

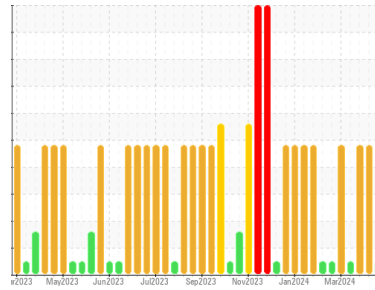


# OIL ANALYSIS REPORT



Machine Id  
**DECM01BE (S/N ZBA01290)**  
 Component  
**Biogas Engine**  
 Fluid  
**CHEVRON HDAX 9500 GAS ENGINE OIL 40 (100 GAL)**

Sample Rating Trend



**NORMAL**



## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: Top Up Amount: 20 GAL )

### 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		<b>WC0732840</b>	WC0732892	WC0732897
Sample Date	Client Info		<b>13 May 2024</b>	19 Apr 2024	10 Apr 2024
Machine Age	hrs	Client Info	<b>59170</b>	58720	58504
Oil Age	hrs	Client Info	<b>58345</b>	58345	58345
Oil Changed	Client Info		<b>Oil Added</b>	Oil Added	Oil Added
Sample Status			<b>NORMAL</b>	SEVERE	SEVERE

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water	WC Method	>.11	<b>NEG</b>	NEG	NEG
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >15	<b>1</b>	4	3
Chromium	ppm	ASTM D5185m >4	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	<b>0</b>	0	1
Titanium	ppm	ASTM D5185m	<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >6	<b>&lt;1</b>	2	2
Lead	ppm	ASTM D5185m >9	<b>0</b>	<1	2
Copper	ppm	ASTM D5185m >6	<b>&lt;1</b>	0	2
Tin	ppm	ASTM D5185m >4	<b>&lt;1</b>	2	2
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	<1
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	<1

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>6</b>	8	6
Barium	ppm	ASTM D5185m	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>8</b>	12	12
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	<b>31</b>	52	36
Calcium	ppm	ASTM D5185m	<b>1778</b>	1914	1938
Phosphorus	ppm	ASTM D5185m	<b>287</b>	320	332
Zinc	ppm	ASTM D5185m	<b>361</b>	412	398
Sulfur	ppm	ASTM D5185m	<b>2608</b>	3088	2889

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >181	<b>113</b>	▲ 234	▲ 202
Sodium	ppm	ASTM D5185m >21	<b>0</b>	2	1
Potassium	ppm	ASTM D5185m >20	<b>0</b>	2	4

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	<b>0</b>	0.1	0
Nitration	Abs/cm	*ASTM D7624	<b>5.5</b>	6.1	5.8
Sulfation	Abs/.1mm	*ASTM D7415	<b>17.4</b>	20.4	18.9

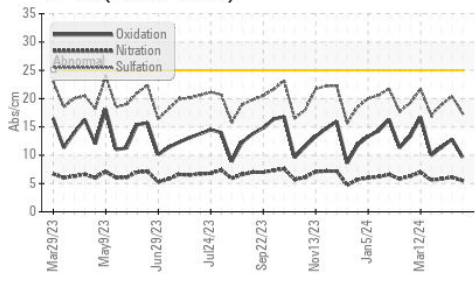
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	<b>9.6</b>	12.8	11.4
Acid Number (AN)	mg KOH/g	ASTM D8045 1.0	<b>0.73</b>	1.50	1.15
Base Number (BN)	mg KOH/g	ASTM D2896 5.4	<b>4.75</b>	4.16	4.34

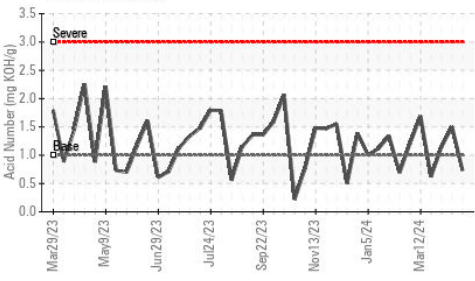


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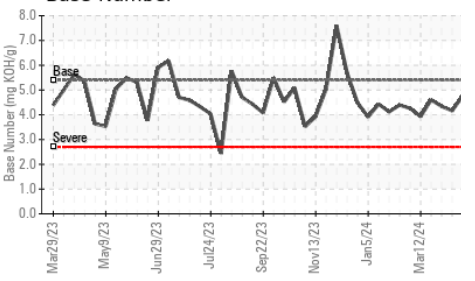
FT-IR (Direct Trend)



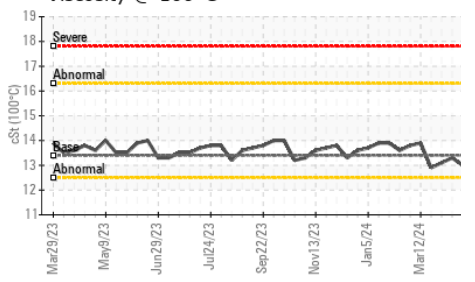
Acid Number



Base Number



Viscosity @ 100°C

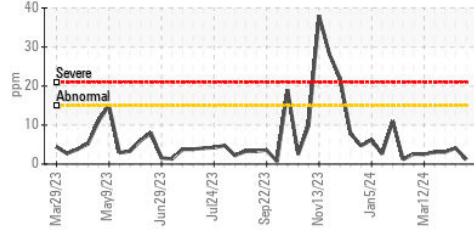


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

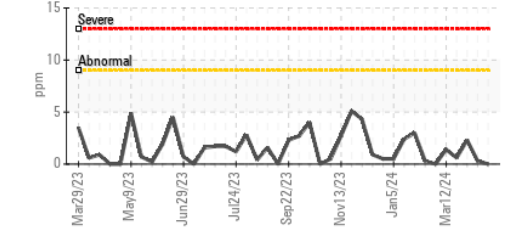
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.4	13.0	13.3

## GRAPHS

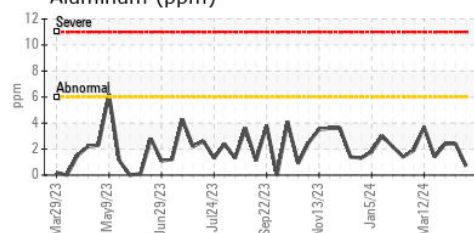
Iron (ppm)



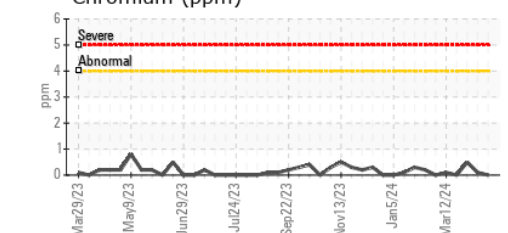
Lead (ppm)



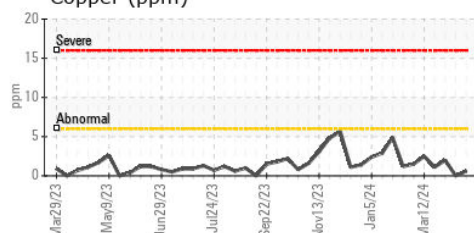
Aluminum (ppm)



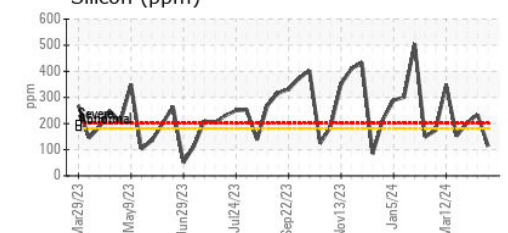
Chromium (ppm)



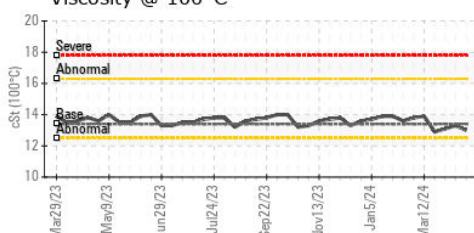
Copper (ppm)



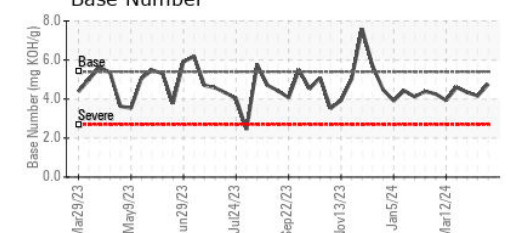
Silicon (ppm)



Viscosity @ 100°C



Base Number



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0732840      **Received** : 15 May 2024  
**Lab Number** : 06180328      **Tested** : 16 May 2024  
**Unique Number** : 11031654      **Diagnosed** : 17 May 2024 - Sean Felton  
**Test Package** : MOB 2

**EDL NA Recips-Decatur**  
 620 LANDFILL DRIVE  
 TRINITY, AL  
 US 35673  
 Contact: JEFF SUMMERS  
 jeff.summers@energydevelopments.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)