

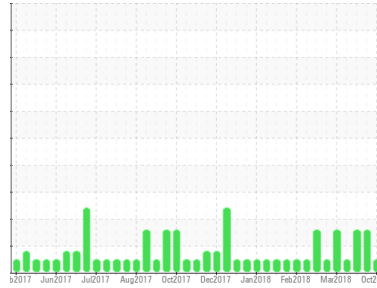


OIL ANALYSIS REPORT



Machine Id
BRCM03BE (S/N 6ZJ00395)
 Component
Biogas Engine
 Fluid
CHEVRON HDAX 6500 LFG GAS ENGINE OIL (150 GAL)

Sample Rating Trend



NORMAL



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

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 suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WCM2319547	WCM2319540	WCM2319543
Sample Date	Client Info		24 Oct 2018	15 Jun 2018	15 Jun 2018
Machine Age	hrs	Client Info	53269	9081	656
Oil Age	hrs	Client Info	100	600	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	ABNORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<1.0	<1.0	<1.0
Water	WC Method	>0.1	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >45	4	9	4
Chromium	ppm	ASTM D5185m >2	<1	<1	<1
Nickel	ppm	ASTM D5185m >2	<1	2	0
Titanium	ppm	ASTM D5185m	<1	0	0
Silver	ppm	ASTM D5185m	<1	0	0
Aluminum	ppm	ASTM D5185m >10	<1	3	3
Lead	ppm	ASTM D5185m >5	<1	1	▲ 10
Copper	ppm	ASTM D5185m >14	3	8	▲ 43
Tin	ppm	ASTM D5185m >13	0	3	<1
Antimony	ppm	ASTM D5185m	3	46	15
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	9	4	6
Barium	ppm	ASTM D5185m	<1	0	<1
Molybdenum	ppm	ASTM D5185m	4	4	4
Manganese	ppm	ASTM D5185m	<1	<1	2
Magnesium	ppm	ASTM D5185m	33	8	14
Calcium	ppm	ASTM D5185m	1493	1391	1302
Phosphorus	ppm	ASTM D5185m	277	253	271
Zinc	ppm	ASTM D5185m	341	350	332
Sulfur	ppm	ASTM D5185m	2037	2212	1901

CONTAMINANTS

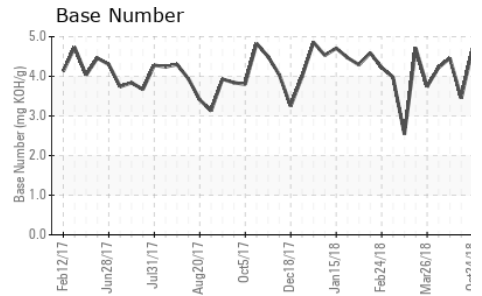
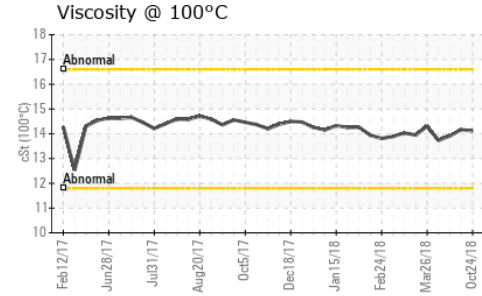
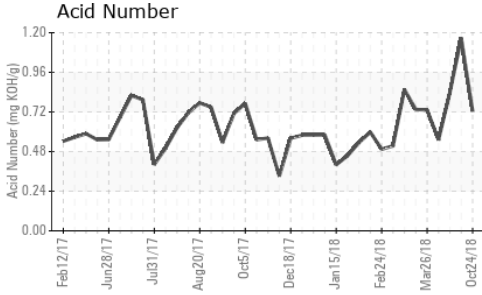
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >200	25	▲ 248	75
Sodium	ppm	ASTM D5185m	4	2	12
Potassium	ppm	ASTM D5185m >20	11	0	3

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0	0	0
Nitration	Abs/cm	*ASTM D7624 >20	3.3	4.8	4.
Sulfation	Abs./1mm	*ASTM D7415 >30	15.1	20.1	13.



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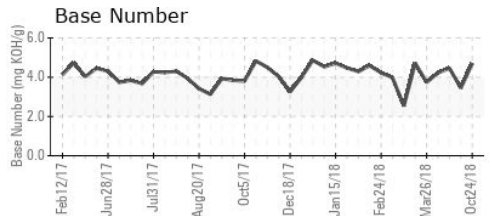
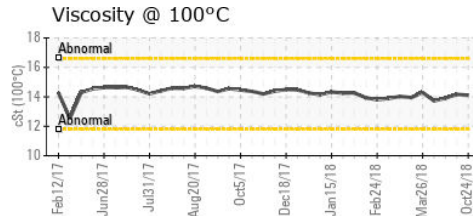
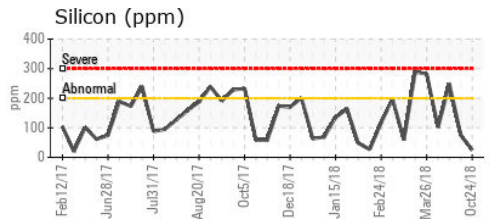
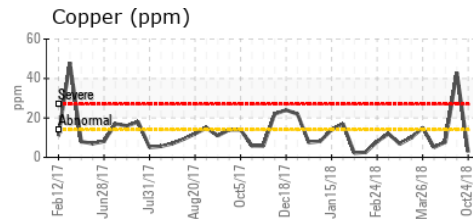
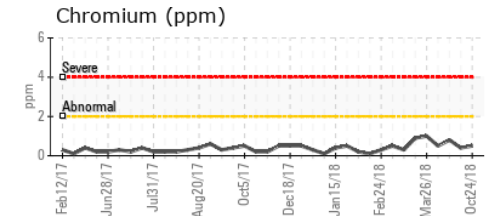
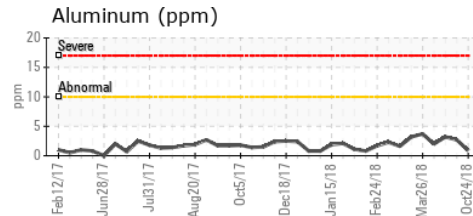
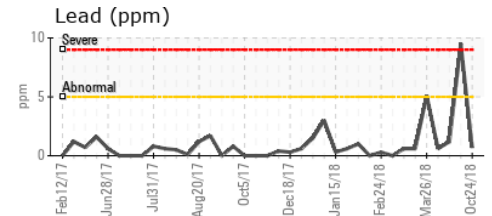
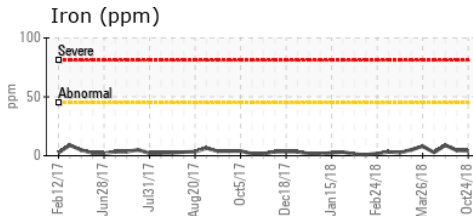


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	*ASTM D7414	>25	7.7	11.3	9.
Acid Number (AN)	mg KOH/g	ASTM D8045		0.725	1.168	0.839
Base Number (BN)	mg KOH/g	ASTM D2896		4.69	3.45	4.46

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	14.11	14.17	13.91

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WCM2319547
 Lab Number : 04579242
 Unique Number : 8378159
 Test Package : MOB 2

Received : 25 Oct 2018
 Tested : 26 Oct 2018
 Diagnosed : 26 Oct 2018 - Don Baldrige

EDL NA Recips-Brown County
 BROWN COUNTY POWER STATION, 9427 BEYERS RD
 GEORGETOWN, OH
 US 45121

Contact: MITCHELL BUTLER
 Mitchell.Butler@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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