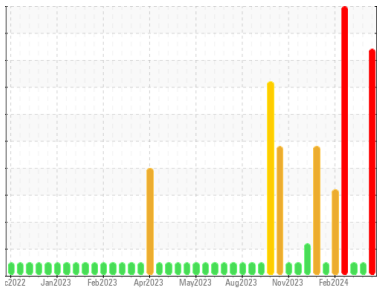
OIL ANALYSIS REPORT

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.

Contamination

There is no indication of any contamination in the oil.

▲ Fluid Condition

The AN level is above the recommended limit. The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0895526**	WC0895548	WC0785397
Sample Date		Client Info		**18 Mar 2024**	05 Mar 2024	21 Feb 2024
Machine Age	hrs	Client Info		**34081**	33859	33548
Oil Age	hrs	Client Info		**713**	491	180
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**SEVERE**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.1	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>15	▲ **23**	11	3
Chromium	ppm	ASTM D5185m	>4	**0**	0	0
Nickel	ppm	ASTM D5185m	>2	**0**	0	<1
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>5	**0**	0	0
Aluminum	ppm	ASTM D5185m	>6	**2**	2	2
Lead	ppm	ASTM D5185m	>9	**0**	0	<1
Copper	ppm	ASTM D5185m	>14	**<1**	<1	<1
Tin	ppm	ASTM D5185m	>4	**2**	1	1
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		**<1**	1	2
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**1**	2	<1
Manganese	ppm	ASTM D5185m		**0**	0	<1
Magnesium	ppm	ASTM D5185m		**4**	4	8
Calcium	ppm	ASTM D5185m		**1777**	1712	1580
Phosphorus	ppm	ASTM D5185m		**266**	261	251
Zinc	ppm	ASTM D5185m		**322**	297	306
Sulfur	ppm	ASTM D5185m		**4899**	3634	2468

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>181	**123**	89	40
Sodium	ppm	ASTM D5185m		**4**	4	3
Potassium	ppm	ASTM D5185m	>20	**0**	0	<1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0	0
Nitration	Abs/cm	*ASTM D7624	>20	**5.0**	4.9	5.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	**24.8**	21.7	17.9

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**11.6**	9.8	8.1
Acid Number (AN)	mg KOH/g	ASTM D8045	1.1	▲ **2.56**	1.54	0.81
Base Number (BN)	mg KOH/g	ASTM D2896	5.4	▲ **0.79**	2.67	3.80

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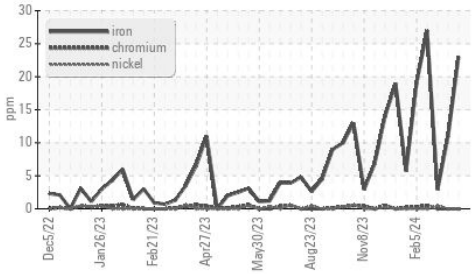
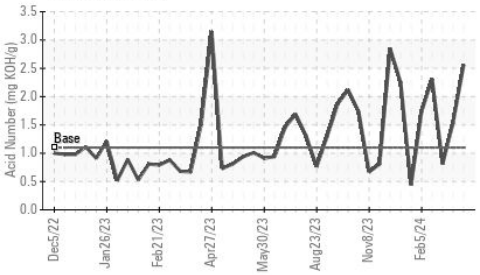
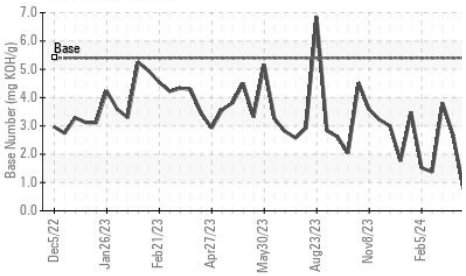
Ferrous Alloys



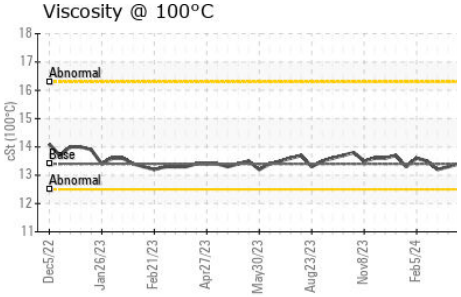
Acid Number



Base Number



Viscosity @ 100°C

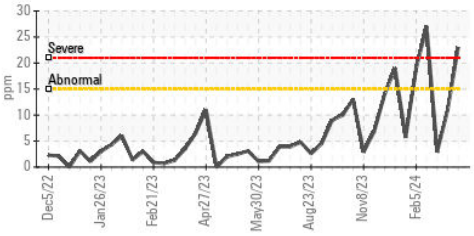


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

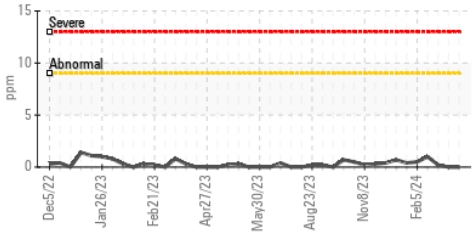
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.4	**13.4**	13.3	13.2

GRAPHS

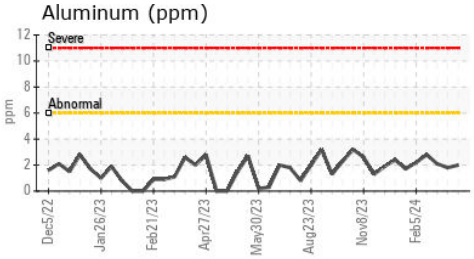
Iron (ppm)



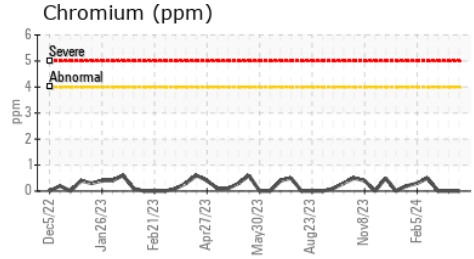
Lead (ppm)



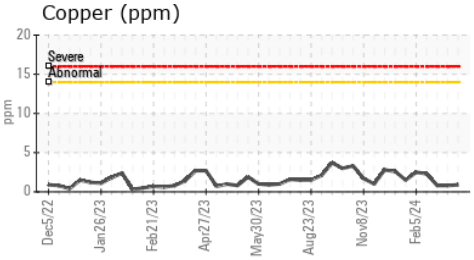
Aluminum (ppm)



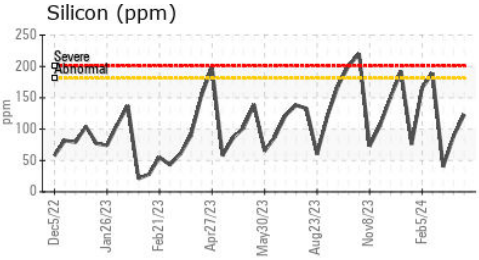
Chromium (ppm)



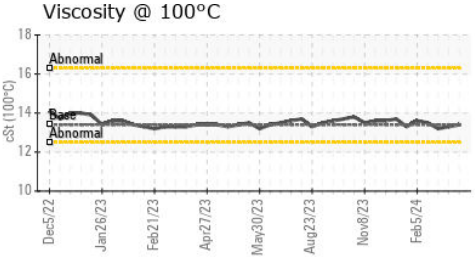
Copper (ppm)



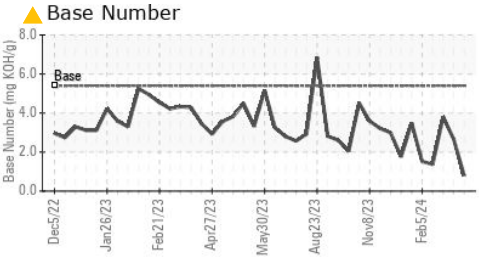
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0895526
Lab Number : 06123877
Unique Number : 10938028
Test Package : MOB 2

Received : 20 Mar 2024
Tested : 21 Mar 2024
Diagnosed : 22 Mar 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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