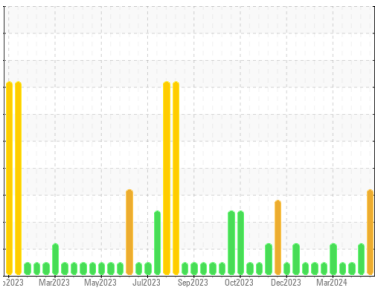
OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Machine Id
Grand Blanc CAT 5 GBLM05BE
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 recommend an early resample to monitor this condition. (Customer Sample Comment: 800hr oil sample)

Wear
All component wear rates are normal.

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

▲ Fluid Condition
The BN level is low. The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0905670**	WC0905696	WC0905746
Sample Date		Client Info		**18 Apr 2024**	10 Apr 2024	03 Apr 2024
Machine Age	hrs	Client Info		**60027**	59838	59646
Oil Age	hrs	Client Info		**782**	0	0
Oil Changed		Client Info		**Not Changd**	N/A	N/A
Sample Status				**SEVERE**	ABNORMAL	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	**4**	4	2
Chromium	ppm	ASTM D5185m	>4	**<1**	<1	0
Nickel	ppm	ASTM D5185m		**0**	1	0
Titanium	ppm	ASTM D5185m		**0**	<1	<1
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>6	**2**	2	2
Lead	ppm	ASTM D5185m	>9	**3**	4	0
Copper	ppm	ASTM D5185m	>6	**3**	2	<1
Tin	ppm	ASTM D5185m	>4	**2**	3	<1
Vanadium	ppm	ASTM D5185m		**0**	<1	<1
Cadmium	ppm	ASTM D5185m		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**5**	5	6
Barium	ppm	ASTM D5185m		**1**	0	0
Molybdenum	ppm	ASTM D5185m		**3**	4	2
Manganese	ppm	ASTM D5185m		**1**	1	0
Magnesium	ppm	ASTM D5185m		**15**	11	10
Calcium	ppm	ASTM D5185m		**2041**	1912	1846
Phosphorus	ppm	ASTM D5185m		**306**	309	250
Zinc	ppm	ASTM D5185m		**388**	365	343
Sulfur	ppm	ASTM D5185m		**3894**	3553	3328

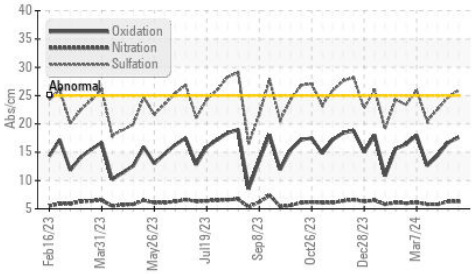
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>181	**161**	130	99
Sodium	ppm	ASTM D5185m	>21	**2**	0	<1
Potassium	ppm	ASTM D5185m	>20	**0**	3	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624		**6.3**	6.3	5.8
Sulfation	Abs/.1mm	*ASTM D7415		**25.9**	24.7	22.6

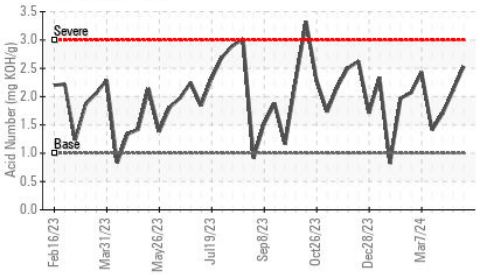
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**17.6**	16.7	14.4
Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	**2.53**	▲ 2.11	1.70
Base Number (BN)	mg KOH/g	ASTM D2896	5.4	▲ **2.19**	2.36	2.69

OIL ANALYSIS REPORT

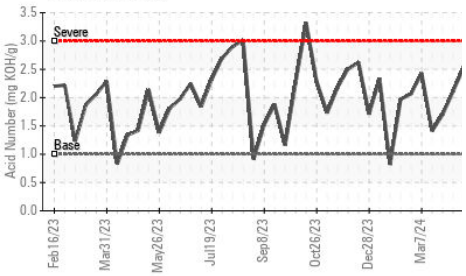
FT-IR (Direct Trend)



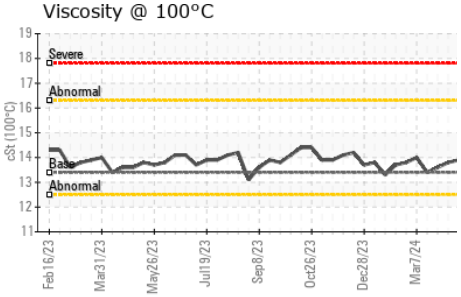
Acid Number



Acid Number



Viscosity @ 100°C

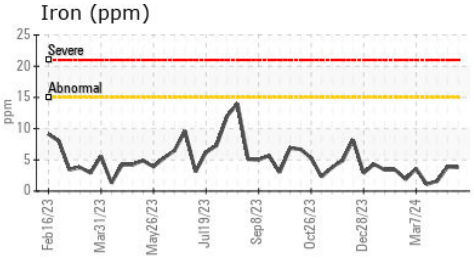


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**LIGHT**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

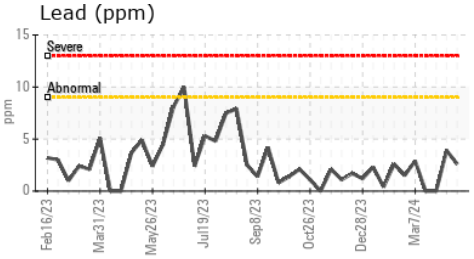
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.4	**13.9**	13.8	13.6

GRAPHS

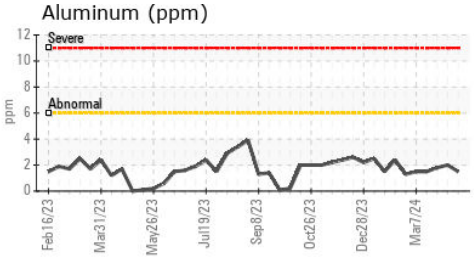
Iron (ppm)



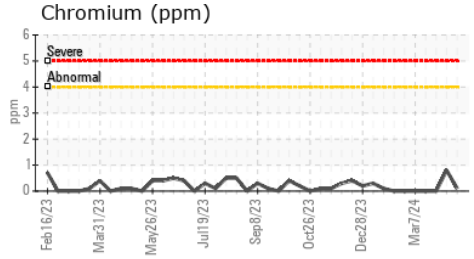
Lead (ppm)



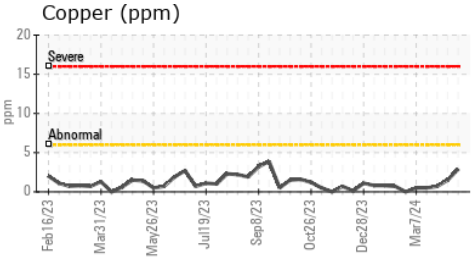
Aluminum (ppm)



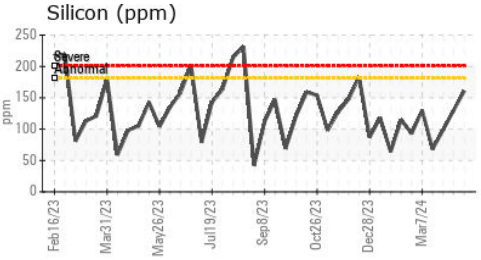
Chromium (ppm)



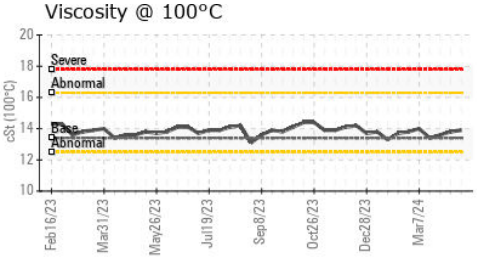
Copper (ppm)



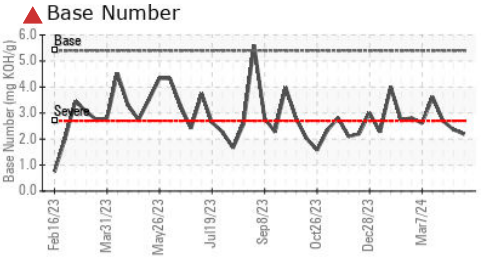
Silicon (ppm)



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0905670
Lab Number : 06156192
Unique Number : 10991615
Test Package : MOB 2

Received : 22 Apr 2024
Tested : 23 Apr 2024
Diagnosed : 24 Apr 2024 - Sean Felton

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)

EDL NA Recips-Grand Blanc
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Grand Blanc, MI
US 48439
Contact: Tony Saint Marie
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Report Id: EDLGRA [WUSCAR] 06156192 (Generated: 04/24/2024 14:10:57) Rev: 1

Submitted By: DARREL HILTZ