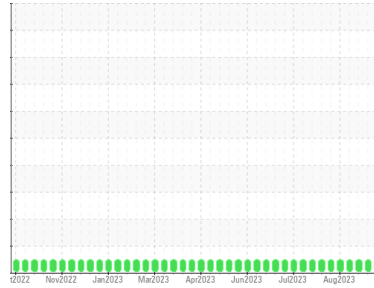




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
E-2 (S/N 1144675)

Component
Biogas Engine

Fluid
MAHLER Q8 Mahler G8 SAE 40 (--- GAL)

DIAGNOSIS

Recommendation

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 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 INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0852891	WC0852886	WC0835658
Sample Date	Client Info			30 Oct 2023	19 Oct 2023	09 Oct 2023
Machine Age	hrs	Client Info		9600	9441	9231
Oil Age	hrs	Client Info		2861	2702	2492
Oil Changed	Client Info			Not Chngd	Not Chngd	Not Chngd
Sample Status				NORMAL	NORMAL	NORMAL

CONTAMINATION		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	>45	2	1	4
Chromium	ppm	ASTM D5185m	>2	0	0	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>10	4	4	<1
Lead	ppm	ASTM D5185m	>5	<1	<1	1
Copper	ppm	ASTM D5185m	>14	0	<1	<1
Tin	ppm	ASTM D5185m	>13	4	4	4
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<1	<1	1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		2	2	3
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		13	14	13
Calcium	ppm	ASTM D5185m		2300	2419	2354
Phosphorus	ppm	ASTM D5185m		446	500	464
Zinc	ppm	ASTM D5185m		567	565	590
Sulfur	ppm	ASTM D5185m		2880	2741	3509

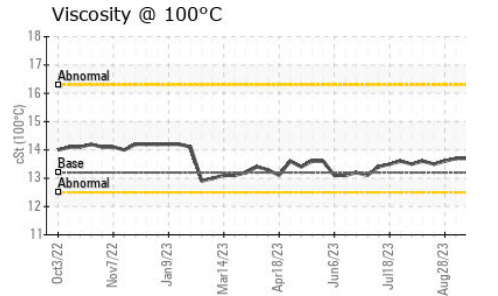
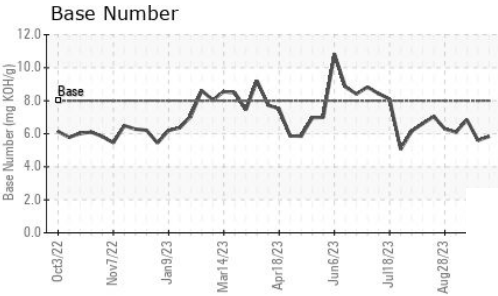
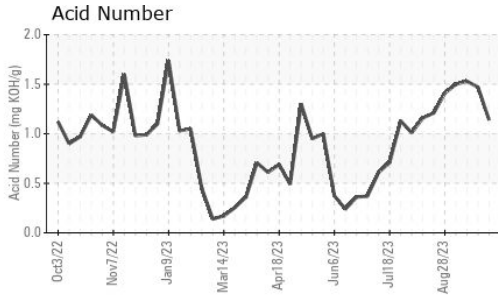
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>200	51	60	50
Sodium	ppm	ASTM D5185m		7	6	5
Potassium	ppm	ASTM D5185m	>20	2	0	4

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		0	0	0
Nitration	Abs/cm	*ASTM D7624	>20	8.3	8.3	7.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.5	20.4	19.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.9	16.1	14.3
Acid Number (AN)	mg KOH/g	ASTM D8045		1.14	1.47	1.53
Base Number (BN)	mg KOH/g	ASTM D2896	8.0	5.84	5.60	6.84



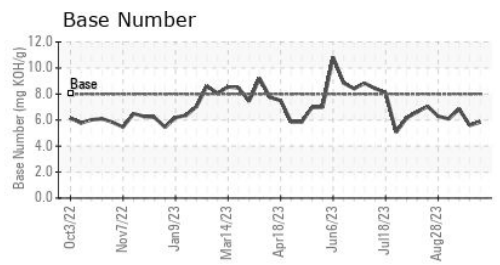
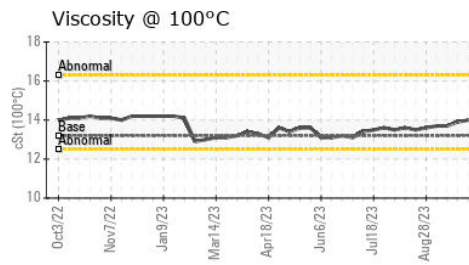
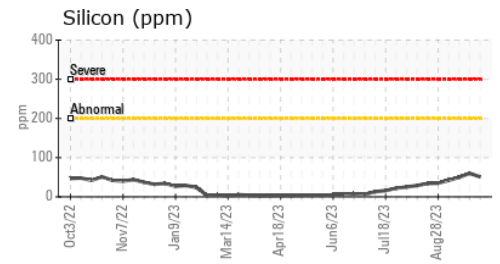
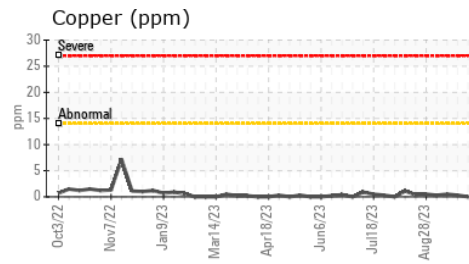
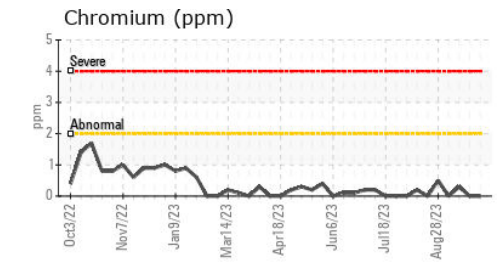
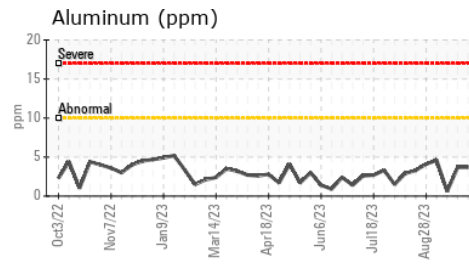
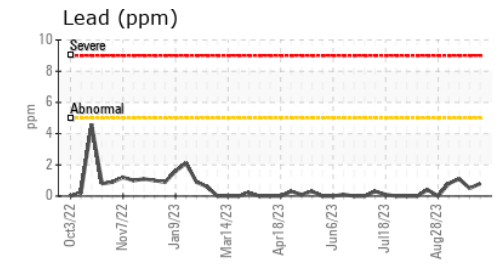
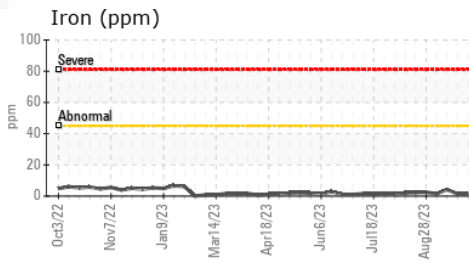
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	13.2	14.0	13.9	13.7

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0852891 Received : 06 Nov 2023
 Lab Number : 06000013 Diagnosed : 08 Nov 2023
 Unique Number : 10728373 Diagnostician : Sean Felton
 Test Package : MOB 2

OAK GROVE GA
 967 CARL-BETHLEHEM RD
 WINDER, GA
 US 30680
 Contact: MATT DICKENS

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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