

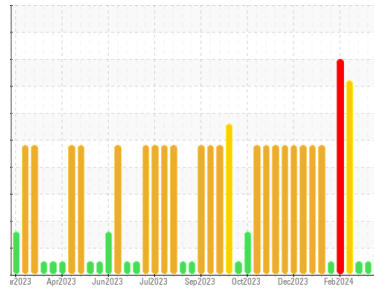


OIL ANALYSIS REPORT



Machine Id
DECM02BE (S/N 4EK00128)
 Component
Biogas Engine
 Fluid
CHEVRON HDAX 9500 GAS ENGINE OIL 40 (100 GAL)

Sample Rating Trend



WEAR



DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: Top Up Amount: 10 GAL)

Wear

The copper level is abnormal. All other 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 acceptable for the time in service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0732893	WC0732896	WC0732894
Sample Date	Client Info		19 Apr 2024	10 Apr 2024	03 Apr 2024
Machine Age	hrs	Client Info	60934	60721	60557
Oil Age	hrs	Client Info	60557	60557	58088
Oil Changed	Client Info		Oil Added	Oil Added	Changed
Sample Status			ABNORMAL	NORMAL	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	2	<1	1
Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Nickel	ppm	ASTM D5185m		0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>6	2	2	1
Lead	ppm	ASTM D5185m	>9	0	3	0
Copper	ppm	ASTM D5185m	>6	9	5	4
Tin	ppm	ASTM D5185m	>4	1	2	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		3	2	3
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		7	8	6
Manganese	ppm	ASTM D5185m		<1	<1	0
Magnesium	ppm	ASTM D5185m		16	19	6
Calcium	ppm	ASTM D5185m		1907	1942	1921
Phosphorus	ppm	ASTM D5185m		300	303	265
Zinc	ppm	ASTM D5185m		387	382	334
Sulfur	ppm	ASTM D5185m		3153	2696	2482

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>181	165	111	89
Sodium	ppm	ASTM D5185m	>21	7	5	5
Potassium	ppm	ASTM D5185m	>20	2	3	0

INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		0	0	0
Nitration	Abs/cm	*ASTM D7624		5.5	5.3	5.3
Sulfation	Abs/.1mm	*ASTM D7415		18.4	16.7	16.0

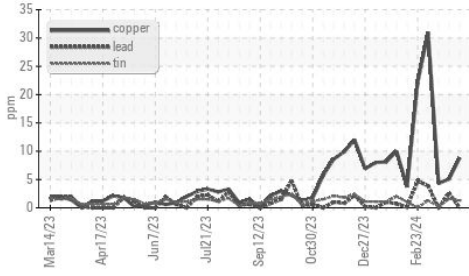
FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414		10.6	9.3	8.9
Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	0.95	0.70	0.70
Base Number (BN)	mg KOH/g	ASTM D2896	5.4	4.54	4.85	4.76

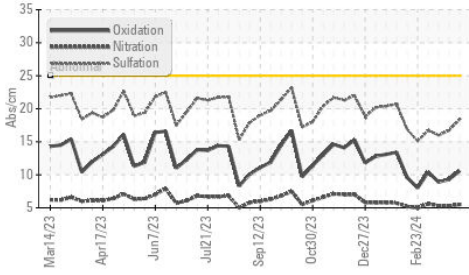


OIL ANALYSIS REPORT

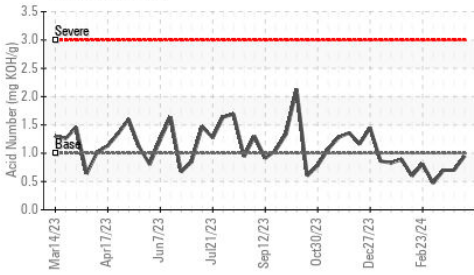
▲ Non-ferrous Metals



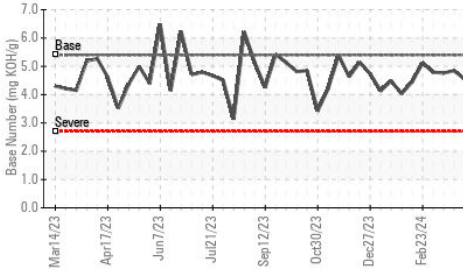
FT-IR (Direct Trend)



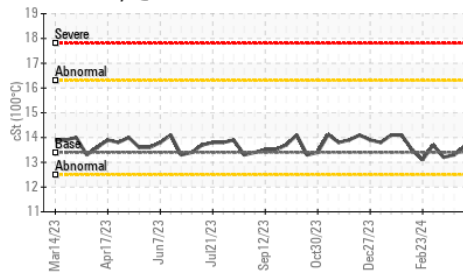
Acid Number



Base Number



Viscosity @ 100°C

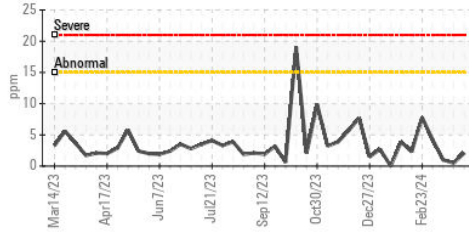


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

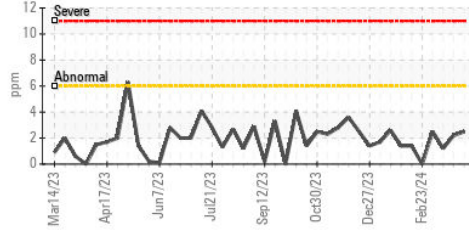
FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	13.4	13.6	13.3	13.2

GRAPHS

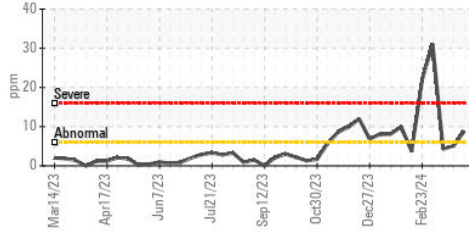
Iron (ppm)



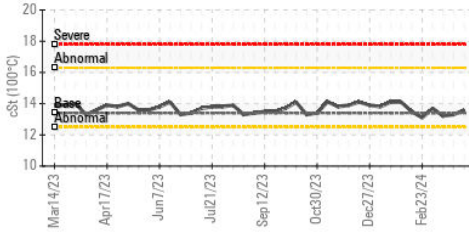
Aluminum (ppm)



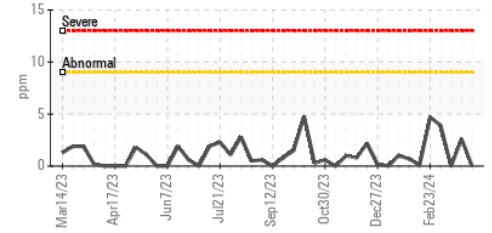
▲ Copper (ppm)



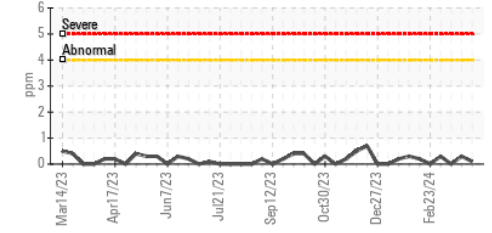
Viscosity @ 100°C



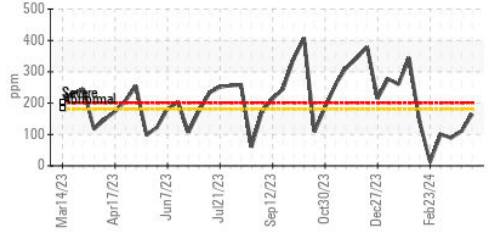
Lead (ppm)



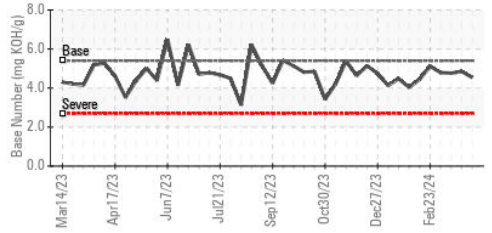
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0732893

Lab Number : 06157830

Unique Number : 10993253

Test Package : MOB 2

Received : 23 Apr 2024

Tested : 24 Apr 2024

Diagnosed : 25 Apr 2024 - Don Baldrige

EDL NA Recips-Decatur

620 LANDFILL DRIVE

TRINITY, AL

US 35673

Contact: JEFF SUMMERS

jeff.summers@energydevelopments.com

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)