

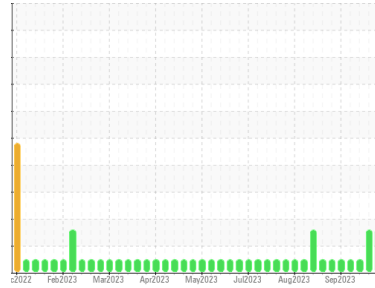


# OIL ANALYSIS REPORT



Machine Id  
**HANM02BE (S/N 3RC00182)**  
 Component  
**Biogas Engine**  
 Fluid  
**CHEVRON HDAX LFG SAE 40 (--- GAL)**

Sample Rating Trend



**DIRT**



## DIAGNOSIS

### ▲ Recommendation

The oil is near the end of its useful service life, recommend schedule an oil change. 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>WC0851274</b>	WC0851222	WC0851209
Sample Date	Client Info		<b>27 Oct 2023</b>	20 Oct 2023	12 Oct 2023
Machine Age	hrs	Client Info	<b>68772</b>	68604	68424
Oil Age	hrs	Client Info	<b>1085</b>	917	737
Oil Changed	Client Info		<b>Not Chngd</b>	Not Chngd	Not Chngd
Sample Status			<b>ABNORMAL</b>	ABNORMAL	NORMAL

## CONTAMINATION

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

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >15	<b>4</b>	2	1
Chromium	ppm	ASTM D5185m >4	<b>&lt;1</b>	<1	0
Nickel	ppm	ASTM D5185m >2	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m >5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >6	<b>2</b>	3	<1
Lead	ppm	ASTM D5185m >9	<b>2</b>	2	<1
Copper	ppm	ASTM D5185m >14	<b>2</b>	2	1
Tin	ppm	ASTM D5185m >4	<b>6</b>	8	4
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>0</b>	<1	0
Barium	ppm	ASTM D5185m	<b>0</b>	10	0
Molybdenum	ppm	ASTM D5185m	<b>1</b>	1	2
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	<b>6</b>	9	12
Calcium	ppm	ASTM D5185m	<b>1886</b>	2336	1760
Phosphorus	ppm	ASTM D5185m 270	<b>309</b>	404	245
Zinc	ppm	ASTM D5185m 310	<b>362</b>	487	314
Sulfur	ppm	ASTM D5185m	<b>2223</b>	3618	1944

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >181	<b>▲ 181</b>	▲ 200	122
Sodium	ppm	ASTM D5185m	<b>2</b>	0	<1
Potassium	ppm	ASTM D5185m >20	<b>1</b>	3	0

## INFRA-RED

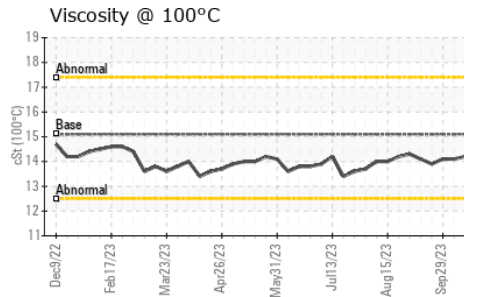
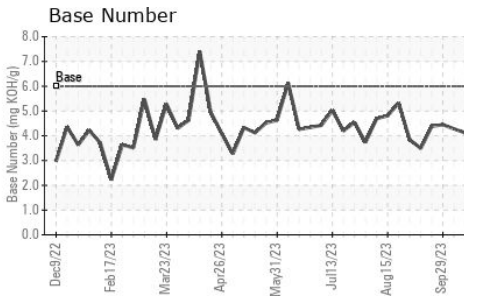
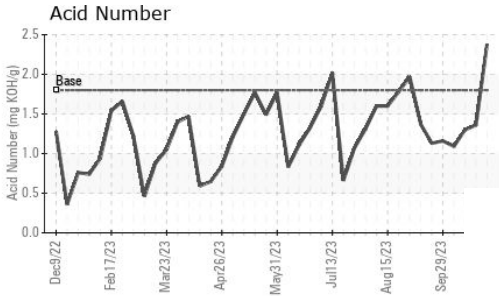
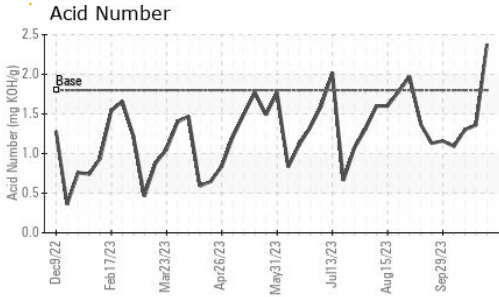
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	<b>7.4</b>	7.0	7.2
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>22.4</b>	21.4	19.2

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>18.8</b>	17.0	14.0
Acid Number (AN)	mg KOH/g	ASTM D8045 1.8	<b>2.38</b>	1.36	1.30
Base Number (BN)	mg KOH/g	ASTM D2896 6.0	<b>3.96</b>	3.68	4.12



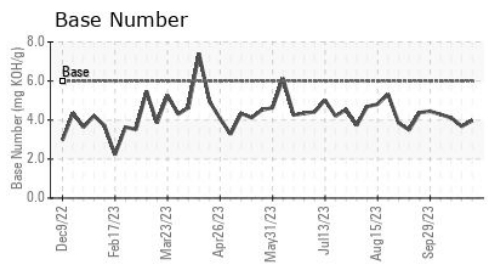
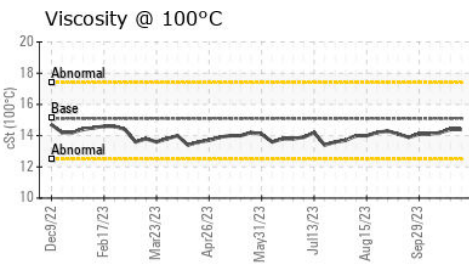
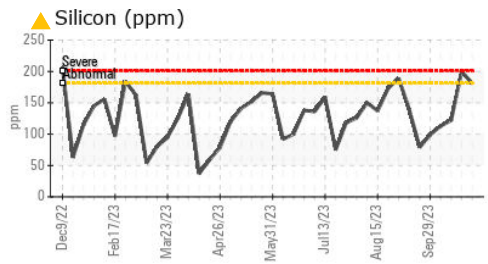
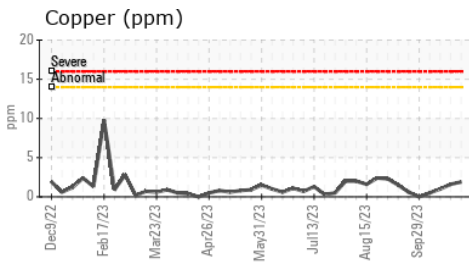
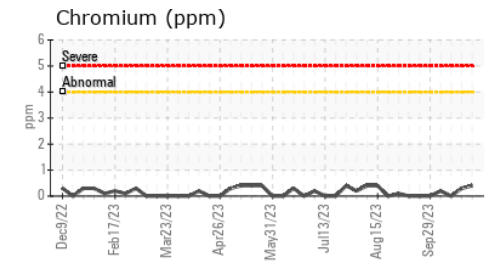
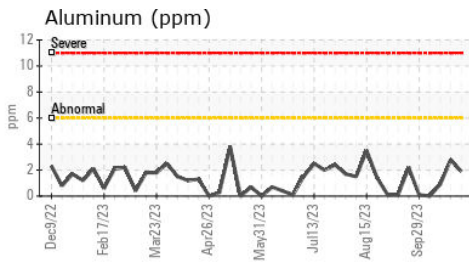
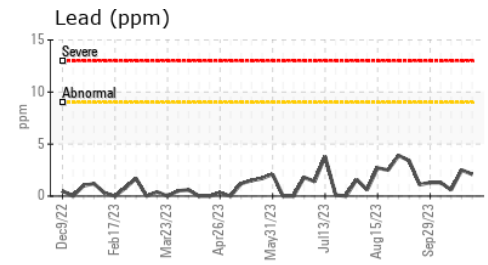
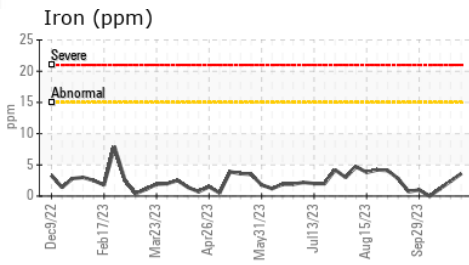
# OIL ANALYSIS REPORT



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	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.4	14.2

### GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0851274 **Received** : 31 Oct 2023  
**Lab Number** : 05994510 **Diagnosed** : 03 Nov 2023  
**Unique Number** : 10722870 **Diagnostician** : Jonathan Hester  
**Test Package** : MOB 2

**EDL NA Recips-Hancock County**  
 HANCOCK COUNTY POWER STATION, 3574 TOWNSHIP ROAD 142  
 FINDLAY, OH  
 US 45840  
 Contact: TIM CUSICK  
 tim.cusick@energydevelopments.com

Certificate L2367  
 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)