

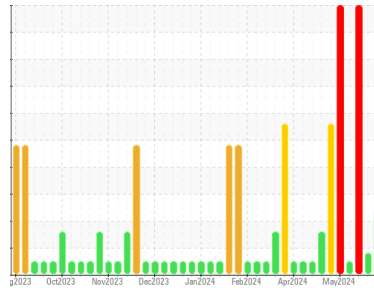


OIL ANALYSIS REPORT



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

Sample Rating Trend



DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. Please note that this is a corrected copy for laboratory data updates to add PQ.

Wear

The tin level is abnormal.

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 acceptable for the time in service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0775493	WC0775165	WC0775166
Sample Date	Client Info		10 Jun 2024	06 Jun 2024	29 May 2024
Machine Age	hrs	Client Info	110591	110498	110378
Oil Age	hrs	Client Info	489	393	276
Oil Changed	Client Info		Oil Added	Oil Added	Oil Added
Sample Status			ABNORMAL	ABNORMAL	SEVERE

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<1.0	<1.0	<1.0
Water	WC Method		NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184		19	17	---
Iron	ppm	ASTM D5185m >14	7	7	7
Chromium	ppm	ASTM D5185m >3	<1	<1	<1
Nickel	ppm	ASTM D5185m	0	0	<1
Titanium	ppm	ASTM D5185m	0	<1	<1
Silver	ppm	ASTM D5185m	0	0	<1
Aluminum	ppm	ASTM D5185m >5	3	3	▲ 5
Lead	ppm	ASTM D5185m >8	<1	<1	<1
Copper	ppm	ASTM D5185m >5	2	2	2
Tin	ppm	ASTM D5185m >3	▲ 4	▲ 4	▲ 5
Vanadium	ppm	ASTM D5185m	<1	<1	<1
Cadmium	ppm	ASTM D5185m	0	0	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	32	30	39
Barium	ppm	ASTM D5185m	0	0	2
Molybdenum	ppm	ASTM D5185m	3	4	9
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	22	19	30
Calcium	ppm	ASTM D5185m	1789	1683	2437
Phosphorus	ppm	ASTM D5185m 300	400	373	600
Zinc	ppm	ASTM D5185m	520	479	736
Sulfur	ppm	ASTM D5185m	4118	3856	5595

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >180	▲ 185	174	▲ 226
Sodium	ppm	ASTM D5185m >20	2	3	<1
Potassium	ppm	ASTM D5185m >20	<1	<1	2

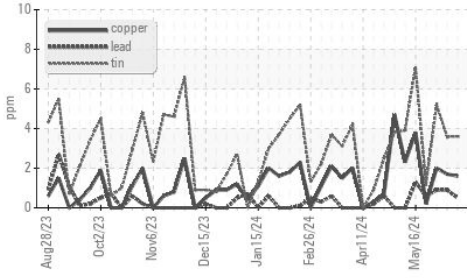
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	4.7	4.4	4.9
Sulfation	Abs/.1mm	*ASTM D7415	20.6	20.2	26.1

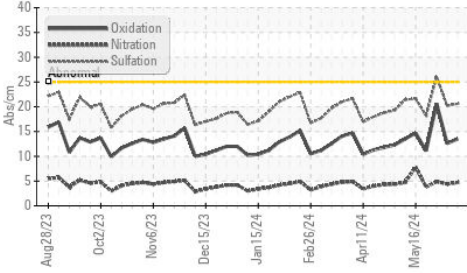


OIL ANALYSIS REPORT

Non-ferrous Metals



FT-IR (Direct Trend)



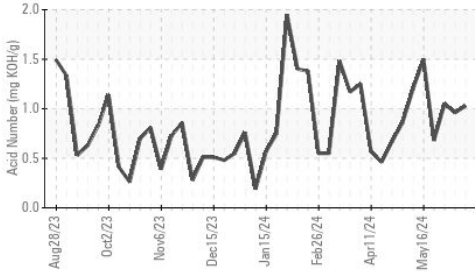
FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs./1mm	*ASTM D7414	13.5	12.6	20.6
Acid Number (AN)	mg KOH/g	ASTM D8045	1.03	0.96	1.05
Base Number (BN)	mg KOH/g	ASTM D2896 5.3	3.27	3.46	3.56

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	NEG	NEG	NEG
Free Water	scalar	*Visual	NEG	NEG	NEG

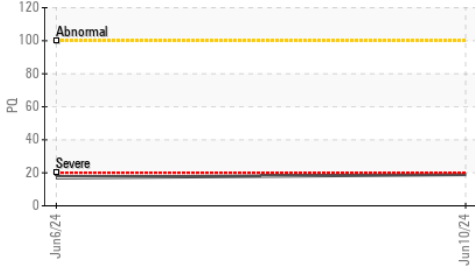
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445 13.5	13.8	13.4	13.4

GRAPHS

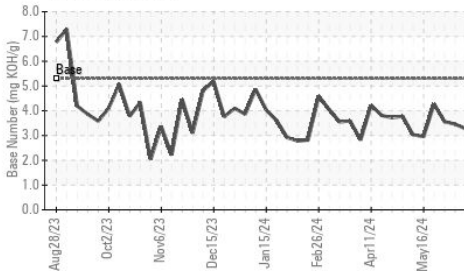
Acid Number



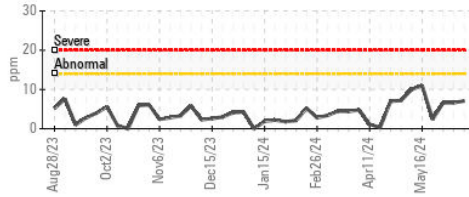
PQ



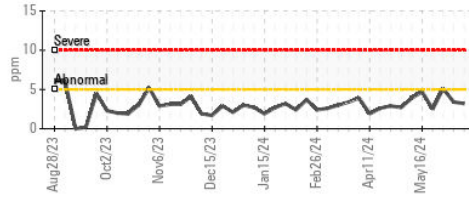
Base Number



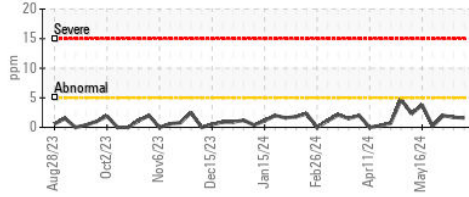
Iron (ppm)



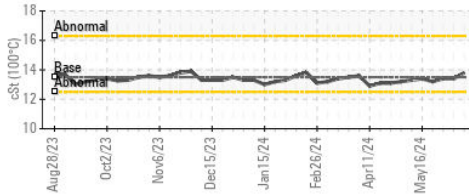
Aluminum (ppm)



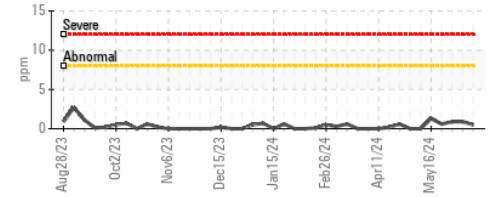
Copper (ppm)



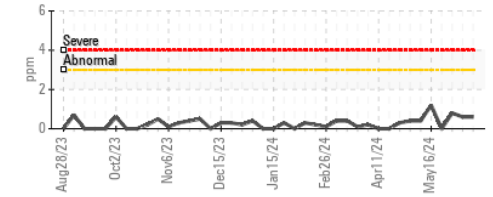
Viscosity @ 100°C



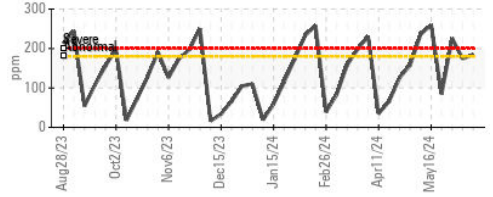
Lead (ppm)



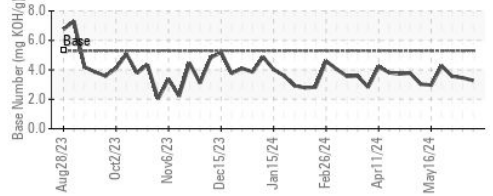
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

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

Sample No. : WC0775493

Lab Number : 06207996

Unique Number : 11075457

Test Package : MOB 2 (Additional Tests: PQ)

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)

Received : 12 Jun 2024

Tested : 14 Jun 2024

Diagnosed : 19 Jun 2024 - Jonathan Hester

EDL NA Recips-Honeybrook

Honey Brook Powerstation, 481 S. Churchtown Road

Narvon, PA

US 17555-9574

Contact: Christian Adames

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