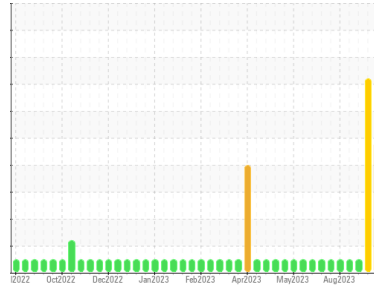




OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id
WVTM03BE
Component
Biogas Engine
Fluid
CHEVRON HDAX 6500 LFG GAS ENGINE OIL (--- GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. (Customer Sample Comment: Oil and oil filters changed)

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		WC0785393	WC0785394	WC0785380
Sample Date	Client Info		30 Oct 2023	24 Oct 2023	12 Oct 2023
Machine Age	hrs	Client Info	31848	31707	31417
Oil Age	hrs	Client Info	1182	1041	751
Oil Changed	Client Info		Changed	Not Changd	Not Changd
Sample Status			SEVERE	SEVERE	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	13	10	9
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	3	2	1
Lead	ppm	ASTM D5185m	>9	<1	<1	0
Copper	ppm	ASTM D5185m	>14	3	3	4
Tin	ppm	ASTM D5185m	>4	6	5	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		<1	2	1
Barium	ppm	ASTM D5185m		<1	0	0
Molybdenum	ppm	ASTM D5185m		2	2	2
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		15	13	5
Calcium	ppm	ASTM D5185m		1761	1667	1600
Phosphorus	ppm	ASTM D5185m		271	232	205
Zinc	ppm	ASTM D5185m		340	294	241
Sulfur	ppm	ASTM D5185m		4310	3339	2864

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>181	220	201	169
Sodium	ppm	ASTM D5185m		2	3	2
Potassium	ppm	ASTM D5185m	>20	2	<1	0

INFRA-RED

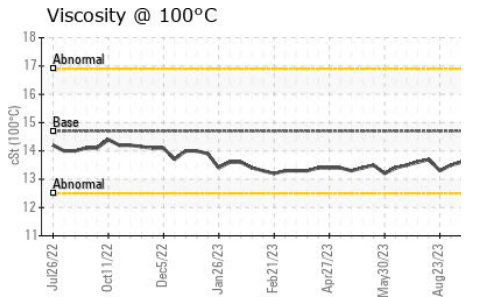
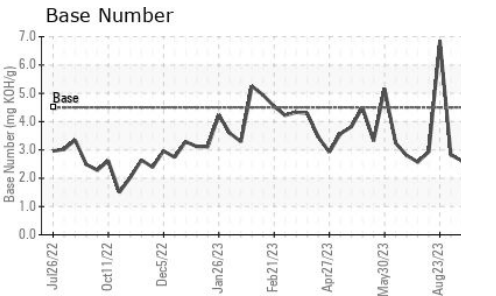
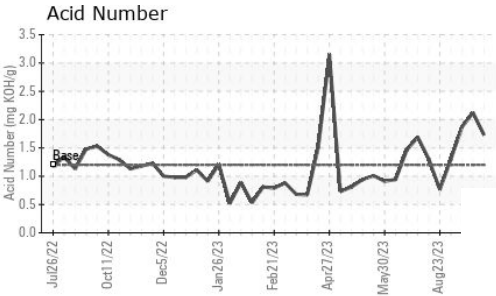
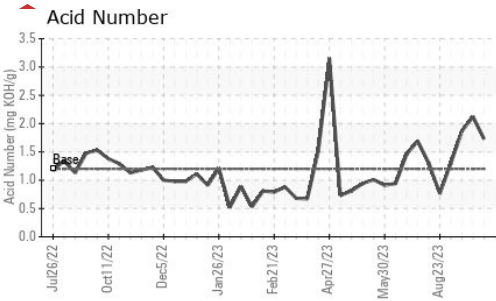
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		0	0	0
Nitration	Abs/cm	*ASTM D7624	>20	5.1	5.1	5.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.3	24.7	23.3

FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.7	12.4	11.5
Acid Number (AN)	mg KOH/g	ASTM D8045	1.2	1.73	2.12	1.87
Base Number (BN)	mg KOH/g	ASTM D2896	4.5	4.52	2.04	2.61



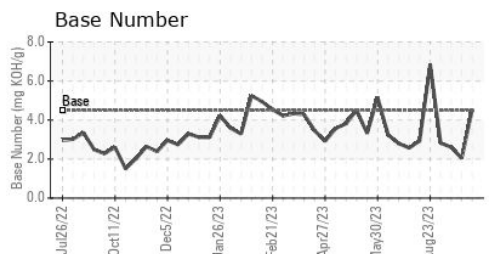
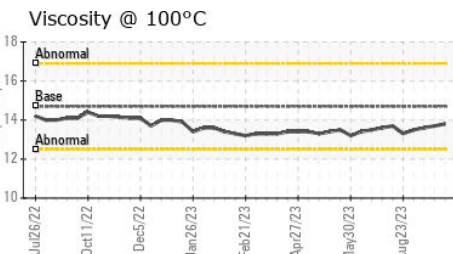
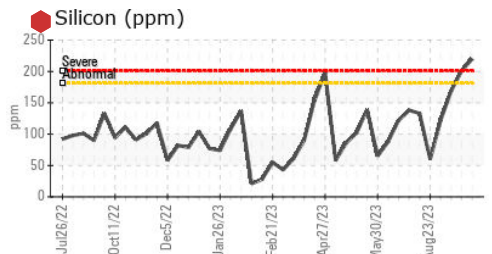
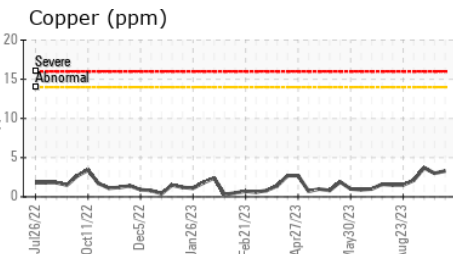
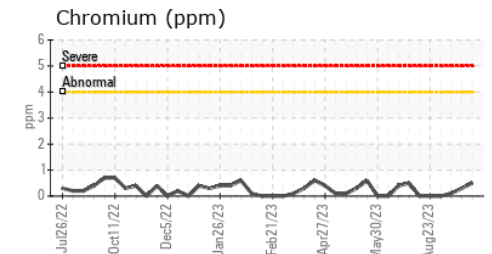
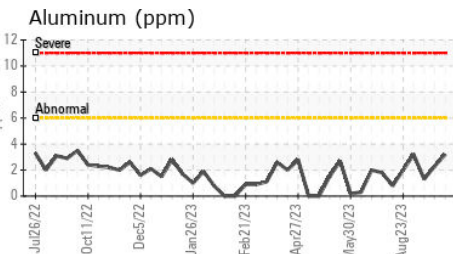
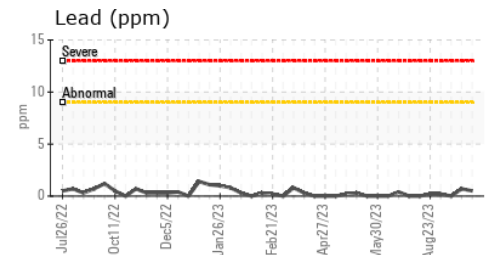
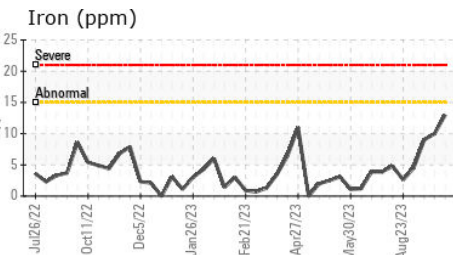
OIL ANALYSIS REPORT



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	13.8	13.7

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0785393 **Received** : 01 Nov 2023
Lab Number : 05995862 **Diagnosed** : 03 Nov 2023
Unique Number : 10724222 **Diagnostician** : Don Baldrige
Test Package : MOB 2

EDL NA Recips-Watervliet
 Watervliet Powerstation, 3563 Hennessey Road
 Watervliet, MI
 US 49098
 Contact: Scott Eastman
 scott.eastman@edlenergy.com
 T:
 F:

Certificate L2367
 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)