



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id  
**JENBACHER E1**  
 Component  
**Biogas Engine**  
 Fluid  
**CONOCO EL MAR LA4 EXD (180 GAL)**

## RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0896468</b>	WC0896457	WC0896453
Sample Date		Client Info		<b>17 Jun 2024</b>	01 Jun 2024	22 May 2024
Machine Age	hrs	Client Info		<b>27306</b>	27066	26860
Oil Age	hrs	Client Info		<b>6908</b>	6668	6462
Filter Age	hrs	Client Info		<b>6908</b>	6668	6462
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Sample Status				<b>ABNORMAL</b>	NORMAL	ABNORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	<b>6</b>	4	5
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>5	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>15	<b>8</b>	8	8
Lead	ppm	ASTM D5185m	>20	<b>3</b>	3	4
Copper	ppm	ASTM D5185m	>15	<b>1</b>	1	1
Tin	ppm	ASTM D5185m	>5	<b>&lt;1</b>	1	2
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

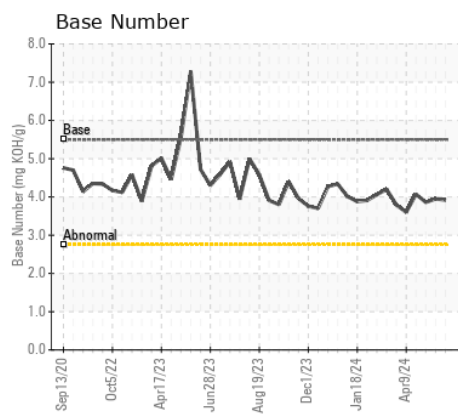
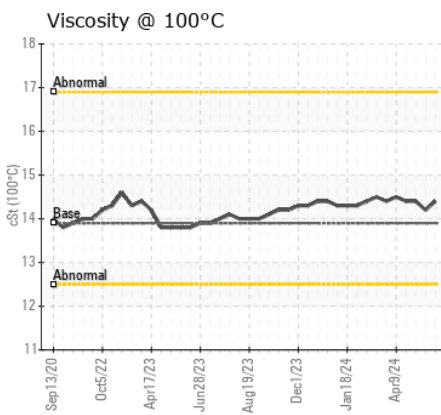
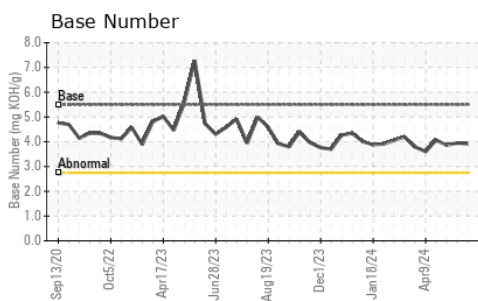
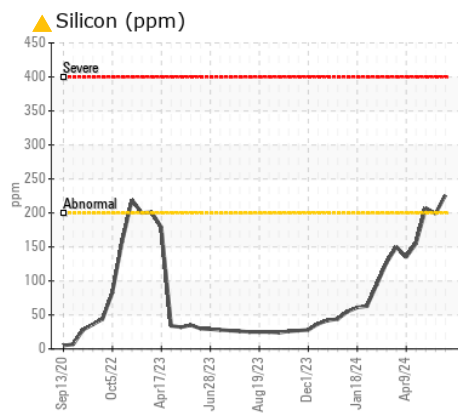
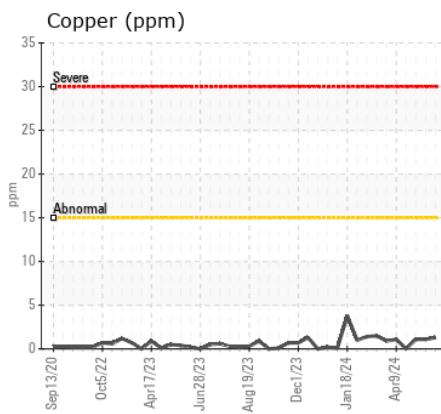
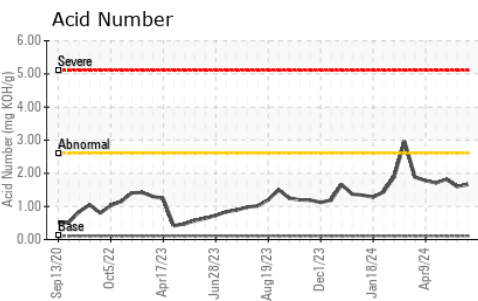
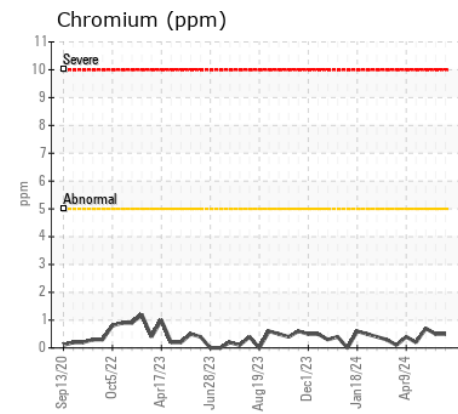
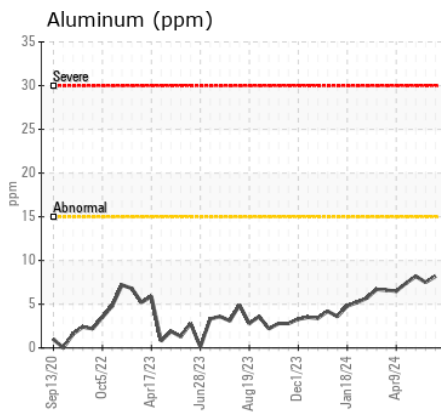
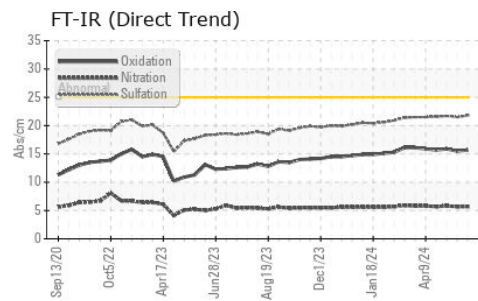
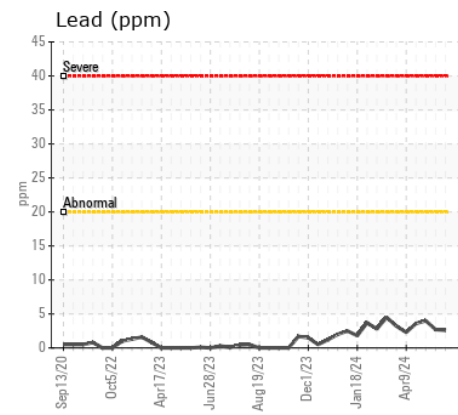
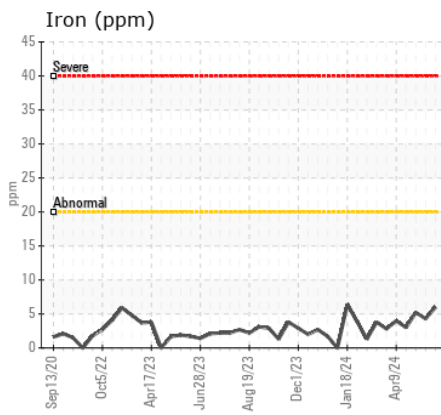
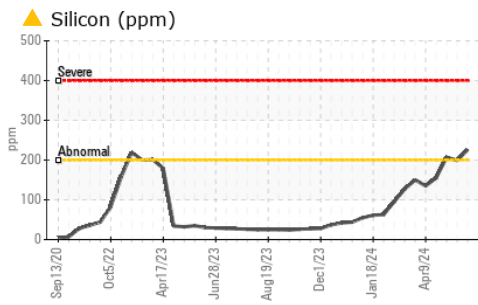
Elemental level of silicon (Si) above normal.

Silicon	ppm	ASTM D5185m	>200	<b>▲ 226</b>	199	▲ 207
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	0	0
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>2	<b>0</b>	0	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.7</b>	5.7	5.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.8</b>	21.5	21.7
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	>.2	<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	>20	<b>2</b>	1	2
Boron	ppm	ASTM D5185m		<b>0</b>	0	0
Barium	ppm	ASTM D5185m		<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Manganese	ppm	ASTM D5185m		<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>8</b>	6	5
Calcium	ppm	ASTM D5185m	1500	<b>2095</b>	1941	2066
Phosphorus	ppm	ASTM D5185m	280	<b>346</b>	319	346
Zinc	ppm	ASTM D5185m	330	<b>451</b>	443	459
Sulfur	ppm	ASTM D5185m		<b>3845</b>	3650	3892
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.7</b>	15.5	15.9
Acid Number (AN)	mg KOH/g	ASTM D8045	0.11	<b>1.66</b>	1.60	1.82
Base Number (BN)	mg KOH/g	ASTM D2896	5.5	<b>3.92</b>	3.95	3.86
Visc @ 100°C	cSt	ASTM D445	13.9	<b>14.4</b>	14.2	14.4



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0896468  
**Lab Number** : 06213657  
**Unique Number** : 11086521  
**Test Package** : MOB 2

**Received** : 18 Jun 2024  
**Tested** : 20 Jun 2024  
**Diagnosed** : 20 Jun 2024 - Sean Felton

**SANTEE COOPER / LEE COUNTY LANDFILL**  
 1435 SUMTER HIGHWAY (HWY 15)  
 BISHOPVILLE, SC  
 US 29010

Contact: DAVID WINSTEAD  
 david.winstead@santeecooper.com; dhwinste@santeecooper.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: (843)248-7235  
 F: (843)234-7206