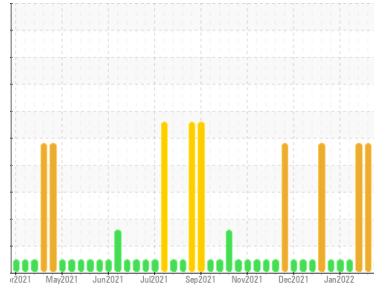




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
ZOKM01BE (S/N GZJ00541)
 Component
Biogas Engine
 Fluid
SHELL MYSELLA S5 S (160 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		WC0566349	WC0623294	WC0623293
Sample Date	Client Info		22 Feb 2022	14 Feb 2022	08 Feb 2022
Machine Age	hrs	Client Info	69664	69490	69343
Oil Age	hrs	Client Info	19	693	546
Oil Changed	Client Info		Changed	N/A	N/A
Sample Status			NORMAL	SEVERE	SEVERE

CONTAMINATION

	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
Iron	ppm	ASTM D5185m >15	2	6	10
Chromium	ppm	ASTM D5185m >4	0	<1	<1
Nickel	ppm	ASTM D5185m	0	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >6	1	3	3
Lead	ppm	ASTM D5185m >9	<1	1	1
Copper	ppm	ASTM D5185m >6	<1	2	2
Tin	ppm	ASTM D5185m >4	<1	5	5
Antimony	ppm	ASTM D5185m	<1	11	15
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	3	3	3
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	3	4	5
Manganese	ppm	ASTM D5185m	0	0	<1
Magnesium	ppm	ASTM D5185m	23	32	38
Calcium	ppm	ASTM D5185m	1458	1543	1568
Phosphorus	ppm	ASTM D5185m 300	327	356	358
Zinc	ppm	ASTM D5185m	414	398	424
Sulfur	ppm	ASTM D5185m	2523	2911	3127

CONTAMINANTS

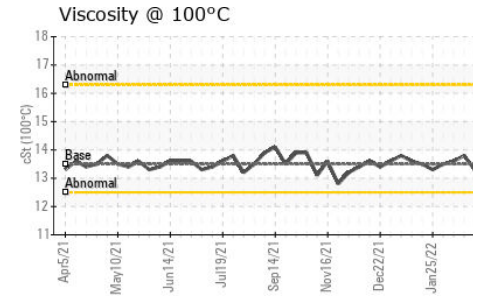
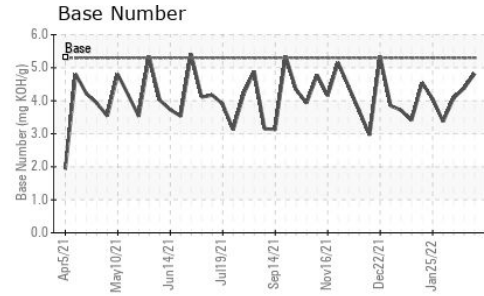
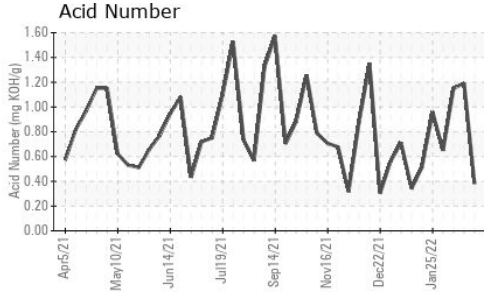
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >181	20	230	210
Sodium	ppm	ASTM D5185m	0	0	<1
Potassium	ppm	ASTM D5185m >20	1	0	0

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0	0.1	0
Nitration	Abs/cm	*ASTM D7624 >20	3.6	5.7	5.4
Sulfation	Abs/.1mm	*ASTM D7415 >30	17.8	23.1	22.2



OIL ANALYSIS REPORT

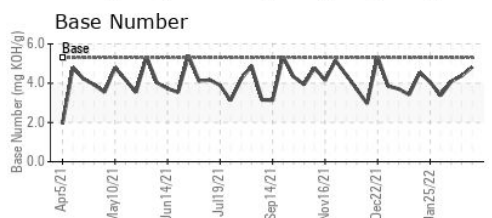
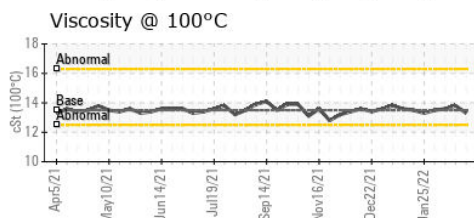
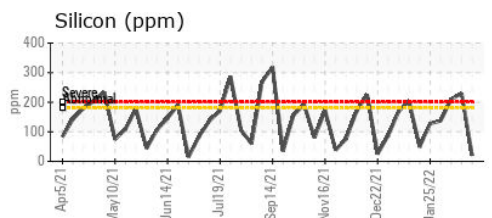
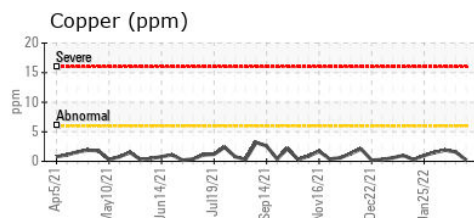
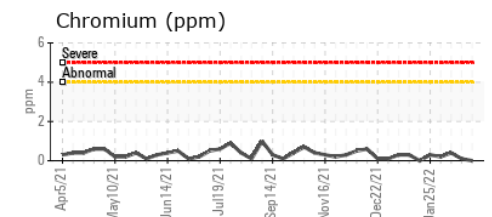
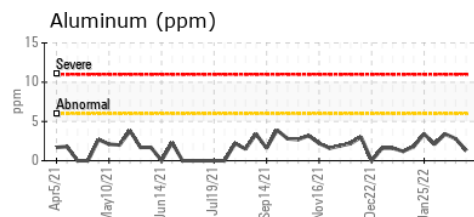
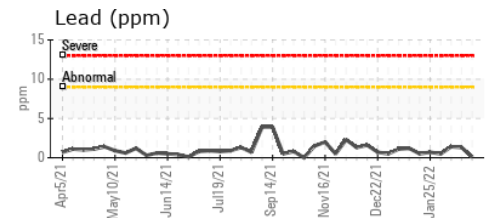
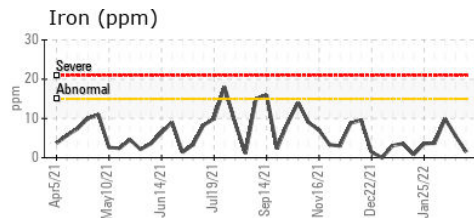


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	*ASTM D7414	>25	11.1	15.8	14.6
Acid Number (AN)	mg KOH/g	ASTM D8045		0.38	1.193	1.15
Base Number (BN)	mg KOH/g	ASTM D2896	5.3	4.82	4.38	4.08

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	13.5	13.3	13.8	13.6

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0566349
Lab Number : 05477119
Unique Number : 9866333
Test Package : MOB 2

Received : 24 Feb 2022
Tested : 25 Feb 2022
Diagnosed : 25 Feb 2022 - Aaron Black

EDL NA Recips-Zook
 Zook Powerstation, 388 E. Main Street
 Leola, PA
 US 17540-1925
 Contact: Kevin Johnson
 kevin.johnson@edlenergy.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)