

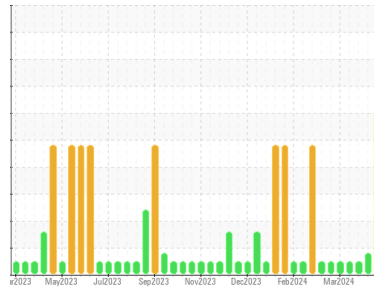


# OIL ANALYSIS REPORT



Machine Id  
**BRCM02BE (S/N GZJ00357)**  
 Component  
**Biogas Engine**  
 Fluid  
**CHEVRON HDAX 9500 GAS ENGINE OIL 40 (--- GAL)**

Sample Rating Trend



## DIAGNOSIS

### ▲ Recommendation

We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

### ▲ Wear

The tin level is severe.

### 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.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0760873</b>	WC0760870	WC0760866
Sample Date	Client Info		<b>19 Apr 2024</b>	12 Apr 2024	05 Apr 2024
Machine Age	hrs	Client Info	<b>74884</b>	74730	74609
Oil Age	hrs	Client Info	<b>399</b>	245	124
Oil Changed	Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Sample Status			<b>SEVERE</b>	ABNORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water	WC Method		<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 >14	<b>2</b>	3	0
Chromium	ppm	ASTM D5185m >3	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >5	<b>2</b>	2	1
Lead	ppm	ASTM D5185m >8	<b>&lt;1</b>	<1	0
Copper	ppm	ASTM D5185m >5	<b>0</b>	3	<1
Tin	ppm	ASTM D5185m >3	<b>▲ 5</b>	▲ 4	2
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>8</b>	8	7
Barium	ppm	ASTM D5185m	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>8</b>	9	8
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	1	<1
Magnesium	ppm	ASTM D5185m	<b>36</b>	36	34
Calcium	ppm	ASTM D5185m	<b>1800</b>	1886	1721
Phosphorus	ppm	ASTM D5185m	<b>315</b>	330	294
Zinc	ppm	ASTM D5185m	<b>379</b>	394	359
Sulfur	ppm	ASTM D5185m	<b>2192</b>	2283	1337

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >180	<b>177</b>	143	70
Sodium	ppm	ASTM D5185m >20	<b>1</b>	2	1
Potassium	ppm	ASTM D5185m >20	<b>&lt;1</b>	1	0

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	<b>0</b>	0	0
Nitration	Abs/cm	*ASTM D7624	<b>6.2</b>	6.0	5.1
Sulfation	Abs/.1mm	*ASTM D7415	<b>18.1</b>	17.1	16.2

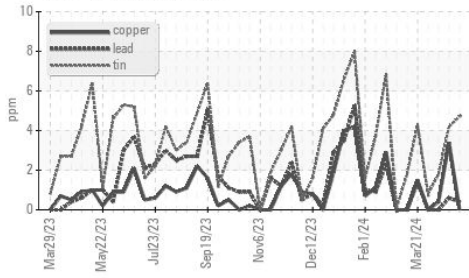
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	<b>11.3</b>	10.2	8.9
Acid Number (AN)	mg KOH/g	ASTM D8045 1.0	<b>0.95</b>	0.54	0.68
Base Number (BN)	mg KOH/g	ASTM D2896 5.4	<b>4.69</b>	4.79	4.86



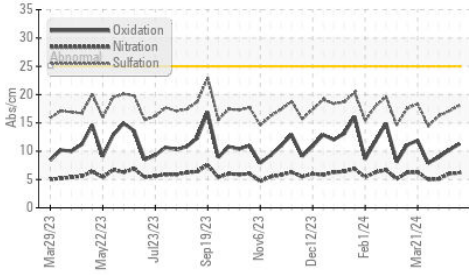
# OIL ANALYSIS REPORT

## Non-ferrous Metals



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

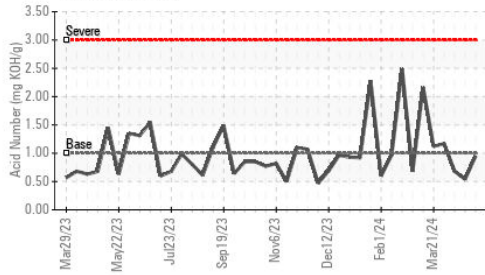
## FT-IR (Direct Trend)



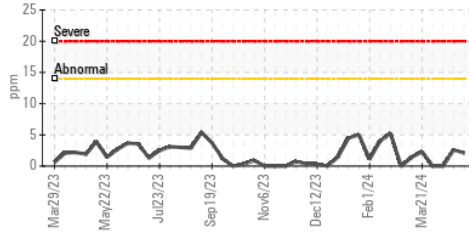
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.4	13.1	12.9

## GRAPHS

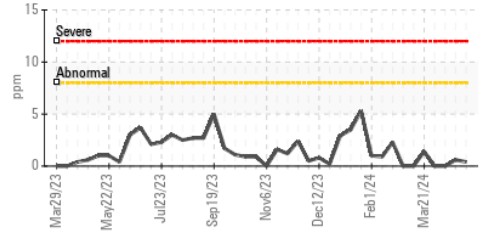
### Acid Number



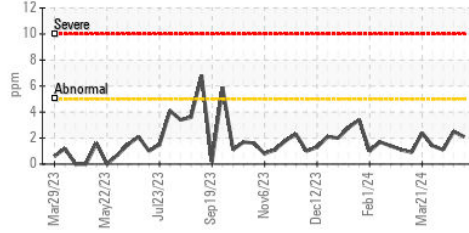
### Iron (ppm)



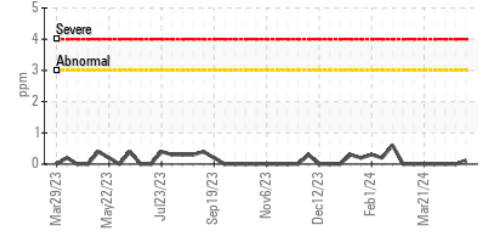
### Lead (ppm)



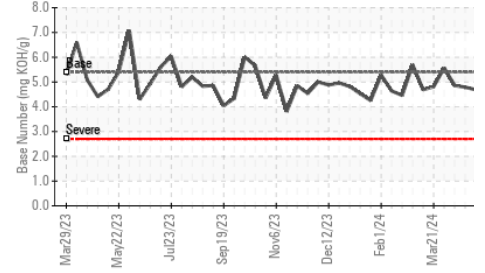
### Aluminum (ppm)



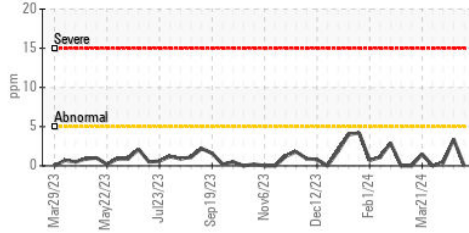
### Chromium (ppm)



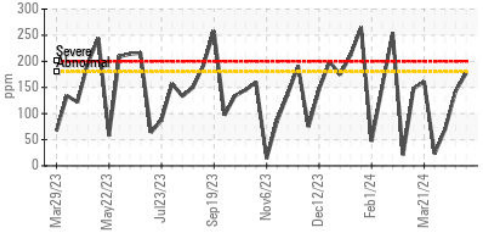
### Base Number



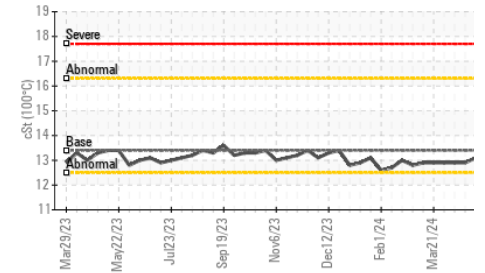
### Copper (ppm)



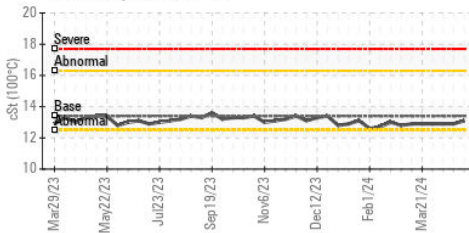
### Silicon (ppm)



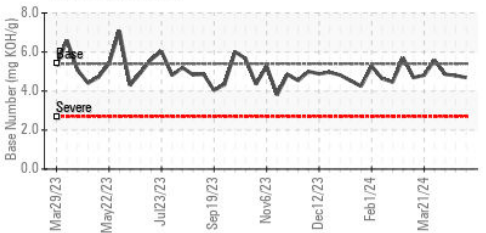
### Viscosity @ 100°C



### Viscosity @ 100°C



### Base Number



Certificate L2367

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

Sample No. : WC0760873

Lab Number : 06157840

Unique Number : 10993263

Test Package : MOB 2

Received : 23 Apr 2024

Tested : 24 Apr 2024

Diagnosed : 25 Apr 2024 - Don Baldrige

EDL NA Recips-Brown County

BROWN COUNTY POWER STATION, 9427 BEYERS RD

GEORGETOWN, OH

US 45121

Contact: MITCHELL BUTLER

Mitchell.Butler@edlenergy.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)