

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL





HANM04BE (S/N 4EK00413) Component

Biogas Engine

CHEVRON HDAX LFG SAE 40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Moor

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil

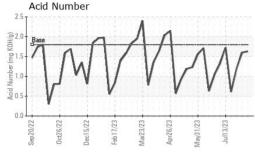
Fluid Condition

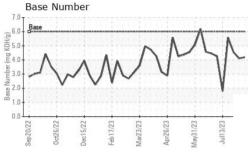
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

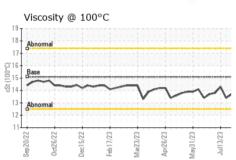
			22 Dec2022 Feb2023	Mar2023 Apr2023 May2023	Jul2023	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0802689	WC0802693	WC0802674
Sample Date		Client Info		10 Aug 2023	02 Aug 2023	27 Jul 2023
Machine Age	hrs	Client Info		68490	68296	68153
Oil Age	hrs	Client Info		523	329	186
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	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	2	2
Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>6	2	2	2
Lead	ppm	ASTM D5185m	>9	<1	1	0
Copper	ppm	ASTM D5185m	>14	8	6	5
Tin	ppm	ASTM D5185m	>4	5	3	2
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
			11 1. //			111
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 2	history1 1	nistory2 2
	ppm		limit/base			
Boron		ASTM D5185m	limit/base	2	1	2
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	2 0	1	2
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 1	1 0 2	2 0 3
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 1 <1	1 0 2 <1	2 0 3 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 1 <1 16	1 0 2 <1 17	2 0 3 <1 7
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		2 0 1 <1 16 2182	1 0 2 <1 17 1943	2 0 3 <1 7 2020
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	270	2 0 1 <1 16 2182 325	1 0 2 <1 17 1943 288	2 0 3 <1 7 2020 298
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	270	2 0 1 <1 16 2182 325 406	1 0 2 <1 17 1943 288 360	2 0 3 <1 7 2020 298 363
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	270 310	2 0 1 <1 16 2182 325 406 2936	1 0 2 <1 17 1943 288 360 2426	2 0 3 <1 7 2020 298 363 2411
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	270 310	2 0 1 <1 16 2182 325 406 2936	1 0 2 <1 17 1943 288 360 2426 history1	2 0 3 <1 7 2020 298 363 2411 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	270 310	2 0 1 <1 16 2182 325 406 2936 current	1 0 2 <1 17 1943 288 360 2426 history1	2 0 3 <1 7 2020 298 363 2411 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	270 310 limit/base >181	2 0 1 <1 16 2182 325 406 2936 current 141	1 0 2 <1 17 1943 288 360 2426 history1 97	2 0 3 <1 7 2020 298 363 2411 history2 83
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	270 310 limit/base >181 >20	2 0 1 <1 16 2182 325 406 2936 current 141 1	1 0 2 <1 17 1943 288 360 2426 history1 97 2 <1	2 0 3 <1 7 2020 298 363 2411 history2 83 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	270 310 limit/base >181 >20 limit/base	2 0 1 <1 16 2182 325 406 2936 current 141 1 <1	1 0 2 <1 17 1943 288 360 2426 history1 97 2 <1	2 0 3 <1 7 2020 298 363 2411 history2 83 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	270 310 limit/base >181 >20 limit/base	2 0 1 <1 16 2182 325 406 2936 current 141 1 <1 current 0.1	1 0 2 <1 17 1943 288 360 2426 history1 97 2 <1 history1	2 0 3 <1 7 2020 298 363 2411 history2 83 1 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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	270 310 limit/base >181 >20 limit/base	2 0 1 <1 16 2182 325 406 2936 current 141 1 <1 current 0.1 7.3	1 0 2 <1 17 1943 288 360 2426 history1 97 2 <1 history1 0 7.1	2 0 3 <1 7 2020 298 363 2411 history2 83 1 0 history2 0 6.8
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 D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145	270 310 limit/base >181 >20 limit/base >20 >30	2 0 1 <1 16 2182 325 406 2936 current 141 1 <1 current 0.1 7.3 20.2	1 0 2 <1 17 1943 288 360 2426 history1 97 2 <1 history1 0 7.1 19.7	2 0 3 <1 7 2020 298 363 2411 history2 83 1 0 history2 0 6.8 18.4
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 METHOD *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m METHOD *ASTM D7844 *ASTM D7624 *ASTM D7415 METHOD	270 310 limit/base >181 >20 limit/base >20 >30 limit/base	2 0 1 <1 16 2182 325 406 2936 current 141 1 <1 current 0.1 7.3 20.2	1 0 2 <1 17 1943 288 360 2426 history1 97 2 <1 history1 0 7.1 19.7 history1	2 0 3 <1 7 2020 298 363 2411 history2 83 1 0 history2 0 6.8 18.4

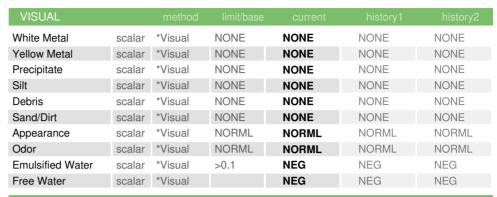


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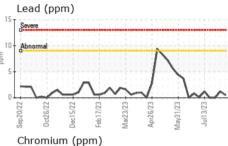


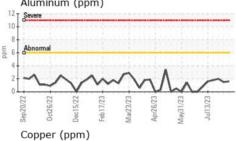


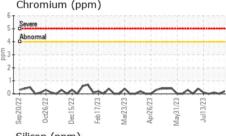


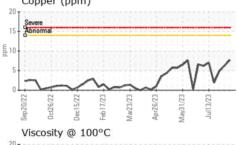
FLUID PROPER	IIIES	method	ilmit/base		nistory i	nistoryz
Visc @ 100°C	cSt	ASTM D445	15.1	14.1	13.9	13.7

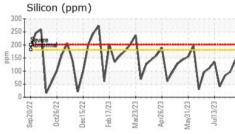
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Abnorm	al A						
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Sep20/22	Oct26/22	Jec15/22	1/23	Mar23/23	Apr26/23	May31/23	Jul13/23

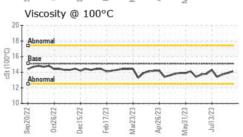


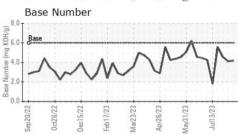
















Certificate L2367

Laboratory Sample No. Lab Number Test Package

Unique Number

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0802689 : 05923536

: 10603483 : MOB 2

Received : 14 Aug 2023 : 15 Aug 2023 Diagnosed : Sean Felton Diagnostician

EDL NA Recips-Hancock County HANCOCK COUNTY POWER STATION, 3574 TOWNSHIP ROAD 142

FINDLAY, OH US 45840

Contact: TIM CUSICK tim.cusick@energydevelopments.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)

Report Id: ENEFIN [WUSCAR] 05923536 (Generated: 08/15/2023 11:14:57) Rev: 1

Submitted By: TIM CUSICK

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