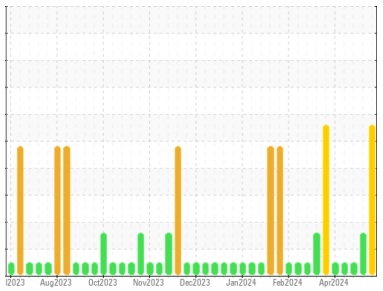
OIL ANALYSIS REPORT

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 and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition. (Customer Sample Comment: Top Up Amount: 30 GAL)

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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0775173**	WC0775182	WC0775178
Sample Date		Client Info		**10 May 2024**	29 Apr 2024	25 Apr 2024
Machine Age	hrs	Client Info		**109935**	109759	109663
Oil Age	hrs	Client Info		**545**	369	273
Oil Changed		Client Info		**Oil Added**	Oil Added	Oil Added
Sample Status				**SEVERE**	ABNORMAL	NORMAL

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
Iron	ppm	ASTM D5185m	>14	**10**	7	7
Chromium	ppm	ASTM D5185m	>3	**<1**	<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	>5	**4**	3	3
Lead	ppm	ASTM D5185m	>8	**0**	0	<1
Copper	ppm	ASTM D5185m	>5	**2**	▲ 5	<1
Tin	ppm	ASTM D5185m	>3	▲ **4**	▲ 4	2
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		**0**	7	6
Barium	ppm	ASTM D5185m		**0**	<1	0
Molybdenum	ppm	ASTM D5185m		**8**	8	7
Manganese	ppm	ASTM D5185m		**0**	1	0
Magnesium	ppm	ASTM D5185m		**24**	24	24
Calcium	ppm	ASTM D5185m		**1723**	1526	1537
Phosphorus	ppm	ASTM D5185m	300	**352**	337	341
Zinc	ppm	ASTM D5185m		**441**	413	424
Sulfur	ppm	ASTM D5185m		**3558**	3321	3435

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>180	▲ **236**	158	126
Sodium	ppm	ASTM D5185m	>20	**3**	2	1
Potassium	ppm	ASTM D5185m	>20	**0**	0	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0	0
Nitration	Abs/cm	*ASTM D7624		**4.7**	4.4	4.3
Sulfation	Abs/.1mm	*ASTM D7415		**21.4**	19.3	18.8

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**13.5**	12.3	11.8
Acid Number (AN)	mg KOH/g	ASTM D8045		**1.20**	0.86	0.67
Base Number (BN)	mg KOH/g	ASTM D2896	5.3	**3.03**	3.78	3.72

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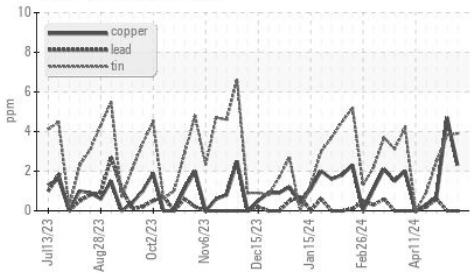
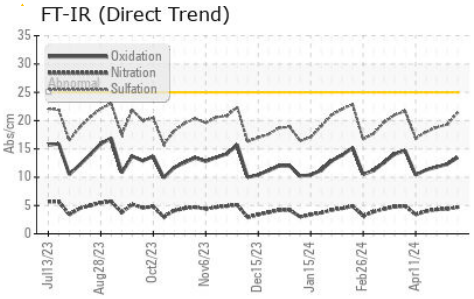
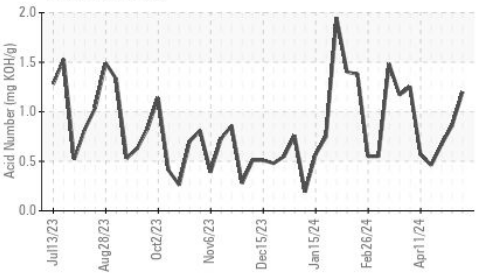
Non-ferrous Metals



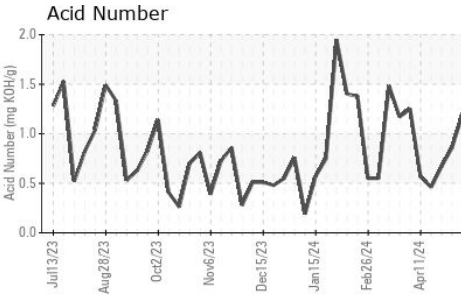
FT-IR (Direct Trend)



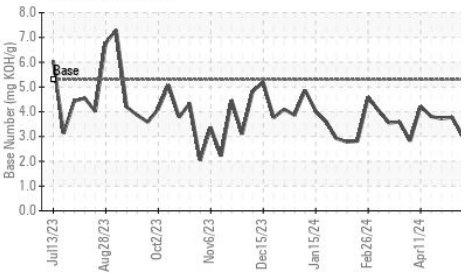
Acid Number



Acid Number



Base Number

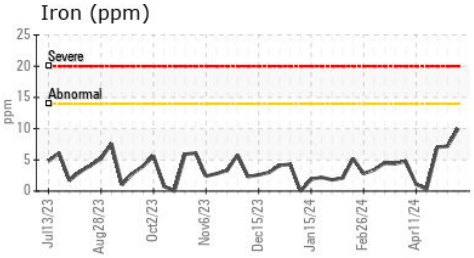


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

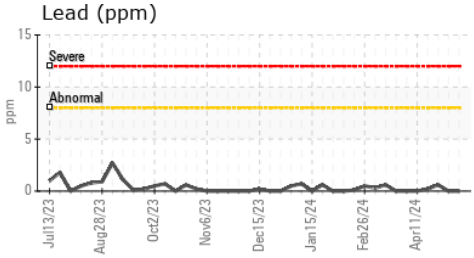
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.5	**13.3**	13.2	13.1

GRAPHS

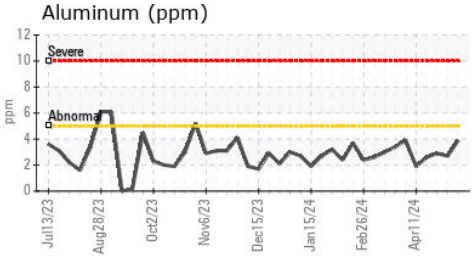
Iron (ppm)



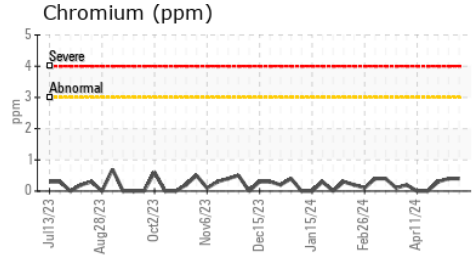
Lead (ppm)



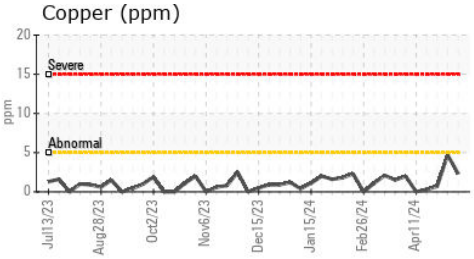
Aluminum (ppm)



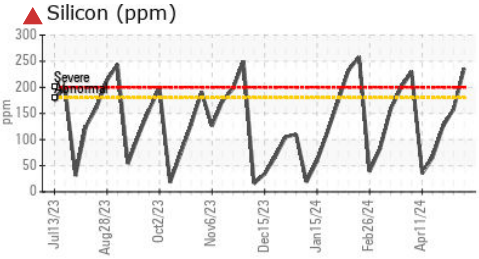
Chromium (ppm)



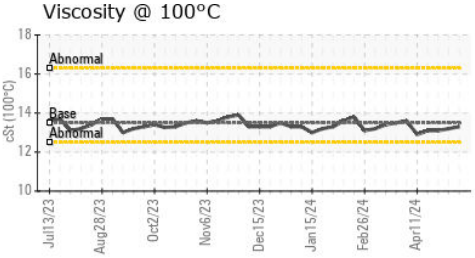
Copper (ppm)



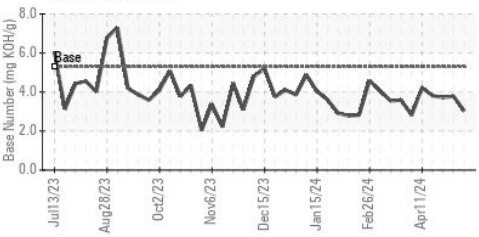
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0775173
Lab Number : 06178991
Unique Number : 11030317
Test Package : MOB 2

Received : 14 May 2024
Tested : 15 May 2024
Diagnosed : 16 May 2024 - Don Baldridge

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

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)

Report Id: EDLNAR [WUSCAR] 06178991 (Generated: 05/16/2024 17:49:18) Rev: 1

Submitted By: Samantha Gauger