

# **OIL ANALYSIS REPORT**

#### Sample Rating Trend

# NORMAL



# Grand Blanc CAT 6 GBLM06BE

**Biogas Engine** 

CHEVRON HDAX 6500 LFG GAS ENGINE OIL (--- GAL)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: 200hr Oil Sample )

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

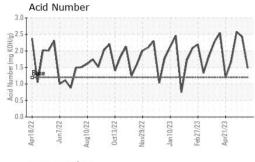
#### **Fluid Condition**

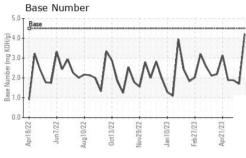
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

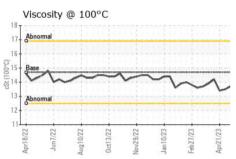
GAS ENGINE OIL (-	~~=)	r2022 Jun20	22 Aug2022 Oct2022	NOVEUEE JAILEUES PROEUES P	(p12023	
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0795412	WC0795384	WC0795380
Sample Date		Client Info		30 May 2023	09 May 2023	01 May 2023
Machine Age	hrs	Client Info		85923	85417	85248
Oil Age	hrs	Client Info		271	608	443
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	ABNORMAL	ABNORMAL
CONTAMINATION	J .	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>15	2	4	4
Chromium	ppm	ASTM D5185m	>4	0	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>6	<1	<1	0
Lead	ppm	ASTM D5185m	>9	2	4	3
Copper	ppm	ASTM D5185m	>6	1	<1	1
Tin		ASTM D5185m	>4	1	2	2
Vanadium	ppm	ASTM D5185m	>4	0	0	0
	ppm			-		
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		0	<1	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		<1	<1	<1
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	AOTAL DELOE				
Coloium	۲۲۰۰۰	ASTM D5185m		5	8	7
Calcium	ppm	ASTM D5185m ASTM D5185m		5 1815	8 1875	7 1887
Calcium Phosphorus						
Phosphorus	ppm	ASTM D5185m		1815	1875	1887
Phosphorus Zinc	ppm ppm	ASTM D5185m ASTM D5185m		1815 271	1875 283	1887 264
Phosphorus Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	1815 271 291	1875 283 331	1887 264 339 3446
Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	1815 271 291 3263	1875 283 331 3670	1887 264 339 3446
Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method		1815 271 291 3263 current	1875 283 331 3670 history1	1887 264 339 3446 history2
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m		1815 271 291 3263 current	1875 283 331 3670 history1	1887 264 339 3446 history2
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	>181	1815 271 291 3263 current 75	1875 283 331 3670 history1 126 2	1887 264 339 3446 history2 97
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	>181	1815 271 291 3263 current 75 2 <1	1875 283 331 3670 history1 126 2	1887 264 339 3446 history2 97 0
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>181	1815 271 291 3263 current 75 2 <1	1875 283 331 3670 history1 126 2 0	1887 264 339 3446 history2 97 0 2
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  ASTM D5185m  *ASTM D5185m	>181 >20 limit/base	1815 271 291 3263 current 75 2 <1 current	1875 283 331 3670 history1 126 2 0 history1	1887 264 339 3446 history2 97 0 2 history2
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624	>181 >20 limit/base >20	1815 271 291 3263 current 75 2 <1 current 0 6.6	1875 283 331 3670 history1 126 2 0 history1 0 6.1	1887 264 339 3446 history2 97 0 2 history2 0 5.5
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  ASTM D5185m  *ASTM D7844  *ASTM D7624  *ASTM D7415	>181 >20 limit/base >20 >30	1815 271 291 3263 current 75 2 <1 current 0 6.6 21.7	1875 283 331 3670 history1 126 2 0 history1 0 6.1 28.4	1887 264 339 3446 history2 97 0 2 history2 0 5.5 23.3
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm TION	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  ASTM D5185m  *ASTM D7624 *ASTM D7415  method	>181 >20 limit/base >20 >30 limit/base	1815 271 291 3263	1875 283 331 3670 history1 126 2 0 history1 0 6.1 28.4 history1	1887 264 339 3446 history2 97 0 2 history2 0 5.5 23.3



## **OIL ANALYSIS REPORT**



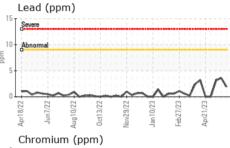


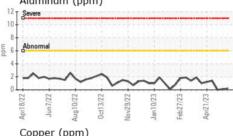


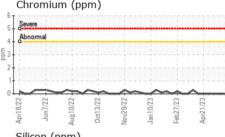
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

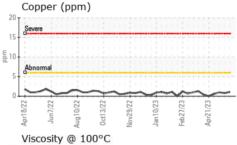
FLUID PROPERTIES		method limit/base				history2
Visc @ 100°C	cSt	ASTM D445	14.7	13.6	13.9	13.7

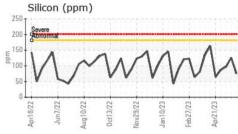
Iro Seve	n (pp	m)		1007.0			
	ormal						
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V	/ /		1		VI	~	1
Apr18/22	Jun7/22	Aug10/22	Oct13/22	Nov29/22	Jan 10/23	Feb27/23	Apr21/23
				-			

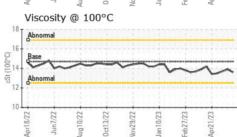


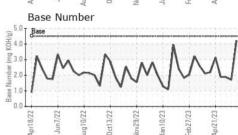
















Certificate L2367

Laboratory Sample No. Lab Number Test Package : MOB 2

**Unique Number** 

: WC0795412 : 05862045 : 10496510

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received Diagnosed Diagnostician

: 01 Jun 2023 : 03 Jun 2023 : Don Baldridge **EDL NA Recips-Grand Blanc** 

Grand Blanc Powerstation, 2361 West Grand Blanc Road Grand Blanc, MI US 48439

> Contact: Tony Saint Marie tony.saintmarie@edlenergy.com T:

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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