

OIL ANALYSIS REPORT

Sample Rating Trend

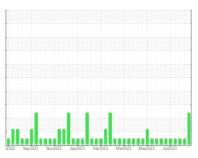
DEGRADATION



Grand Blanc CAT 7 GBLM07BE

Component
Biogas Engine

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





DIAGNOSIS

Recommendation

The oil is near the end of it's useful service life, recommend schedule an oil change. 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.

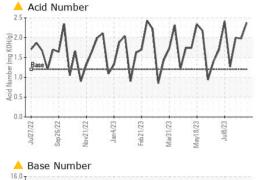
Fluid Condition

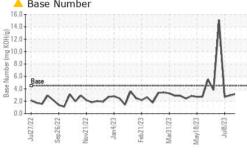
The BN level is low. The AN level is at the top-end of the recommended limit.

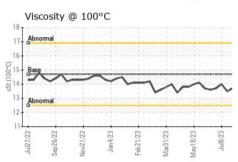
CAMPLE INCORA	AATIONI	and the self	Page 21 / Page 22 2		In the American	la la tana 20
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0825012	WC0824957	WC0825015
Sample Date		Client Info		13 Aug 2023	02 Aug 2023	25 Jul 2023
Machine Age	hrs	Client Info		124531	124341	124142
Oil Age	hrs	Client Info		0	592	0
Oil Changed		Client Info		N/A	Not Changd	N/A
Sample Status				ABNORMAL	NORMAL	NORMAL
CONTAMINATION	V	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	4	2	1
Chromium	ppm	ASTM D5185m		0	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	_	<1	<1	<1
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m		1	2	<1
Lead	ppm	ASTM D5185m	>9	<1	2	0
Copper	ppm	ASTM D5185m	>6	2	2	1
Tin	ppm	ASTM D5185m	>4	2	2	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1	history2 0
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	0	0	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	0 0	0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1	0 0 1	0 0 1
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1 <1	0 0 1 <1	0 0 1 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1 <1 9	0 0 1 <1 12	0 0 1 <1 7
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1 <1 9 1996	0 0 1 <1 12 1873	0 0 1 <1 7 1981
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1 <1 9 1996 286	0 0 1 <1 12 1873 271	0 0 1 <1 7 1981 283
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1 <1 9 1996 286 343	0 0 1 <1 12 1873 271 331	0 0 1 <1 7 1981 283 321
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1 <1 9 1996 286 343 4008	0 0 1 <1 12 1873 271 331 3650	0 0 1 <1 7 1981 283 321 3647
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1 <1 9 1996 286 343 4008	0 0 1 <1 12 1873 271 331 3650 history1	0 0 1 <1 7 1981 283 321 3647 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181	0 0 <1 <1 9 1996 286 343 4008 current	0 0 1 <1 12 1873 271 331 3650 history1	0 0 1 <1 7 1981 283 321 3647 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181	0 0 <1 <1 9 1996 286 343 4008 current 139 2 <1	0 0 1 <1 12 1873 271 331 3650 history1 113 2 <1	0 0 1 <1 7 1981 283 321 3647 history2 90 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	0 0 <1 <1 9 1996 286 343 4008 current 139 2 <1	0 0 1 <1 12 1873 271 331 3650 history1 113 2 <1 history1	0 0 1 <1 7 1981 283 321 3647 history2 90 1 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >181 >20 limit/base	0 0 <1 <1 <1 9 1996 286 343 4008 current 139 2 <1 current 0.1	0 0 1 <1 12 1873 271 331 3650 history1 113 2 <1 history1 0	0 0 1 <1 7 1981 283 321 3647 history2 90 1 0 history2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m	limit/base >181 >20 limit/base >20	0 0 <1 <1 9 1996 286 343 4008 current 139 2 <1 current 0.1 6.0	0 0 1 <1 12 1873 271 331 3650 history1 113 2 <1 history1 0 6.1	0 0 1 <1 7 1981 283 321 3647 history2 90 1 0 history2 0 6.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	limit/base >181 >20 limit/base >20 >30	0 0 <1 <1 9 1996 286 343 4008 current 139 2 <1 current 0.1 6.0 26.2	0 0 1 <1 12 1873 271 331 3650 history1 113 2 <1 history1 0 6.1 25.1	0 0 1 <1 7 1981 283 321 3647 history2 90 1 0 history2 0 6.0 23.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m	limit/base >181 >20 limit/base >20	0 0 <1 <1 <1 9 1996 286 343 4008 current 139 2 <1 current 0.1 6.0 26.2 current	0 0 1 <1 12 1873 271 331 3650 history1 113 2 <1 history1 0 6.1 25.1 history1	0 0 1 <1 7 1981 283 321 3647 history2 90 1 0 history2 0 6.0 23.2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm	ASTM D5185m Method *ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D76185m method *ASTM D7844 *ASTM D7624 *ASTM D7415 method *ASTM D7414	limit/base >181 >20 limit/base >20 >30 limit/base >25	0 0	0 0 1 <1 12 1873 271 331 3650 history1 113 2 <1 history1 0 6.1 25.1 history1 16.6	0 0 1 <1 7 1981 283 321 3647 history2 90 1 0 history2 0 6.0 23.2 history2 14.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D7415 Method	limit/base >181 >20 limit/base >20 >30 limit/base	0 0 <1 <1 <1 9 1996 286 343 4008 current 139 2 <1 current 0.1 6.0 26.2 current	0 0 1 <1 12 1873 271 331 3650 history1 113 2 <1 history1 0 6.1 25.1 history1	0 0 1 <1 7 1981 283 321 3647 history2 90 1 0 history2 0 6.0 23.2 history2



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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
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
	TEO.		Provide a second		for the form and	la la tarre O
FLUID PROPERT	IES	method	limit/base	current	history1	history2

14.0

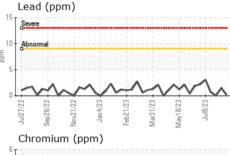
Iro 25 T 3 D 3	n (pp	m)						-
20 - Seve	ere							
Abn	ormal	ii¦ii	ii¦ii	ii¦ii	11111	11111	11;1111	
10								
5								
3	1	~	\checkmark	~	レ	~		
727	/22	727	/23	/23	/23	/23	/23	_
Jul27/22	Sep26/	Nov21/	Jan4/23	Feb21/23	Mar31/23	May18/2	Jul8/23	
						2		

cSt

ASTM D445 14.7

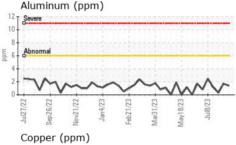
Visc @ 100°C

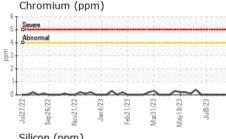
GRAPHS

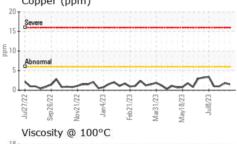


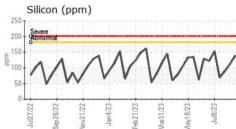
13.8

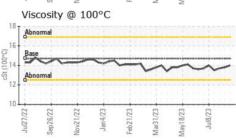
13.7

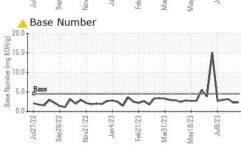
















Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : MOB 2

: WC0825012 : 05923539 : 10603486

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

: 14 Aug 2023 : 15 Aug 2023 Diagnostician : Doug Bogart **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

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)

T:

F: