

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: 600hr oil sample)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

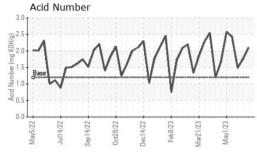
Fluid Condition

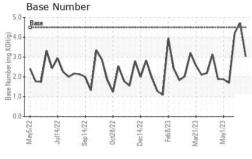
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

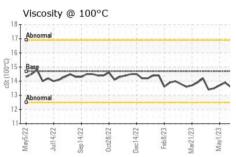
		y2022 Jul202		Dec2022 Feb2023 Mar2023 I		
SAMPLE INFORM	/ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0824947	WC0795399	WC0795412
Sample Date		Client Info		13 Jun 2023	05 Jun 2023	30 May 2023
Machine Age	hrs	Client Info		86246	86060	85923
Oil Age	hrs	Client Info		591	409	271
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	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	6	4	2
Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>6	2	<1	<1
Lead	ppm	ASTM D5185m	>9	5	3	2
Copper	ppm		>6	1	1	1
Tin	ppm	ASTM D5185m	>4	2	2	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	<1
- Cua	PP	7101111 20100111				
ADDITIVEC.		ام مالم مما	line it /le e e e		المرسمة ماسيط	history.O
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	<1	0	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	<1 0	0	0
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	<1 0 1	0 0 1	0 0 <1
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	<1 0 1 <1	0 0 1 <1	0 0 <1 <1
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	<1 0 1	0 0 1 <1 10	0 0 <1 <1 5
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	<1 0 1 <1 9 1965	0 0 1 <1 10 1901	0 0 <1 <1 5 1815
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	<1 0 1 <1 9	0 0 1 <1 10 1901 281	0 0 <1 <1 5 1815 271
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	<1 0 1 <1 9 1965	0 0 1 <1 10 1901	0 0 <1 <1 5 1815
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	<1 0 1 <1 9 1965 276	0 0 1 <1 10 1901 281	0 0 <1 <1 5 1815 271
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	limit/base	<1 0 1 <1 9 1965 276 357	0 0 1 <1 10 1901 281 331	0 0 <1 <1 5 1815 271 291
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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		<1 0 1 <1 9 1965 276 357 3661	0 0 1 <1 10 1901 281 331 3558	0 0 <1 <1 5 1815 271 291 3263
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	<1 0 1 <1 9 1965 276 357 3661	0 0 1 <1 10 1901 281 331 3558 history1	0 0 <1 <1 5 1815 271 291 3263 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181	<1 0 1 <1 9 1965 276 357 3661 current 128	0 0 1 <1 10 1901 281 331 3558 history1	0 0 <1 <1 5 1815 271 291 3263 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	<1 0 1 <1 9 1965 276 357 3661 current 128	0 0 1 <1 10 1901 281 331 3558 history1 98 2	0 0 <1 <1 5 1815 271 291 3263 history2 75
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	<1 0 1 <1 9 1965 276 357 3661 current 128 2 1	0 0 1 <1 10 1901 281 331 3558 history1 98 2	0 0 <1 <1 5 1815 271 291 3263 history2 75 2 <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 ppm	ASTM D5185m	limit/base >181 >20 limit/base	<1 0 1 <1 9 1965 276 357 3661 current 128 2 1	0 0 1 <1 10 1901 281 331 3558 history1 98 2 1	0 0 <1 <1 5 1815 271 291 3263 history2 75 2 <1
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	<1 0 1 <1 9 1965 276 357 3661 current 128 2 1 current 0.1	0 0 1 <1 10 1901 281 331 3558 history1 98 2 1 history1	0 0 <1 <1 5 1815 271 291 3263 history2 75 2 <1 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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >181 >20 limit/base >20	<1 0 1 <1 9 1965 276 357 3661 current 128 2 1 current 0.1 6.4	0 0 1 <1 10 1901 281 331 3558 history1 98 2 1 history1 0.1 6.1	0 0 <1 <1 5 1815 271 291 3263 history2 75 2 <1 history2 0 6.6
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	<1 0 1 <1 9 1965 276 357 3661 current 128 2 1 current 0.1 6.4 26.6	0 0 1 <1 10 1901 281 331 3558 history1 98 2 1 history1 0.1 6.1 24.2	0 0 <1 <1 5 1815 271 291 3263 history2 75 2 <1 history2 0 6.6 21.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7624 *ASTM D7415 Method *ASTM D7414	limit/base >181 >20 limit/base >20 >30 limit/base >25	<1 0 1 <1 9 1965 276 357 3661 current 128 2 1 current 0.1 6.4 26.6 current	0 0 1 <1 10 1901 281 331 3558 history1 98 2 1 history1 0.1 6.1 24.2 history1	0 0 <1 <1 5 1815 271 291 3263 history2 75 2 <1 history2 0 6.6 21.7 history2



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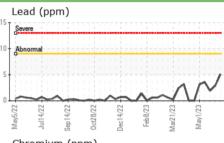


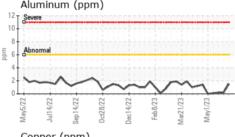


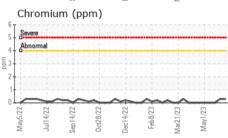
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

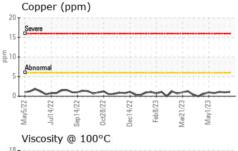
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Visc @ 100°C	cSt	ASTM D445	14.7	13.8	13.7	13.6

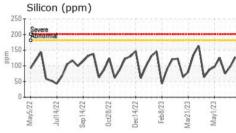
Severe Abnormal						
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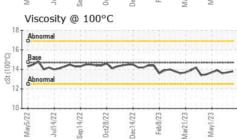


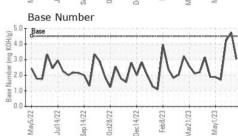
















Certificate L2367

Test Package : MOB 2

Laboratory Sample No. Lab Number **Unique Number**

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0824947 : 05874593 : 10519696

Received Diagnosed Diagnostician

: 15 Jun 2023 : 17 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)

Report Id: EDLGRA [WUSCAR] 05874593 (Generated: 07/21/2023 12:54:17) Rev: 1

Submitted By: DARREL HILTZ

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