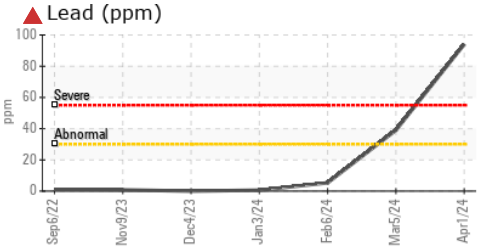
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**14.8**	14.2	13.8

GRAPHS

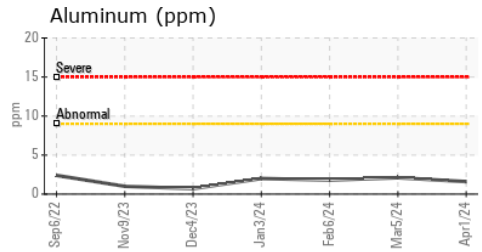
Iron (ppm)



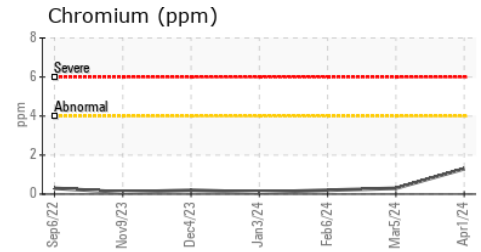
Lead (ppm)



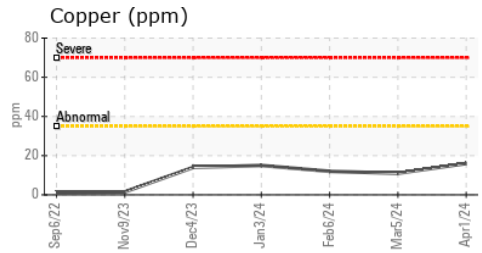
Aluminum (ppm)



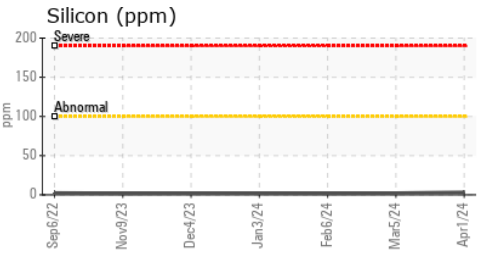
Chromium (ppm)



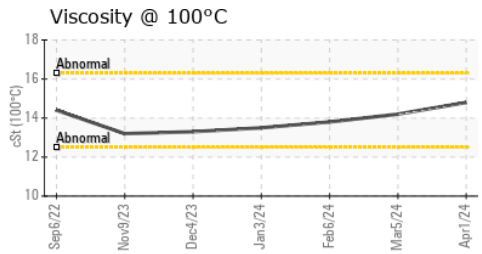
Copper (ppm)



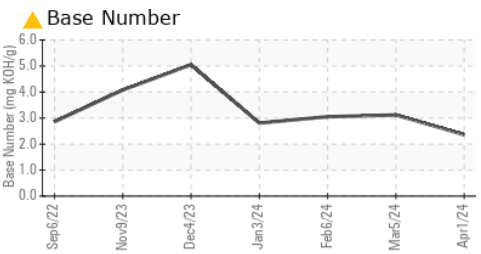
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0117146
Lab Number : 06146067
Unique Number : 10976145
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

Received : 11 Apr 2024
Tested : 16 Apr 2024
Diagnosed : 16 Apr 2024 - Jonathan Hester

ENERVEST OPERATING - SMITH RIDGE
2305 SMITH RIDGE
MCCLURE, VA
US 24269
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)

Report Id: ENEMCCSR [WUSCAR] 06146067 (Generated: 04/16/2024 09:01:14) Rev: 1

Submitted By: Adam Kimberlin