

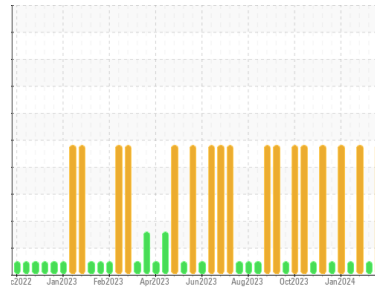


# OIL ANALYSIS REPORT



Machine Id  
**SAVM01BE (S/N GZJ00645)**  
 Component  
**Biogas Engine**  
 Fluid  
**CHEVRON HDAX 9500 GAS ENGINE OIL 40 (141 GAL)**

Sample Rating Trend



**DIRT**



## 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.

### Wear

All component wear rates are normal.

### ▲ Contamination

Elemental level of silicon (Si) above normal.

### 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>WC0788908</b>	WC0788905	WC0788902
Sample Date	Client Info		<b>02 Apr 2024</b>	14 Mar 2024	20 Feb 2024
Machine Age	hrs	Client Info	<b>1115390</b>	1115009	1114565
Oil Age	hrs	Client Info	<b>642</b>	261	511
Oil Changed	Client Info		<b>Not Chngd</b>	Not Chngd	Not Chngd
Sample Status			<b>SEVERE</b>	NORMAL	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		<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>	<1	6
Chromium	ppm	ASTM D5185m >3	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185m	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m >5	<b>2</b>	1	1
Lead	ppm	ASTM D5185m >8	<b>&lt;1</b>	2	4
Copper	ppm	ASTM D5185m >5	<b>4</b>	1	4
Tin	ppm	ASTM D5185m >3	<b>2</b>	1	3
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	<1

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>8</b>	8	3
Barium	ppm	ASTM D5185m	<b>0</b>	0	5
Molybdenum	ppm	ASTM D5185m	<b>9</b>	8	7
Manganese	ppm	ASTM D5185m	<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185m	<b>25</b>	21	14
Calcium	ppm	ASTM D5185m	<b>1983</b>	1844	1487
Phosphorus	ppm	ASTM D5185m	<b>272</b>	276	227
Zinc	ppm	ASTM D5185m	<b>375</b>	332	293
Sulfur	ppm	ASTM D5185m	<b>2054</b>	1965	1793

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >180	<b>▲ 224</b>	121	<b>▲ 215</b>
Sodium	ppm	ASTM D5185m >20	<b>2</b>	2	0
Potassium	ppm	ASTM D5185m >20	<b>&lt;1</b>	0	4

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	<b>0.1</b>	0	0.1
Nitration	Abs/cm	*ASTM D7624	<b>7.9</b>	6.4	6.9
Sulfation	Abs/.1mm	*ASTM D7415	<b>20.5</b>	17.4	19.5

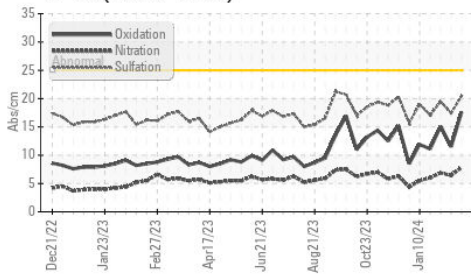
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	<b>17.6</b>	11.5	15.1
Acid Number (AN)	mg KOH/g	ASTM D8045 1.0	<b>1.39</b>	1.69	1.15
Base Number (BN)	mg KOH/g	ASTM D2896 5.4	<b>4.26</b>	4.64	4.27



# OIL ANALYSIS REPORT

FT-IR (Direct Trend)

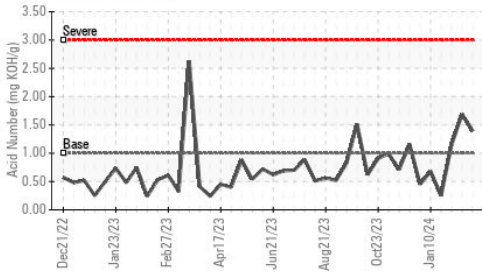


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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

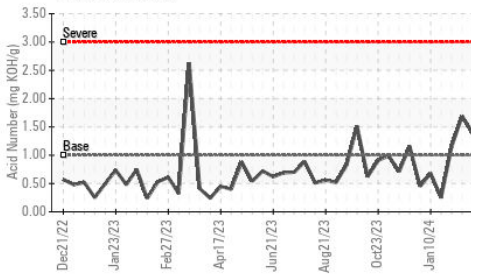
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.4	13.8	13.5

**GRAPHS**

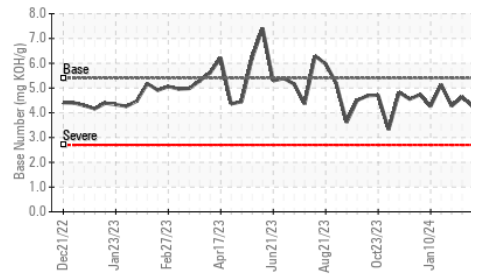
Acid Number



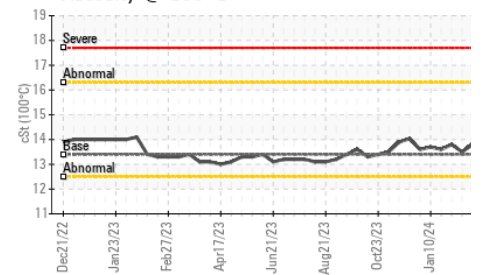
Acid Number



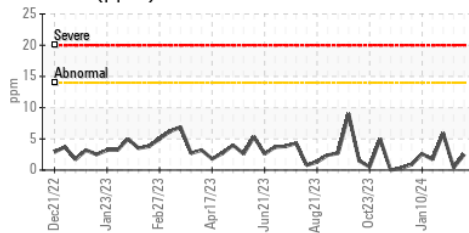
Base Number



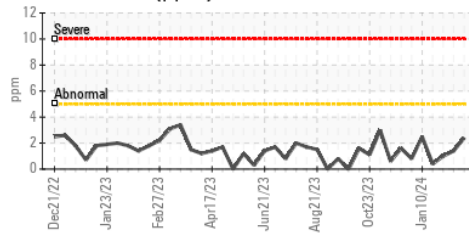
Viscosity @ 100°C



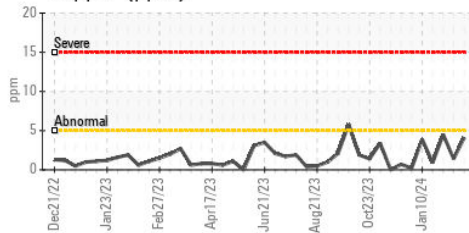
Iron (ppm)



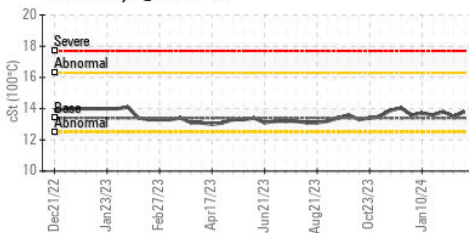
Aluminum (ppm)



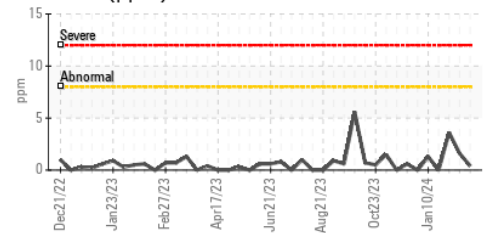
Copper (ppm)



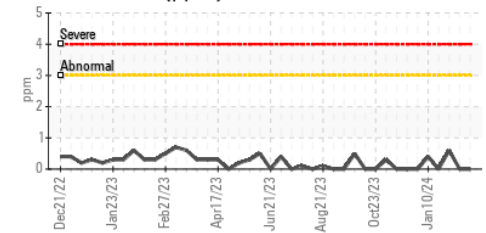
Viscosity @ 100°C



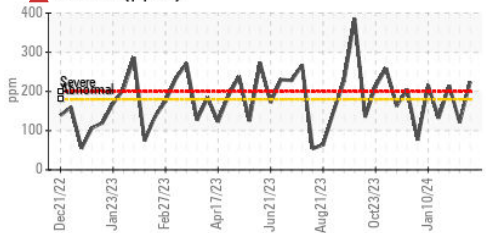
Lead (ppm)



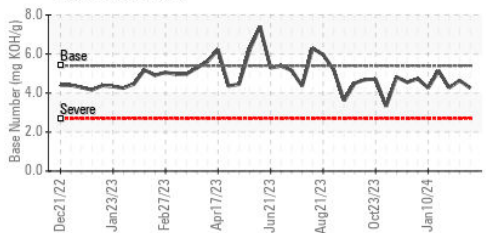
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

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

Sample No. : WC0788908

Lab Number : 06138733

Unique Number : 10963541

Test Package : MOB 2

Received : 04 Apr 2024

Tested : 05 Apr 2024

Diagnosed : 06 Apr 2024 - Don Baldrige

EDL NA Recips-Sand Valley

SAND VALLEY POWER STATION, 3345 COUNTY ROAD 209

COLLINSVILLE, AL

US 35961

Contact: BRANDON PEYTON

brandon.peyton@energydi.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)