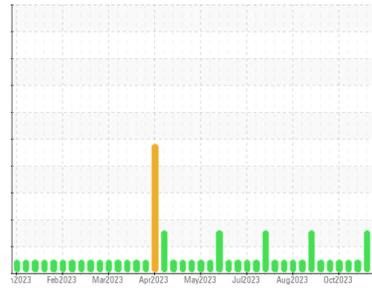




OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id
HBKM02BE
Component
Biogas Engine
Fluid
SHELL MYSELLA S5 S (48 GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: Top Up Amount: 30 GAL)

Wear

All component wear rates are normal.

Contamination

Elemental level of silicon (Si) above normal.

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		WC0775435	WC0775427	WC0775431
Sample Date	Client Info		30 Oct 2023	23 Oct 2023	16 Oct 2023
Machine Age	hrs	Client Info	102552	102414	102248
Oil Age	hrs	Client Info	1040	902	736
Oil Changed	Client Info		Oil Added	Not Changd	Oil Added
Sample Status			ABNORMAL	ABNORMAL	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	>15	7	5	2
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>6	5	4	3
Lead	ppm	ASTM D5185m	>9	0	0	0
Copper	ppm	ASTM D5185m	>6	2	1	0
Tin	ppm	ASTM D5185m	>4	5	3	3
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		4	5	4
Barium	ppm	ASTM D5185m		<1	0	<1
Molybdenum	ppm	ASTM D5185m		6	5	2
Manganese	ppm	ASTM D5185m		0	<1	0
Magnesium	ppm	ASTM D5185m		19	17	22
Calcium	ppm	ASTM D5185m		1604	1542	1535
Phosphorus	ppm	ASTM D5185m	300	357	304	334
Zinc	ppm	ASTM D5185m		457	397	416
Sulfur	ppm	ASTM D5185m		3876	2812	2915

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>181	▲ 194	▲ 182	168
Sodium	ppm	ASTM D5185m		2	2	<1
Potassium	ppm	ASTM D5185m	>20	2	<1	0

INFRA-RED

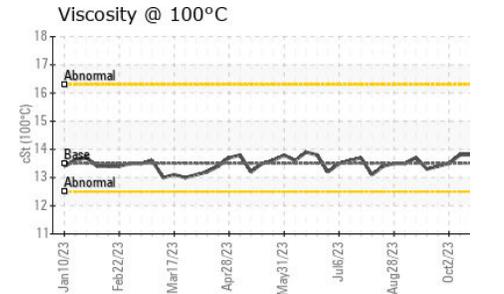
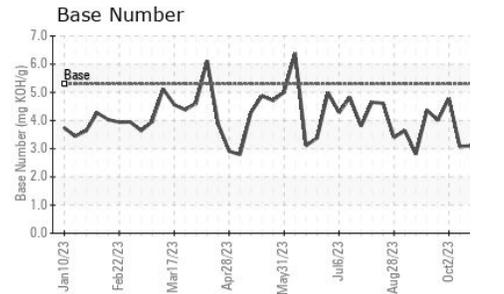
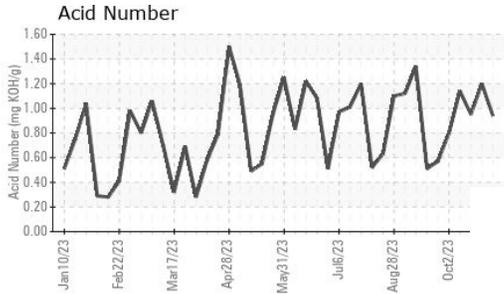
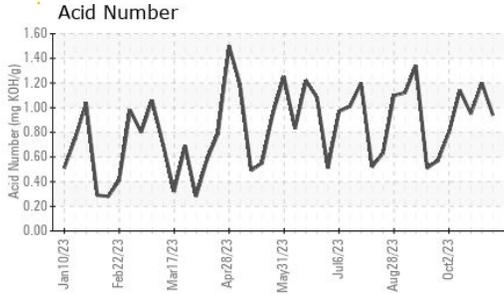
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		0	0	0
Nitration	Abs/cm	*ASTM D7624	>20	5.2	5.3	5.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.1	22.2	21.6

FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.5	15.9	15.1
Acid Number (AN)	mg KOH/g	ASTM D8045		0.94	1.20	0.95
Base Number (BN)	mg KOH/g	ASTM D2896	5.3	2.21	2.03	3.11



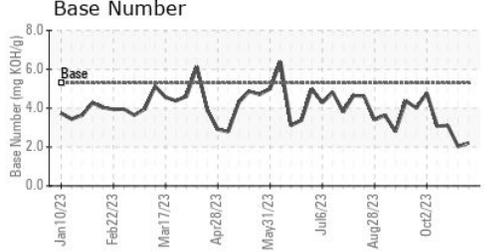
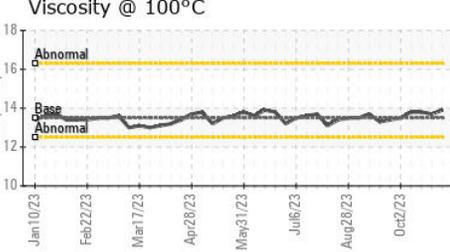
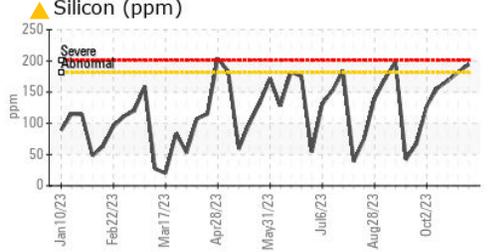
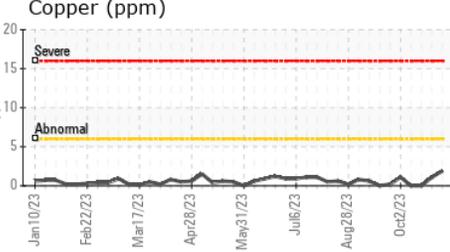
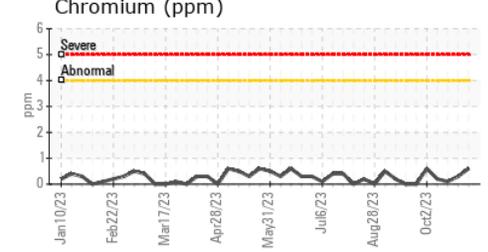
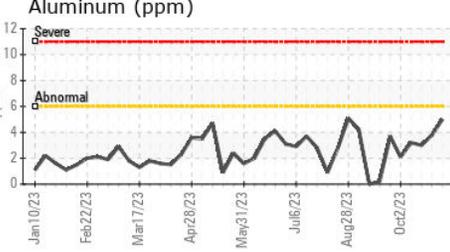
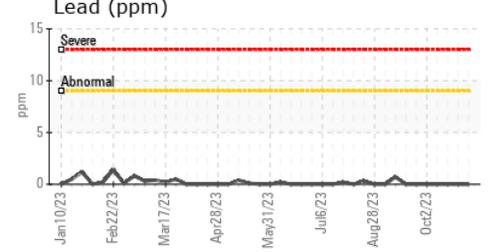
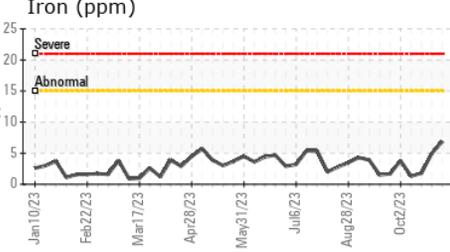
OIL ANALYSIS REPORT



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	13.5	13.9	13.7

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0775435 **Received** : 01 Nov 2023
Lab Number : 05995861 **Diagnosed** : 03 Nov 2023
Unique Number : 10724221 **Diagnostician** : Don Baldrige
Test Package : MOB 2

EDL NA Recips-Honeybrook
 Honey Brook Powerstation, 481 S. Churchtown Road
 Narvon, PA
 US 17555-9574
 Contact: Christian Adames
 Christian.Adames@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)