

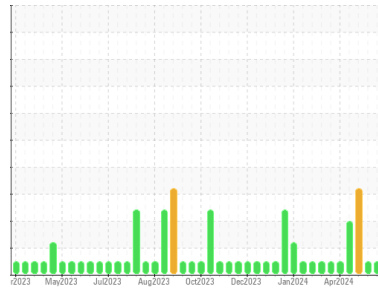


OIL ANALYSIS REPORT



Machine Id
Grand Blanc CAT 7 GBLM07BE
 Component
Biogas Engine
 Fluid
CHEVRON HDAX 9500 GAS ENGINE OIL 40 (--- GAL)

Sample Rating Trend



NORMAL



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: 400hr Oil Sample)

Wear

All component wear rates are normal.

Contamination

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		WC0905717	WC0905703	WC0905673
Sample Date	Client Info		13 May 2024	03 May 2024	18 Apr 2024
Machine Age	hrs	Client Info	130707	130560	130136
Oil Age	hrs	Client Info	409	218	808
Oil Changed	Client Info		Not Changed	Changed	Not Changed
Sample Status			NORMAL	NORMAL	SEVERE

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >14	1	2	3
Chromium	ppm	ASTM D5185m >3	0	<1	<1
Nickel	ppm	ASTM D5185m	0	0	0
Titanium	ppm	ASTM D5185m	0	<1	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >5	1	2	2
Lead	ppm	ASTM D5185m >8	0	<1	<1
Copper	ppm	ASTM D5185m >5	<1	<1	4
Tin	ppm	ASTM D5185m >3	1	<1	2
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	27	<1	<1
Barium	ppm	ASTM D5185m	0	0	1
Molybdenum	ppm	ASTM D5185m	0	1	1
Manganese	ppm	ASTM D5185m	<1	<1	1
Magnesium	ppm	ASTM D5185m	9	7	10
Calcium	ppm	ASTM D5185m	1785	1688	1980
Phosphorus	ppm	ASTM D5185m	293	289	278
Zinc	ppm	ASTM D5185m	353	320	347
Sulfur	ppm	ASTM D5185m	3855	3279	3768

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >180	114	74	151
Sodium	ppm	ASTM D5185m >20	0	0	2
Potassium	ppm	ASTM D5185m >20	0	3	0

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0	0.1	0
Nitration	Abs/cm	*ASTM D7624	5.9	5.7	6.2
Sulfation	Abs/.1mm	*ASTM D7415	23.3	19.4	25.2

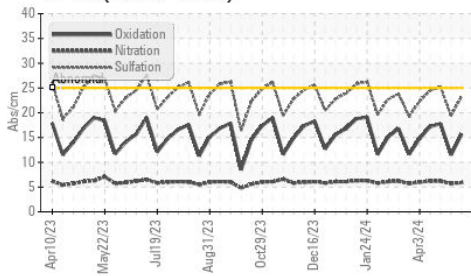
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	15.7	11.5	17.8
Acid Number (AN)	mg KOH/g	ASTM D8045 1.0	1.63	1.02	2.11
Base Number (BN)	mg KOH/g	ASTM D2896 5.4	2.88	3.44	▲ 1.58

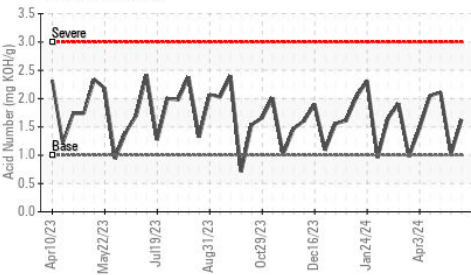


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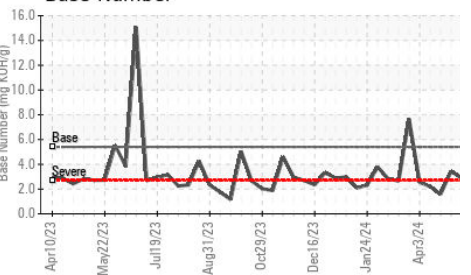
FT-IR (Direct Trend)



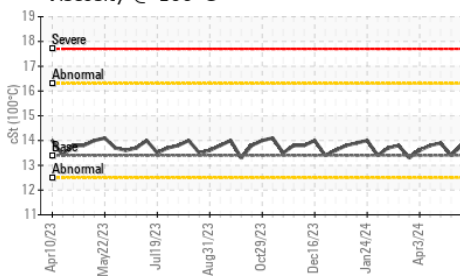
Acid Number



Base Number



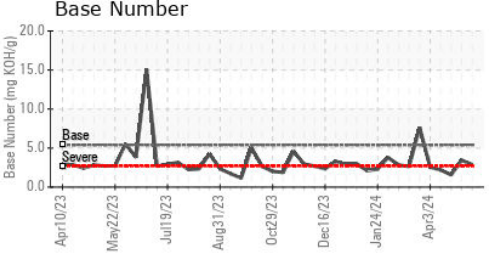
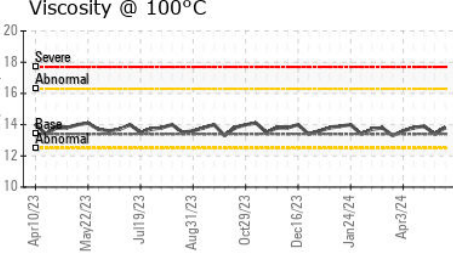
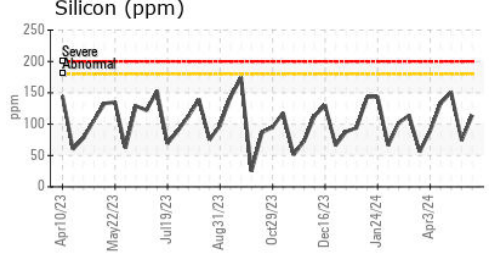
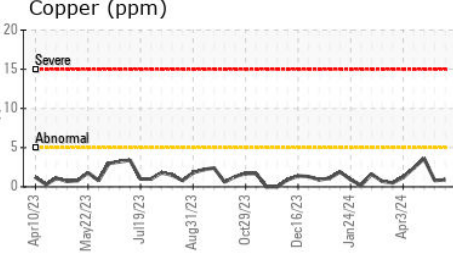
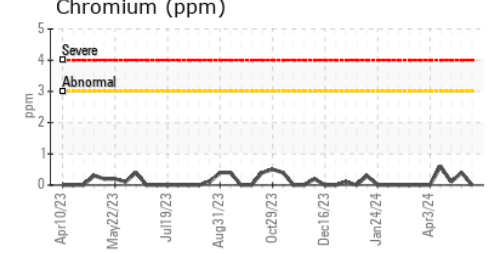
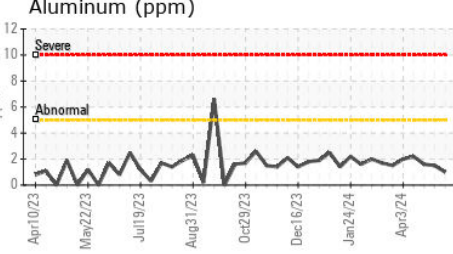
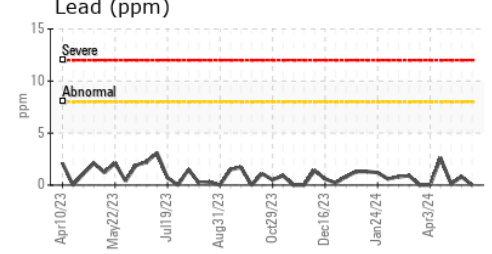
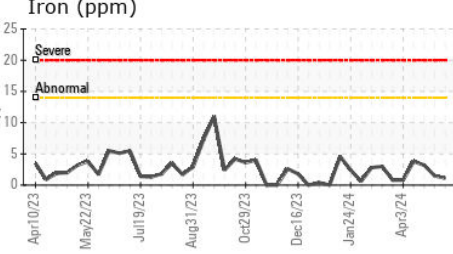
Viscosity @ 100°C



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	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	13.8	13.4

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0905717 **Received** : 15 May 2024
Lab Number : 06180324 **Tested** : 16 May 2024
Unique Number : 11031650 **Diagnosed** : 17 May 2024 - Sean Felton
Test Package : MOB 2

EDL NA Recips-Grand Blanc
 Grand Blanc Powerstation, 2361 West Grand Blanc Road
 Grand Blanc, MI
 US 48439
 Contact: Tony Saint Marie
 tony.saintmarie@edlenergy.com

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)