

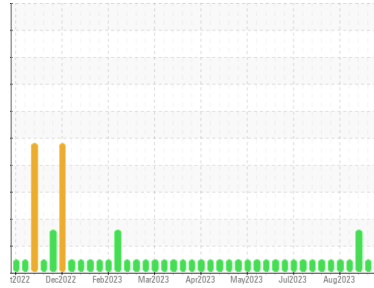


# OIL ANALYSIS REPORT



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

Sample Rating Trend



**NORMAL**



## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### 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>WC0851189</b>	WC0851184	WC0851190
Sample Date	Client Info		<b>22 Sep 2023</b>	08 Sep 2023	30 Aug 2023
Machine Age	hrs	Client Info	<b>67944</b>	67608	67394
Oil Age	hrs	Client Info	<b>257</b>	1327	1113
Oil Changed	Client Info		<b>Not Chngd</b>	Not Chngd	Not Chngd
Sample Status			<b>NORMAL</b>	NORMAL	ABNORMAL

## 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>&lt;1</b>	3	4
Chromium	ppm	ASTM D5185m >4	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185m >2	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	<b>0</b>	0	0
Silver	ppm	ASTM D5185m >5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >6	<b>2</b>	<1	<1
Lead	ppm	ASTM D5185m >9	<b>1</b>	3	4
Copper	ppm	ASTM D5185m >14	<b>&lt;1</b>	2	2
Tin	ppm	ASTM D5185m >4	<b>3</b>	6	7
Vanadium	ppm	ASTM D5185m	<b>0</b>	<1	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>0</b>	0	<1
Barium	ppm	ASTM D5185m	<b>1</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>0</b>	1	2
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	<b>6</b>	6	8
Calcium	ppm	ASTM D5185m	<b>1701</b>	1950	2136
Phosphorus	ppm	ASTM D5185m 270	<b>273</b>	289	314
Zinc	ppm	ASTM D5185m 310	<b>352</b>	353	381
Sulfur	ppm	ASTM D5185m	<b>2409</b>	2314	2574

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >181	<b>79</b>	140	▲ 189
Sodium	ppm	ASTM D5185m	<b>0</b>	2	2
Potassium	ppm	ASTM D5185m >20	<b>1</b>	<1	<1

## INFRA-RED

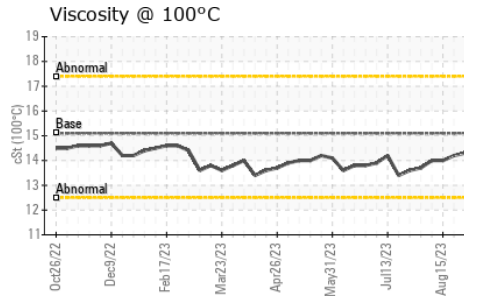
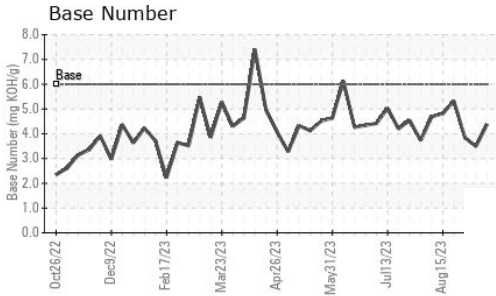
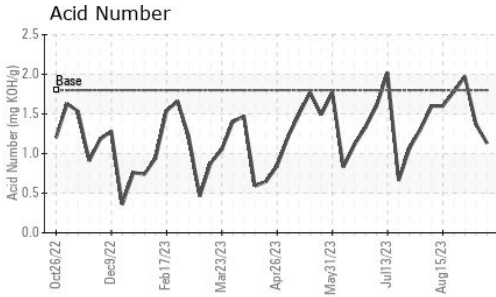
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	<b>0</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	<b>6.0</b>	7.6	8.6
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>18.1</b>	21.0	22.1

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>12.1</b>	17.2	19.5
Acid Number (AN)	mg KOH/g	ASTM D8045 1.8	<b>1.13</b>	1.37	1.97
Base Number (BN)	mg KOH/g	ASTM D2896 6.0	<b>4.38</b>	3.49	3.84



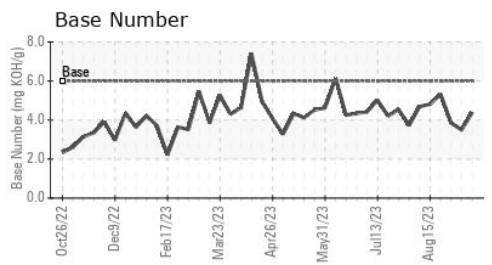
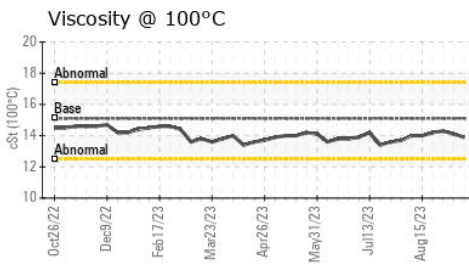
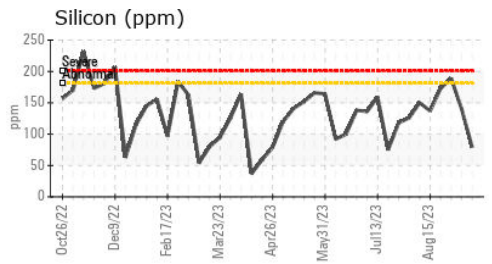
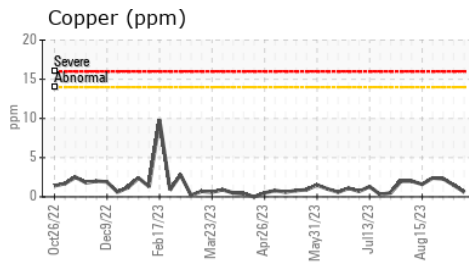
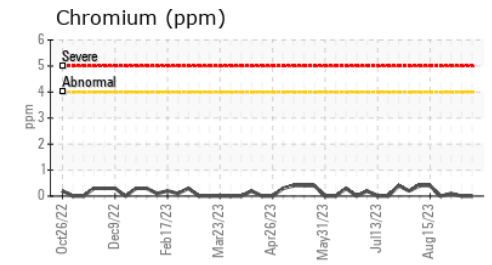
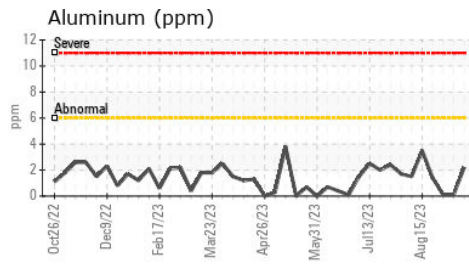
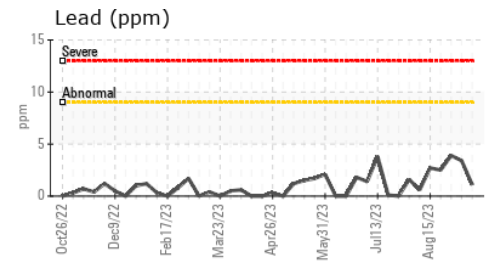
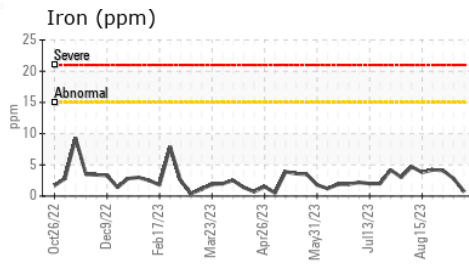
# OIL ANALYSIS REPORT



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	13.9	14.1

## GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : WC0851189 Received : 25 Sep 2023  
 Lab Number : 05960756 Diagnosed : 27 Sep 2023  
 Unique Number : 10661969 Diagnostician : Don Baldrige  
 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

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)

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F: