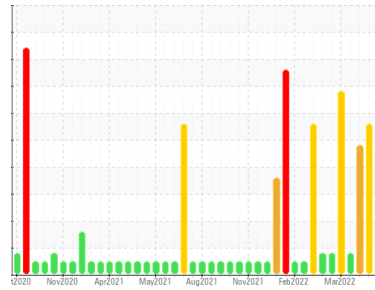




OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id
LORM03BE (S/N 220-7240)

Component
Biogas Engine

Fluid
CHEVRON HDAX 6500 LFG GAS ENGINE OIL (220 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.

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		WC0679196	WC0679269	WC0666996
Sample Date	Client Info		22 Sep 2022	11 May 2022	29 Apr 2022
Machine Age	hrs	Client Info	0	133902	133902
Oil Age	hrs	Client Info	0	131607	131607
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			SEVERE	SEVERE	SEVERE

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	8	11	8
Chromium	ppm	ASTM D5185m		<1	1	<1
Nickel	ppm	ASTM D5185m		<1	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	2	0
Aluminum	ppm	ASTM D5185m	>5	3	6	5
Lead	ppm	ASTM D5185m		4	2	1
Copper	ppm	ASTM D5185m		2	21	6
Tin	ppm	ASTM D5185m	>20	6	8	7
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	5	2
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		2	4	4
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		16	21	24
Calcium	ppm	ASTM D5185m		1755	1806	1909
Phosphorus	ppm	ASTM D5185m		307	330	352
Zinc	ppm	ASTM D5185m		365	406	425
Sulfur	ppm	ASTM D5185m		3150	2347	2523

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>181	228	234	233
Sodium	ppm	ASTM D5185m		<1	270	345
Potassium	ppm	ASTM D5185m	>20	0	0	1

INFRA-RED

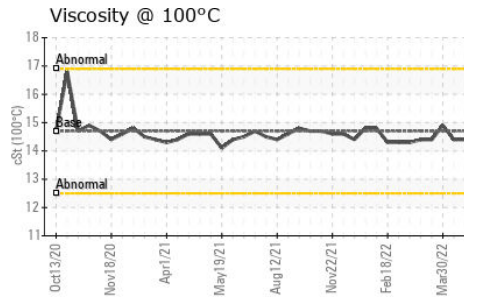
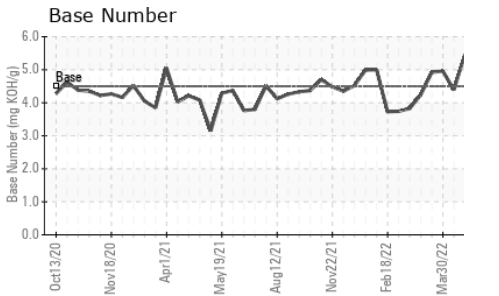
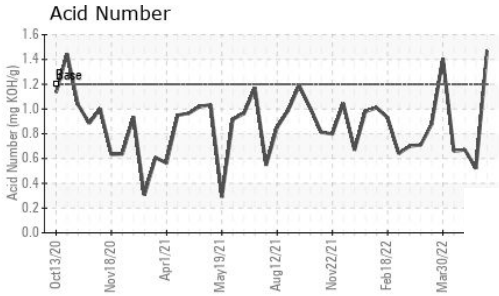
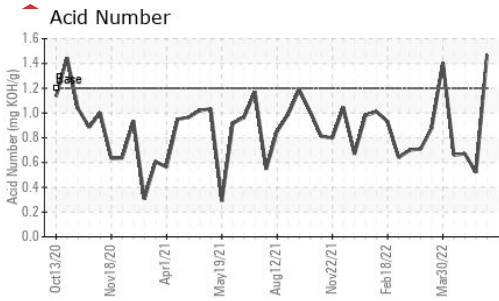
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	6.2	4.7	5
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.0	18.9	19.4

FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.2	9.2	9.9
Acid Number (AN)	mg KOH/g	ASTM D8045	1.2	1.47	0.52	0.67
Base Number (BN)	mg KOH/g	ASTM D2896	4.5	3.07	5.16	5.46



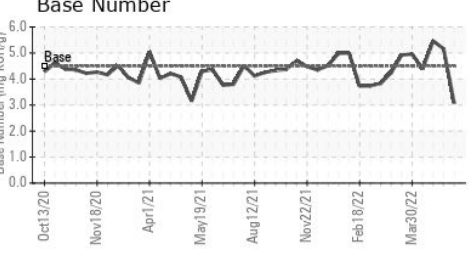
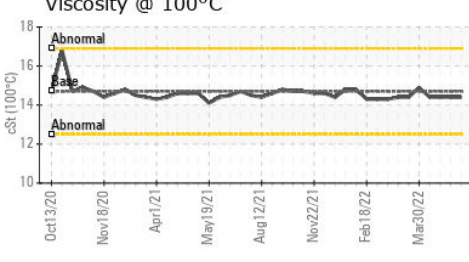
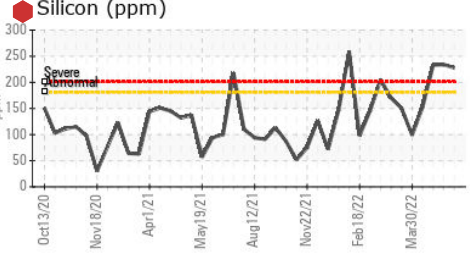
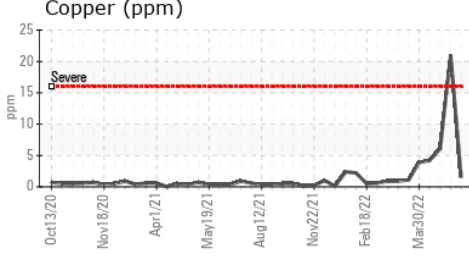
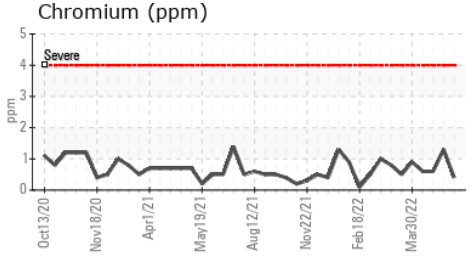
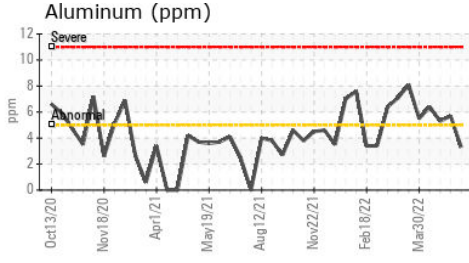
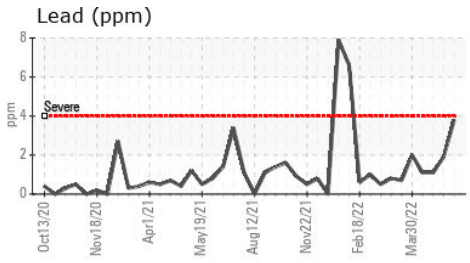
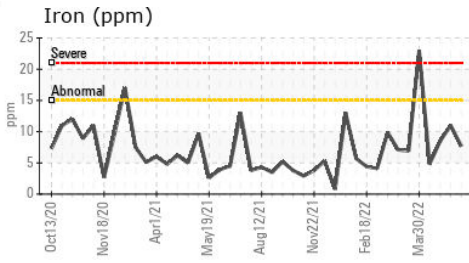
OIL ANALYSIS REPORT



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	14.7	14.4	14.4

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0679196 **Received** : 23 Sep 2022
Lab Number : 05649846 **Diagnosed** : 27 Sep 2022
Unique Number : 10149398 **Diagnostician** : Angela Borella
Test Package : MOB 2

EDL NA Recips-Lorain
 LORAIN POWER STATION, 43550 OBERLIN-ELYRIA ROAD
 OBERLIN, OH
 US 44074
 Contact: Kent Bridgett
 Kent.Bridgett@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)