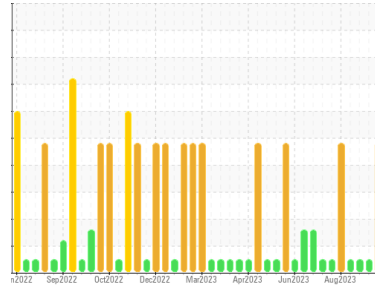




# OIL ANALYSIS REPORT

Sample Rating Trend



**DIRT**



Machine Id  
**Brent Run CAT 4 BRRM04BE**  
 Component  
**Biogas Engine**  
 Fluid  
**CHEVRON HDAX 6500 LFG GAS ENGINE OIL (--- 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. ( Customer Sample Comment: 800 hour sample )

### 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		<b>WC0776777</b>	WC0776781	WC0663710
Sample Date	Client Info		<b>12 Oct 2023</b>	04 Oct 2023	21 Sep 2023
Machine Age	hrs	Client Info	<b>103624</b>	103457	103169
Oil Age	hrs	Client Info	<b>770</b>	603	315
Oil Changed	Client Info		<b>Not Chngd</b>	Not Chngd	Not Chngd
Sample Status			<b>SEVERE</b>	NORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>15	<b>3</b>	3	7
Chromium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	0	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	2
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>6	<b>2</b>	<1	3
Lead	ppm	ASTM D5185m	>9	<b>&lt;1</b>	<1	<1
Copper	ppm	ASTM D5185m	>6	<b>&lt;1</b>	2	3
Tin	ppm	ASTM D5185m	>4	<b>4</b>	3	4
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		<b>1</b>	<1	0
Barium	ppm	ASTM D5185m		<b>3</b>	0	1
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>14</b>	11	8
Calcium	ppm	ASTM D5185m		<b>1877</b>	1862	1795
Phosphorus	ppm	ASTM D5185m		<b>298</b>	281	257
Zinc	ppm	ASTM D5185m		<b>376</b>	342	329
Sulfur	ppm	ASTM D5185m		<b>3085</b>	2700	2518

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>181	<b>204</b>	166	174
Sodium	ppm	ASTM D5185m		<b>1</b>	<1	0
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	0	2

## INFRA-RED

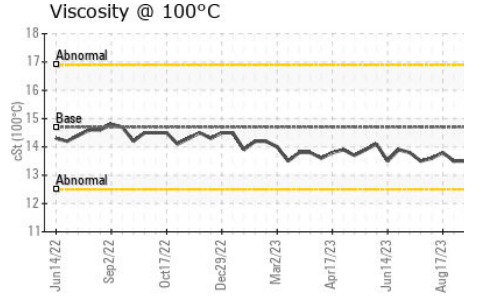
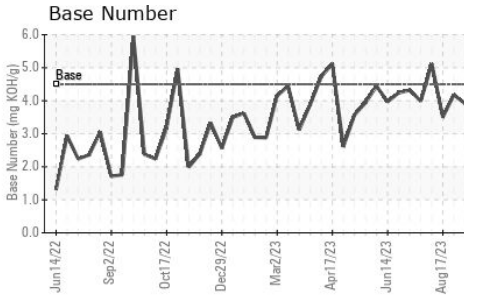
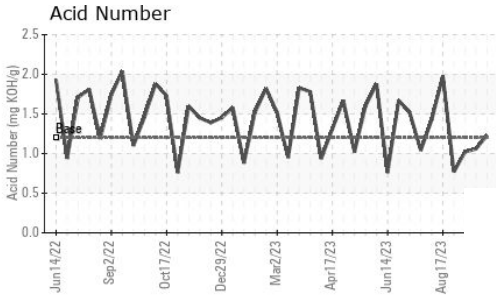
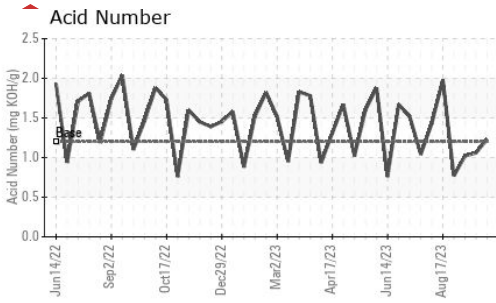
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		<b>0.1</b>	0	0
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.1</b>	5.9	5.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.9</b>	20.4	19.1

## FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.8</b>	12.6	10.9
Acid Number (AN)	mg KOH/g	ASTM D8045	1.2	<b>1.23</b>	1.06	1.02
Base Number (BN)	mg KOH/g	ASTM D2896	4.5	<b>3.50</b>	4.30	3.91



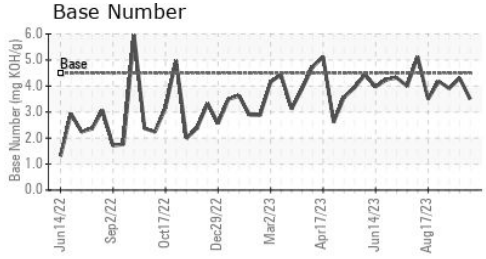
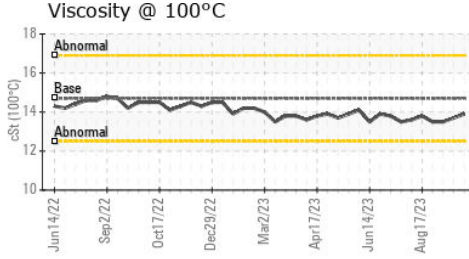
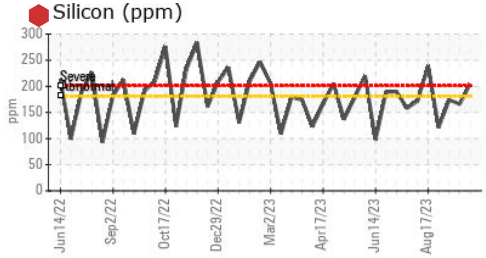
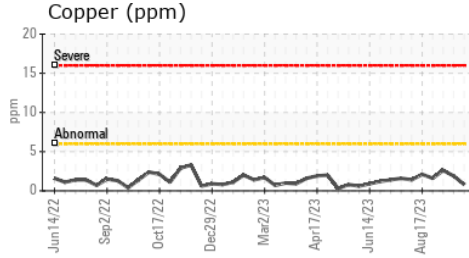
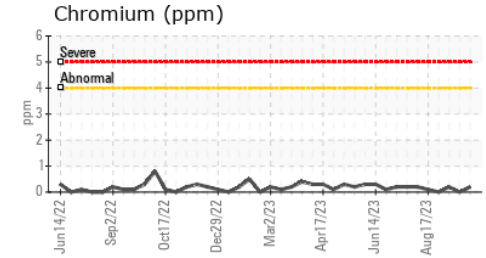
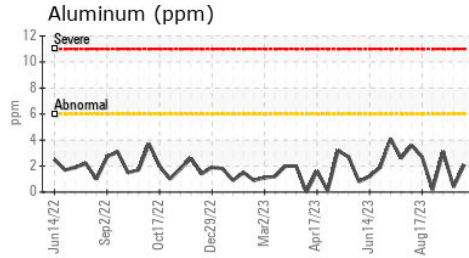
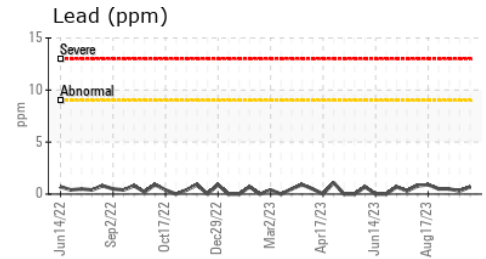
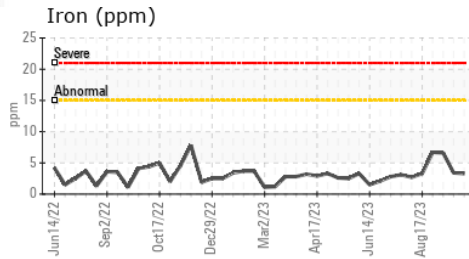
# OIL ANALYSIS REPORT



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	13.9	13.7

### GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0776777 **Received** : 17 Oct 2023  
**Lab Number** : 05982000 **Diagnosed** : 19 Oct 2023  
**Unique Number** : 10699295 **Diagnostician** : Sean Felton  
**Test Package** : MOB 2

**EDL NA Recips-Brent Run**  
 Brent Run Power Station, 8383 Vienna Road  
 Montrose, MI  
 US 48457-9141  
 Contact: Rob Stewart  
 Rob.Stewart@energydevelopments.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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F: