



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**E-1 - RICHLAND CREEK**

Component  
**Biogas Engine**

Fluid  
**MAHLER Q8 Mahler G8 SAE 40 (--- GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0880396</b>	WC0880357	WC0880366
Sample Date		Client Info		<b>10 Jan 2024</b>	03 Jan 2024	26 Dec 2023
Machine Age	hrs	Client Info		<b>42810</b>	42651	42512
Oil Age	hrs	Client Info		<b>271</b>	112	2669
Filter Age	hrs	Client Info		<b>446</b>	287	148
Oil Changed		Client Info		<b>Not Changd</b>	N/A	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	N/A	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>45	<b>3</b>	8	18
Chromium	ppm	ASTM D5185m	>2	<b>0</b>	<1	2
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>10	<b>2</b>	2	8
Lead	ppm	ASTM D5185m	>5	<b>0</b>	1	2
Copper	ppm	ASTM D5185m	>14	<b>&lt;1</b>	2	8
Tin	ppm	ASTM D5185m	>13	<b>&lt;1</b>	4	10
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

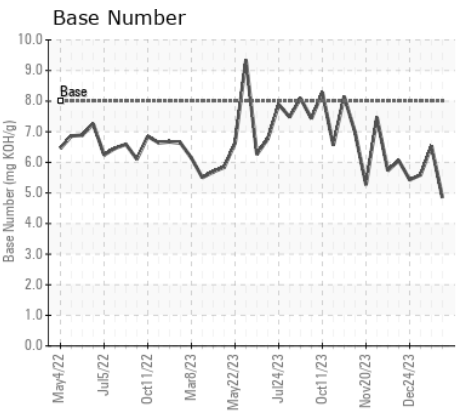
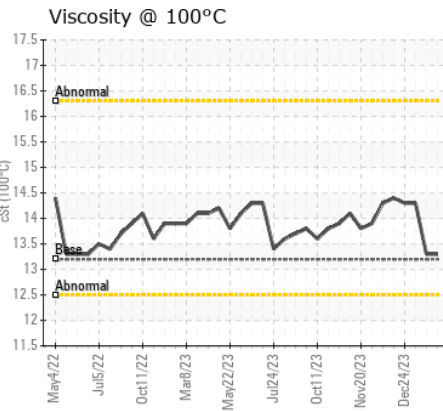
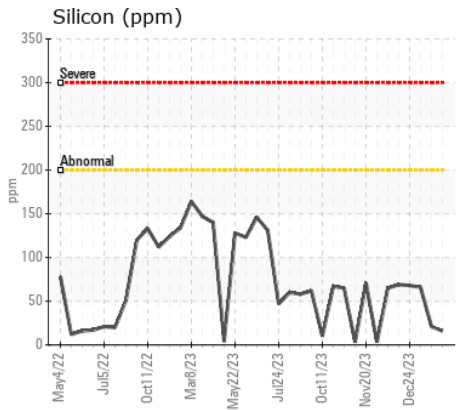
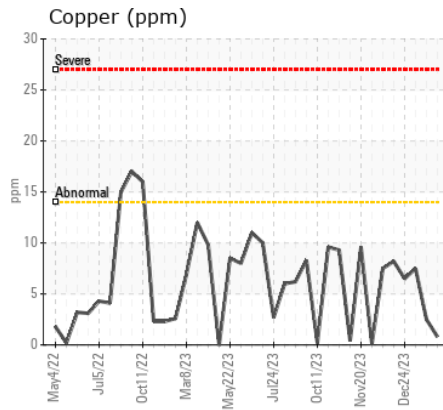
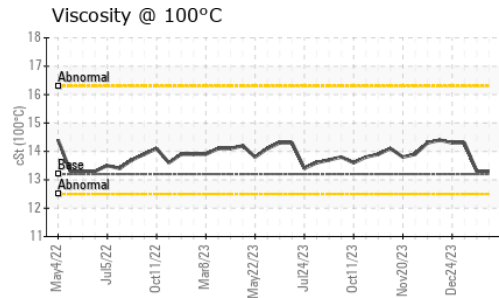
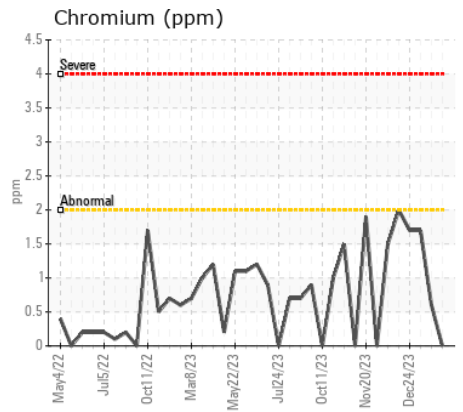
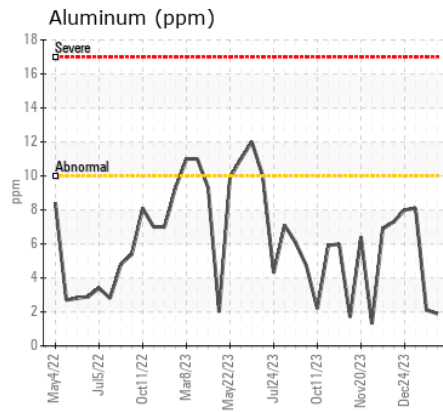
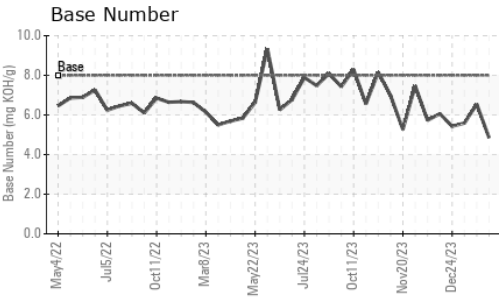
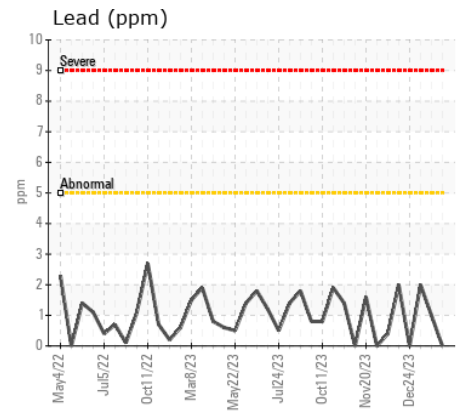
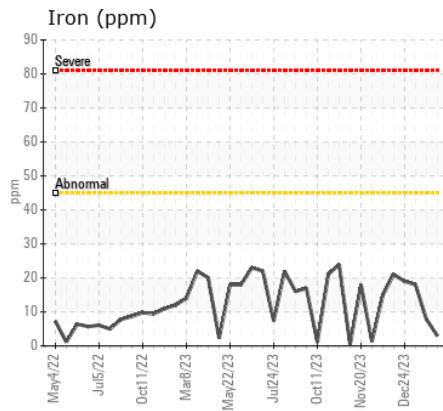
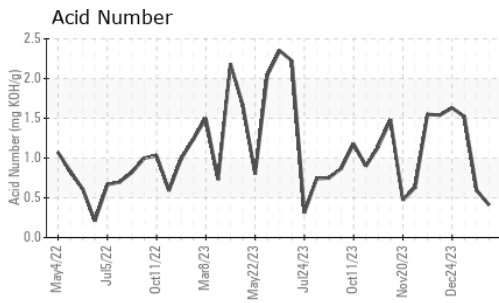
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>200	<b>16</b>	21	66
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	7	20
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0</b>	0	0
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.2</b>	6.1	9.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>15.3</b>	15.8	20.3
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	NEG	NEG

**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.

Sodium	ppm	ASTM D5185m		<b>4</b>	10	53
Boron	ppm	ASTM D5185m		<b>0</b>	<1	3
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	2	<1
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>3</b>	5	13
Calcium	ppm	ASTM D5185m		<b>1466</b>	1678	2380
Phosphorus	ppm	ASTM D5185m		<b>392</b>	407	435
Zinc	ppm	ASTM D5185m		<b>425</b>	468	528
Sulfur	ppm	ASTM D5185m		<b>2119</b>	2338	2576
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>10.5</b>	11.0	17.3
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.41</b>	0.59	1.52
Base Number (BN)	mg KOH/g	ASTM D2896	8.0	<b>4.85</b>	6.54	5.59
Visc @ 100°C	cSt	ASTM D445	13.2	<b>13.3</b>	13.3	14.3



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0880396 **Received** : 17 Jan 2024  
**Lab Number** : 06063771 **Diagnosed** : 20 Jan 2024  
**Unique Number** : 10835153 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 2

**CUBE DISTRICT ENERGY - MAS GEORGIA LFG PLANT SITE**  
 5691 S RICHLAND CREEK RD  
 BUFORD, GA  
 US 30518  
 Contact: RYAN INGALLS  
 ryan.ingalls@cubedistrictenergy.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)

T:  
F: