

OIL ANALYSIS REPORT

Sample Rating Trend

DEGRADATION DEGRADATION DIAMETER STATE OF THE STATE OF



Machine Id

Grand Blanc CAT 2 GBLM02BE
Component
Biogas Engine

CHEVRON HDAX 9500 GAS ENGINE OIL 40 (--- GAL)

DIAGNOSIS

Recommendation

We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition. (Customer Sample Comment: 600hr Oil Sample)

Wear

The copper level is abnormal. The tin level is abnormal.

Contamination

There is no indication of any contamination in the oil

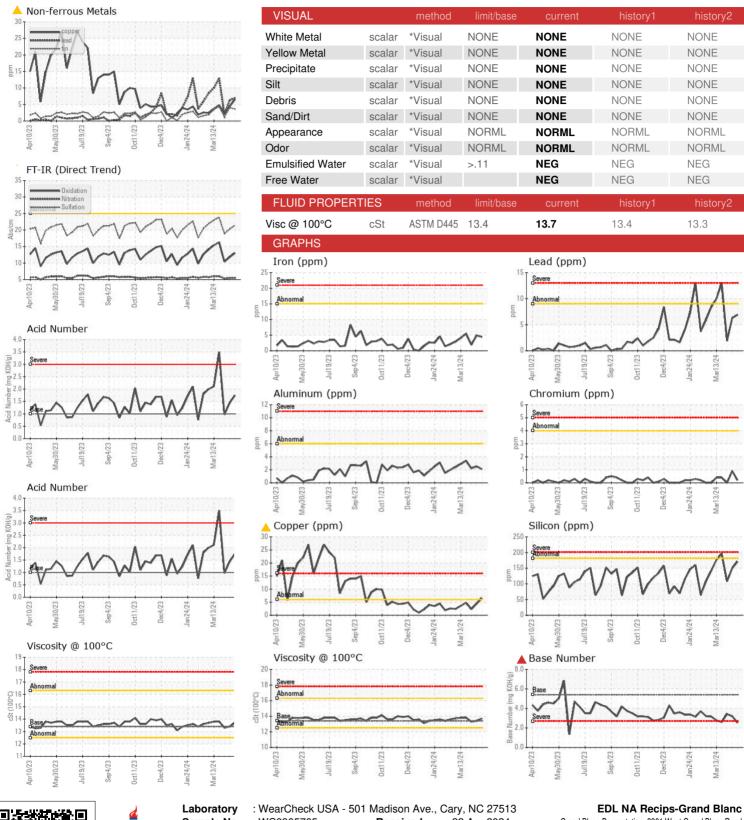
▲ Fluid Condition

The BN level is low. The AN level is acceptable for this fluid.

Sample Number Client Info WC0905705 WC0905705 WC0905705 Machine Age Client Info 18 Apr 2024 10 Apr 2024 03 Apr Machine Age hrs Client Info 603 0 0 0 0 0 0 0 0 0	r2023 Mwy2023 Jul2023 Swp2023 Ocz023 Dec2023 Jan2024 Mwz0024		far2024	Oct2023 Dec2023 Jan2024 I	23 Jul2023 Sep2023	r2023 May20	GAL)	S ENGINE OIL 40 (
Sample Date	thod limit/base current history1 his	story1 history	history1	current	limit/base	method	IATION	SAMPLE INFORM
Machine Age	nt Info WC0905705 WC0905755 WC090	05755 WC090573	WC0905755	WC0905705		Client Info		Sample Number
Dil Age	nt Info 18 Apr 2024 10 Apr 2024 03 Apr 2024	2024 03 Apr 202	10 Apr 2024	18 Apr 2024		Client Info		Sample Date
Contamination Contaminati	nt Info 12348 12158 11989	11989	12158	12348		Client Info	hrs	/lachine Age
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CONTAMINATION method limit/base current history1 hist	nt Info Not Changd N/A N/A	N/A	N/A	Not Changd		Client Info		Oil Changed
Valer	SEVERE ABNORMAL NORMA	RMAL NORMAL	ABNORMAL	SEVERE				Sample Status
Water Gilycol WC Method WC Method >.11 NEG NEG NEG NEG WEAR METALS method Imit/base current history1 history1 ron ppm ASTM D5185m >15 4 5 2 Chromium ppm ASTM D5185m 0 1 0 Vickel ppm ASTM D5185m 0 1 0 Gistiver ppm ASTM D5185m 0 0 <1	thod limit/base current history1 his	story1 history	history1	current	limit/base	method	J	CONTAMINATION
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WEAR METALS method limit/base current history1 hi ron ppm ASTM D5185m >15 4 5 2 Chromium ppm ASTM D5185m 0 1 0 slickel ppm ASTM D5185m 0 -1 -1 slickel ppm ASTM D5185m 0 -1 -1 sliver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >6 2	Method >.11 NEG NEG NEG	G NEG	NEG	NEG	>.11	WC Method		Vater
Chromium	Method NEG NEG NEG	G NEG	NEG	NEG		WC Method		Slycol
Chromium ppm ASTM D5185m >4	thod limit/base current history1 his	story1 history	history1	current	limit/base	method		WEAR METALS
Sickel			5	4	>15	ASTM D5185m	ppm	ron
Silver		0	<1		>4	ASTM D5185m	ppm	Chromium
Silver		0	1			ASTM D5185m	ppm	lickel
Aluminum	D5185m 0 <1 <1	<1	<1	0		ASTM D5185m	ppm	itanium
December December	D5185m O O	0	0	0		ASTM D5185m	ppm	Silver
ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Document Document ASTM D5185m Document Document ASTM D5185m Document Document ASTM D5185m Document Document	D5185m >6 2 2	2	2	2	>6	ASTM D5185m	ppm	Numinum
Academium	D5185m >9 7 6 2	2	6	7	>9	ASTM D5185m	ppm	.ead
Anadium ppm ASTM D5185m 0 <1 <1 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 hi Boron ppm ASTM D5185m 8 7 7 Barium ppm ASTM D5185m 1 0 0 Molybdenum ppm ASTM D5185m 3 4 3 Magnesium ppm ASTM D5185m 16 12 10 Magnesium ppm ASTM D5185m 1872 1755 165 Phosphorus ppm ASTM D5185m 282 295 235 Cinc ppm ASTM D5185m 356 338 309 Bulfur ppm ASTM D5185m 3481 3115 271 CONTAMINANTS method limit/base current history1 hi Silicon ppm ASTM D5185m >221 2 0	D5185m >6 6 4	2	4	<u>^</u> 6	>6	ASTM D5185m	ppm	Copper
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CONTAMINANTS method limit/base current history1 hi Silicon ppm ASTM D5185m >181 171 150 108 Sodium ppm ASTM D5185m >21 2 0 1 Potassium ppm ASTM D5185m >20 0 3 0 INFRA-RED method limit/base current history1 hi Soot % % *ASTM D7844 0.1 0 0 Vitration Abs/cm *ASTM D7624 5.5 5.5 5.3 Sulfation Abs/.1mm *ASTM D7415 21.4 20.3 18.9 FLUID DEGRADATION method limit/base current history1 hi Oxidation Abs/.1mm *ASTM D7414 13.0 11.8 10.4 Acid Number (AN) mg KOH/g ASTM D8045 1.0 1.75 1.44 0.9	D5185m 356 338 309	309	338	356		ASTM D5185m	ppm	Zinc
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INFRA-RED	D5185m >21 2 0 1	1	0	2	>21	ASTM D5185m	ppm	Sodium
Goot % % *ASTM D7844 0.1 0 0 Nitration Abs/cm *ASTM D7624 5.5 5.5 5.5 Sulfation Abs/.1mm *ASTM D7415 21.4 20.3 18.9 FLUID DEGRADATION method limit/base current history1 hi Oxidation Abs/.1mm *ASTM D7414 13.0 11.8 10.4 Acid Number (AN) mg KOH/g ASTM D8045 1.0 1.75 1.44 0.9	D5185m >20 0 3	0	3	0	>20	ASTM D5185m	ppm	Potassium
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Oxidation Abs/.1mm *ASTM D7414 13.0 11.8 10.4 Acid Number (AN) mg KOH/g ASTM D8045 1.0 1.75 1.44 0.9	M D7415 21.4 20.3 18.9	18.9	20.3	21.4		*ASTM D7415	Abs/.1mm	Sulfation
Acid Number (AN) mg KOH/g ASTM D8045 1.0 1.75 1.44 0.9	thod limit/base current history1 his	story1 history	history1	current	limit/base	method	TION	FLUID DEGRADA
Acid Number (AN) mg KOH/g ASTM D8045 1.0 1.75 1.44 0.9	M D7414 13.0 11.8 10.4	3 10.4	11.8	13.0		*ASTM D7414	Abs/.1mm	Oxidation
					1.0			
Base Number (BN) mg KOH/g ASTM D2896 5.4 ▲ 2.53 3.19 3.43						ASTM D2896	mg KOH/g	Base Number (BN)



OIL ANALYSIS REPORT







Certificate 12367

Sample No. Lab Number : 06156190 Unique Number : 10991613

: WC0905705 Test Package : MOB 2

Received : 22 Apr 2024 **Tested**

: 23 Apr 2024 Diagnosed : 24 Apr 2024 - Sean Felton

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. st - 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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