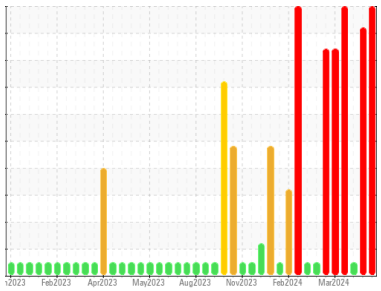
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
WVTM03BE
Component
Biogas Engine
Fluid
CHEVRON HDAX 9500 GAS ENGINE OIL 40 (--- 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
The iron level is severe. The tin level is abnormal.

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

▲ Fluid Condition
The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0895539**	WC0895535	WC0895563
Sample Date		Client Info		**19 Apr 2024**	11 Apr 2024	02 Apr 2024
Machine Age	hrs	Client Info		**34909**	34719	34503
Oil Age	hrs	Client Info		**590**	400	184
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**SEVERE**	SEVERE	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	**<1.0**	<1.0	<1.0
Water		WC Method	>.11	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>15	▲ **33**	▲ 22	14
Chromium	ppm	ASTM D5185m	>4	**<1**	<1	0
Nickel	ppm	ASTM D5185m		**0**	<1	0
Titanium	ppm	ASTM D5185m		**0**	0	<1
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>6	**2**	2	2
Lead	ppm	ASTM D5185m	>9	**0**	0	0
Copper	ppm	ASTM D5185m	>6	**0**	2	1
Tin	ppm	ASTM D5185m	>4	▲ **4**	1	<1
Vanadium	ppm	ASTM D5185m		**0**	<1	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**<1**	0	0
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**<1**	1	1
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**7**	4	5
Calcium	ppm	ASTM D5185m		**1648**	1642	1672
Phosphorus	ppm	ASTM D5185m		**257**	227	229
Zinc	ppm	ASTM D5185m		**306**	253	294
Sulfur	ppm	ASTM D5185m		**4869**	3830	3599

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>181	**171**	128	79
Sodium	ppm	ASTM D5185m	>21	**3**	3	2
Potassium	ppm	ASTM D5185m	>20	**<1**	0	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0	0
Nitration	Abs/cm	*ASTM D7624		**4.8**	5.0	4.9
Sulfation	Abs/.1mm	*ASTM D7415		**26.0**	23.6	20.7

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**11.8**	10.7	9.3
Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	**2.48**	1.76	1.04
Base Number (BN)	mg KOH/g	ASTM D2896	5.4	▲ **0.76**	▲ 1.45	2.40

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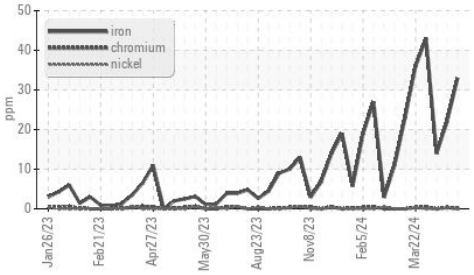
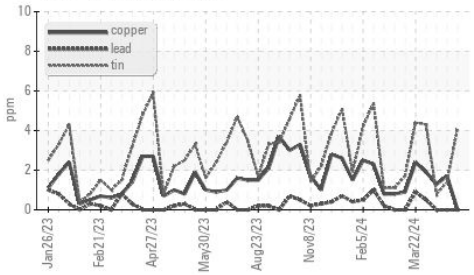
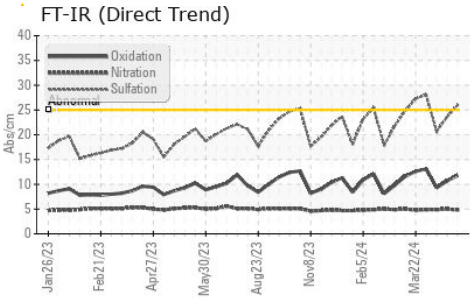
Ferrous Alloys



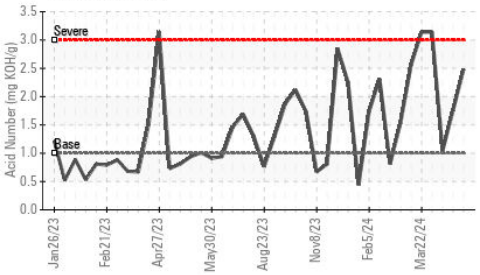
Non-ferrous Metals



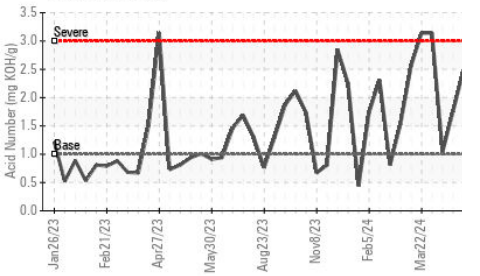
FT-IR (Direct Trend)



Acid Number



Acid Number

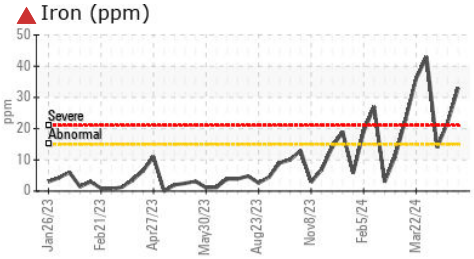


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>.11	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

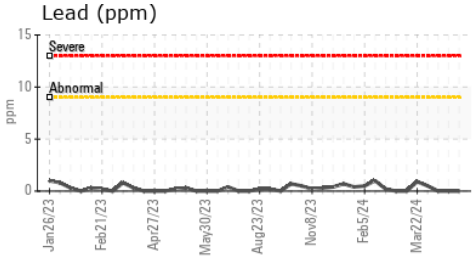
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.4	**13.4**	13.3	13.3

GRAPHS

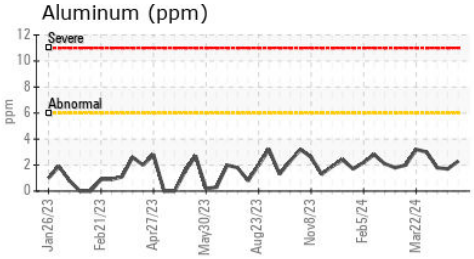
Iron (ppm)



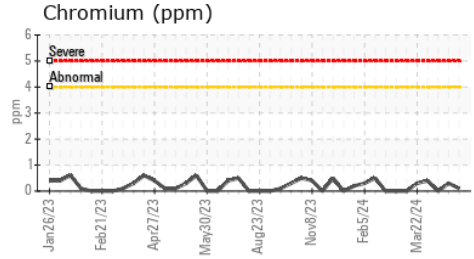
Lead (ppm)



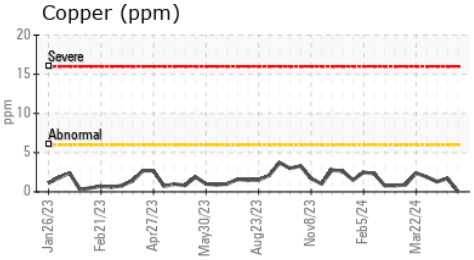
Aluminum (ppm)



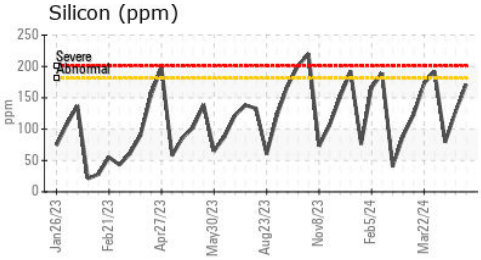
Chromium (ppm)



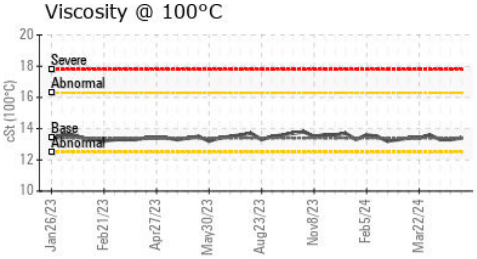
Copper (ppm)



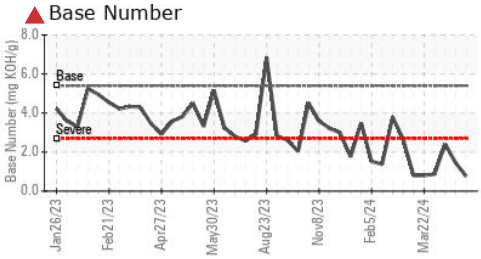
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0895539
Lab Number : 06157839
Unique Number : 10993262
Test Package : MOB 2

Received : 23 Apr 2024
Tested : 24 Apr 2024
Diagnosed : 25 Apr 2024 - Don Baldridge

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)

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