

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Grand Blanc CAT 7 GBLM07BE

Component
Biogas Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: 600hr oil sample)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil

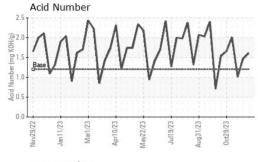
Fluid Condition

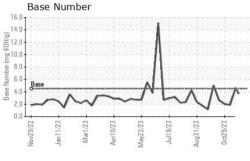
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

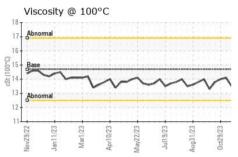
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2		
Sample Number		Client Info		WC0870060	WC0870074	WC0870128		
Sample Date		Client Info		04 Dec 2023	24 Nov 2023	20 Nov 2023		
Machine Age	hrs	Client Info		127051	126832	126643		
Oil Age	hrs	Client Info		614	397	0		
Oil Changed		Client Info		Not Changd	Not Changd	N/A		
Sample Status				NORMAL	NORMAL	NORMAL		
CONTAMINATION	V	method	limit/base	current	history1	history2		
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0		
Water		WC Method	>0.1	NEG	NEG	NEG		
Glycol		WC Method		NEG	NEG	NEG		
WEAR METALS		method	limit/base	current	history1	history2		
	200	ASTM D5185m	>15	3	0	0		
Iron	ppm		>15	ა <1	0	0		
Chromium	ppm	ASTM D5185m						
Nickel	ppm	ASTM D5185m ASTM D5185m	>2	<1 <1	0	0		
Titanium	ppm		_					
Silver	ppm	ASTM D5185m	>5	0 2	0	0		
Aluminum	ppm	ASTM D5185m	>6					
Lead	ppm	ASTM D5185m	>9	1	0	0		
Copper	ppm	ASTM D5185m	>6	<1	0	0		
Tin	ppm	ASTM D5185m	>4	1	<1	<1		
Vanadium	ppm	ASTM D5185m		0	0	0		
Cadmium	ppm	ASTM D5185m		0	0	0		
ADDITIVES		method	limit/base	current	history1	history2		
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	0	history1	0		
	ppm		limit/base					
Boron		ASTM D5185m	limit/base	0	0	0		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	0	0 0 0 0 <1	0 0 0 <1		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 1 <1 0	0 0 0	0 0 0		
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 1 <1	0 0 0 0 <1	0 0 0 <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 0 1882 305	0 0 0 <1 9 1771 261	0 0 0 <1 9 1777 264		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 1 <1 0 1882	0 0 0 <1 9	0 0 0 <1 9		
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 0 1882 305	0 0 0 <1 9 1771 261	0 0 0 <1 9 1777 264		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 1 <1 0 1882 305 329	0 0 0 <1 9 1771 261 322	0 0 0 <1 9 1777 264 319		
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		0 0 1 <1 0 1882 305 329 2884	0 0 0 <1 9 1771 261 322 2761	0 0 0 <1 9 1777 264 319 2683		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	0 0 1 <1 0 1882 305 329 2884	0 0 0 <1 9 1771 261 322 2761 history1	0 0 0 <1 9 1777 264 319 2683		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	0 0 1 <1 0 1882 305 329 2884 current	0 0 0 <1 9 1771 261 322 2761 history1	0 0 0 <1 9 1777 264 319 2683 history2		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181	0 0 1 <1 0 1882 305 329 2884 current 113	0 0 0 <1 9 1771 261 322 2761 history1 73	0 0 0 <1 9 1777 264 319 2683 history2		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181 >20	0 0 1 <1 0 1882 305 329 2884 current 113 0 2	0 0 0 <1 9 1771 261 322 2761 history1 73 <1	0 0 0 <1 9 1777 264 319 2683 history2 51 0		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181 >20	0 0 1 <1 0 1882 305 329 2884 current 113 0 2	0 0 0 <1 9 1771 261 322 2761 history1 73 <1 <1	0 0 0 <1 9 1777 264 319 2683 history2 51 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 ASTM D5185m	limit/base >181 >20 limit/base	0 0 1 <1 0 1882 305 329 2884 current 113 0 2 current	0 0 0 <1 9 1771 261 322 2761 history1 73 <1 <1	0 0 0 <1 9 1777 264 319 2683 history2 51 0 0 history2		
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 0 1882 305 329 2884 current 113 0 2 current 0.1 6.0	0 0 0 1771 261 322 2761 history1 73 <1 <1 history1 0 5.8	0 0 0 <1 9 1777 264 319 2683 history2 51 0 0 history2		
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 ASTM D5185m method *ASTM D7624 *ASTM D7624 *ASTM D7615 method	limit/base >181 >20 limit/base >20 >30 limit/base	0 0 1 <1 0 1882 305 329 2884 current 113 0 2 current 0.1 6.0 24.6 current	0 0 0 1771 261 322 2761 history1 73 <1 <1 history1 0 5.8 22.8 history1	0 0 0 11 9 1777 264 319 2683 history2 51 0 0 history2 0.1 6.6 19.4 history2		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	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 ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D7415 Method *ASTM D7414	limit/base >181 >20 limit/base >20 >30 limit/base >25	0 0 1 <1 0 1882 305 329 2884 current 113 0 2 current 0.1 6.0 24.6 current 17.4	0 0 0 1771 261 322 2761 history1 73 <1 <1 history1 0 5.8 22.8 history1 14.9	0 0 0 -<1 9 1777 264 319 2683 history2 51 0 0 history2 0.1 6.6 19.4 history2		
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 ASTM D5185m method *ASTM D7624 *ASTM D7624 *ASTM D7615 method	limit/base >181 >20 limit/base >20 >30 limit/base	0 0 1 <1 0 1882 305 329 2884 current 113 0 2 current 0.1 6.0 24.6 current	0 0 0 1771 261 322 2761 history1 73 <1 <1 history1 0 5.8 22.8 history1	0 0 0 11 9 1777 264 319 2683 history2 51 0 0 history2 0.1 6.6 19.4 history2		



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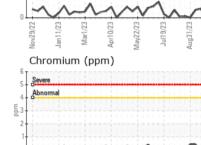


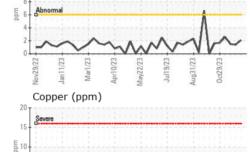
VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance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

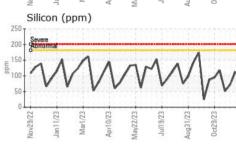
FLUID FROFER	THES	memou			HISTOLAL	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	14.7	13.8	13.8	13.5

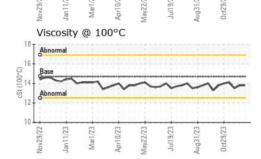
Lead (ppm)

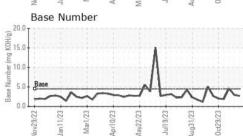
Iro	n (ppi	m)						
20 Seve	re							
Abn	ormal							
10								
5-	1	~1	\sim	V	٦.	\mathcal{J}	hy.	
727	1/23	/23	1/23	123	/23	/23	123	-
Nov29/22	Jan11	Mar1/23	Apr10/23	May22/2	Jul19/23	Aug31/23	Oct29/23	
Alu	minur	m (pp	m)					
12 T Seve	ro			000000				















Certificate L2367

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

: 06029564

: WC0870060 : 10779355

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 08 Dec 2023 Diagnosed

: 12 Dec 2023 : Don Baldridge Diagnostician

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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