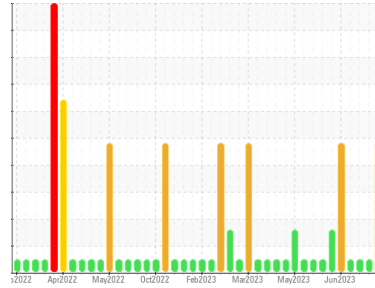




# OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id  
**HBKM01BE**  
Component  
**Biogas Engine**  
Fluid  
**SHELL MYSELLA S5 S (--- GAL)**

## DIAGNOSIS

### Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. ( 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.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0775344</b>	WC0775342	WC0775324
Sample Date	Client Info		<b>17 Jul 2023</b>	13 Jul 2023	06 Jul 2023
Machine Age	hrs	Client Info	<b>103900</b>	103804	103651
Oil Age	hrs	Client Info	<b>600</b>	508	200
Oil Changed	Client Info		<b>Oil Added</b>	Oil Added	Changed
Sample Status			<b>SEVERE</b>	NORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>15	<b>6</b>	5	4
Chromium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>6	<b>3</b>	4	3
Lead	ppm	ASTM D5185m	>9	<b>2</b>	1	0
Copper	ppm	ASTM D5185m	>6	<b>2</b>	1	<1
Tin	ppm	ASTM D5185m	>4	<b>4</b>	4	2
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		<b>6</b>	3	3
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>8</b>	8	8
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>27</b>	28	29
Calcium	ppm	ASTM D5185m		<b>1666</b>	1677	1455
Phosphorus	ppm	ASTM D5185m	300	<b>353</b>	352	322
Zinc	ppm	ASTM D5185m		<b>418</b>	441	389
Sulfur	ppm	ASTM D5185m		<b>3622</b>	3802	3371

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>181	<b>201</b>	174	112
Sodium	ppm	ASTM D5185m		<b>1</b>	0	<1
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	0	0

## INFRA-RED

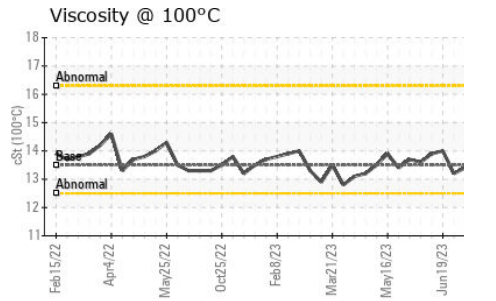
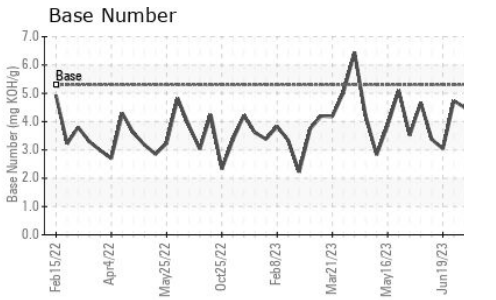
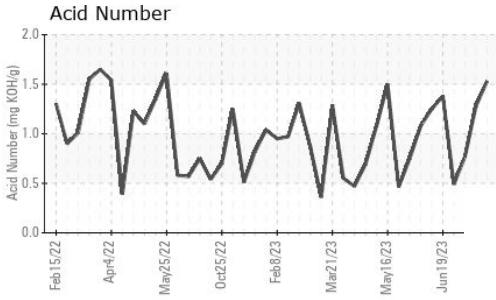
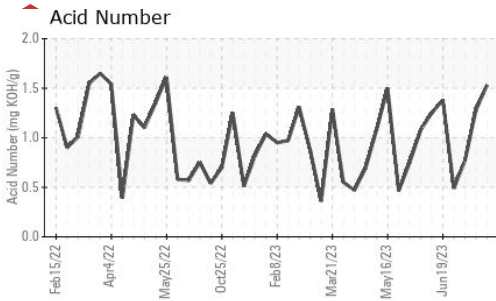
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.7</b>	5.7	4.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.9</b>	22.1	20.4

## FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.9</b>	15.7	14.2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>1.53</b>	1.28	0.77
Base Number (BN)	mg KOH/g	ASTM D2896	5.3	<b>3.13</b>	6.05	4.49



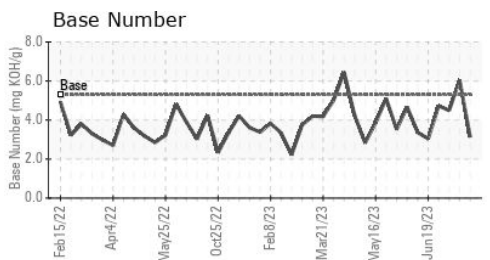
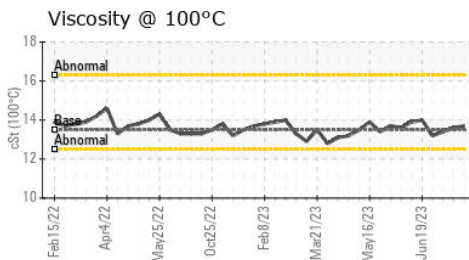
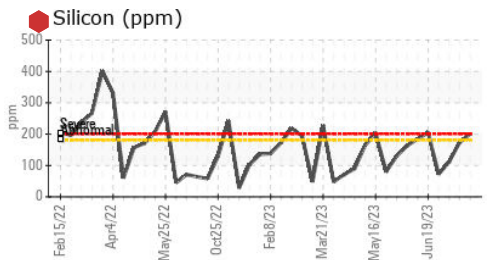
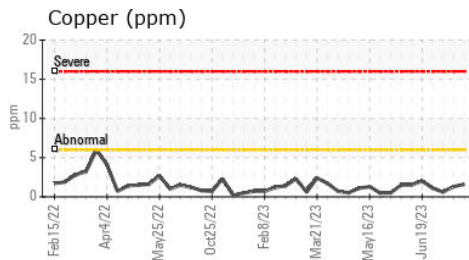
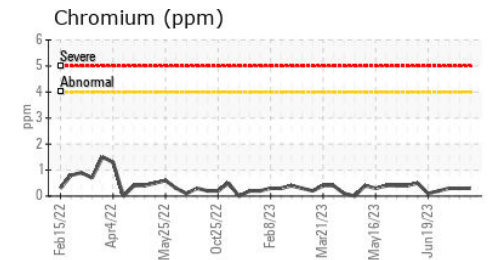
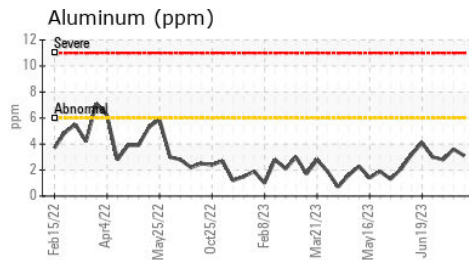
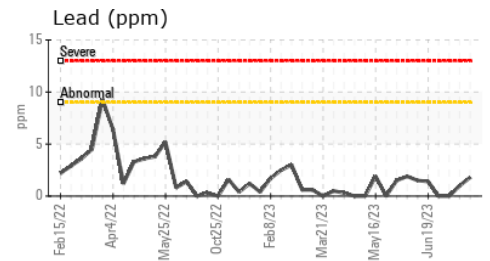
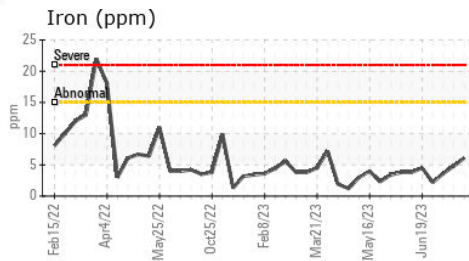
# OIL ANALYSIS REPORT



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	13.7	13.6	13.4

## GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : WC0775344 Received : 20 Jul 2023  
 Lab Number : 05903414 Diagnosed : 25 Jul 2023  
 Unique Number : 10564770 Diagnostician : Doug Bogart  
 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)

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F: