



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
CATERPILLAR 3
Component
Biogas Engine
Fluid
CONOCO EL MAR LA4 EXD (150 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0747368	WC0747369	WC0747363
Sample Date		Client Info		18 Jun 2024	18 Jun 2024	03 Jun 2024
Machine Age	hrs	Client Info		58510	58510	58119
Oil Age	hrs	Client Info		300	300	2679
Filter Age	hrs	Client Info		300	300	2679
Oil Changed		Client Info		Not Changed	Changed	Not Changed
Filter Changed		Client Info		Not Changed	N/A	Not Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>45	2	2	5
Chromium	ppm	ASTM D5185m	>2	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>5	<1	0	0
Aluminum	ppm	ASTM D5185m	>10	2	2	2
Lead	ppm	ASTM D5185m	>5	<1	2	0
Copper	ppm	ASTM D5185m	>14	<1	<1	<1
Tin	ppm	ASTM D5185m	>13	2	1	3
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

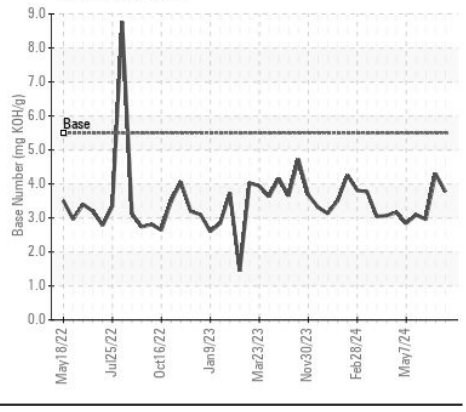
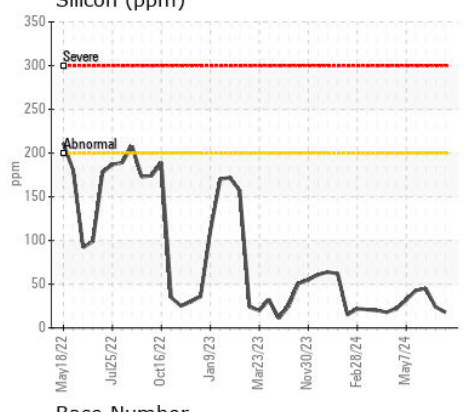
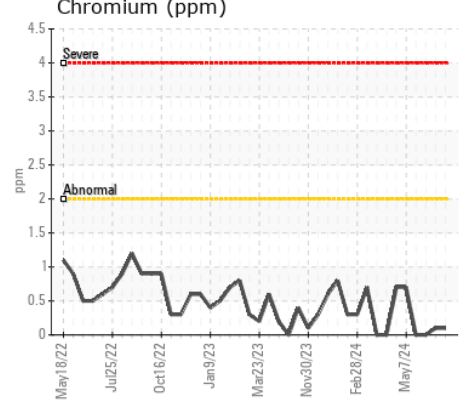
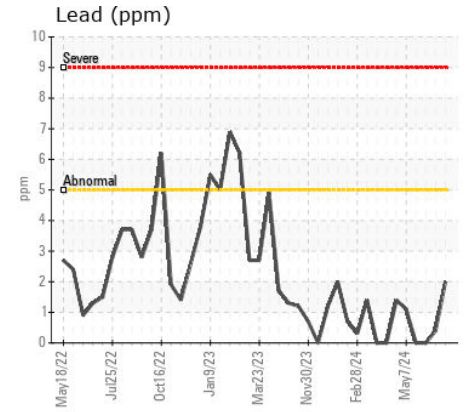
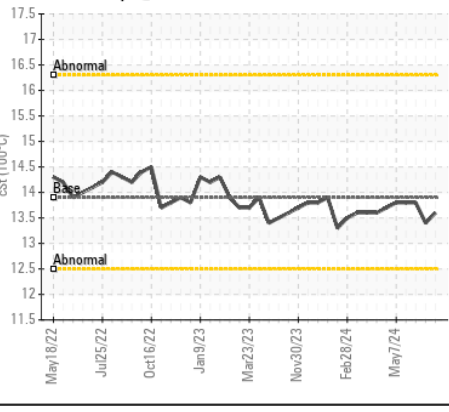
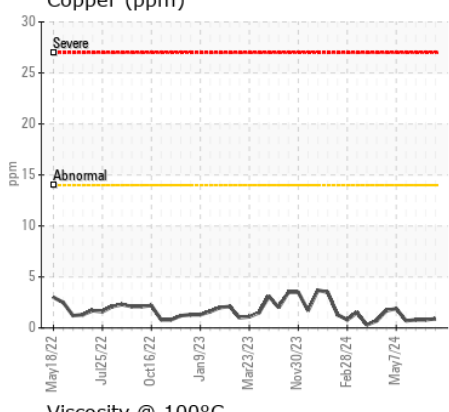
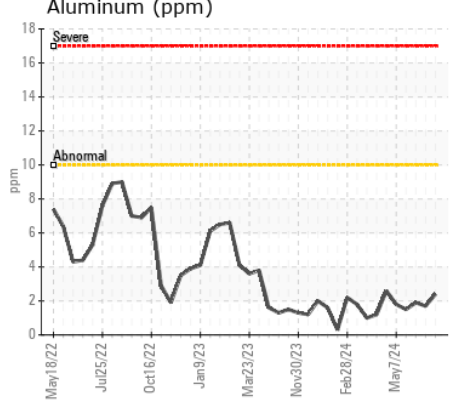
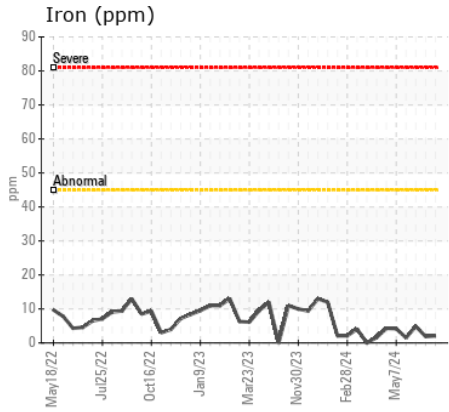
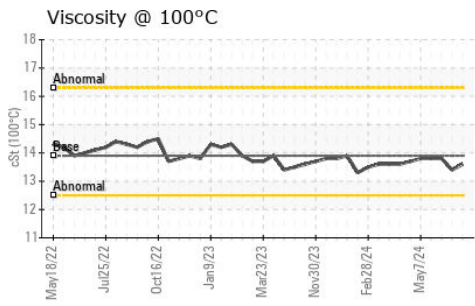
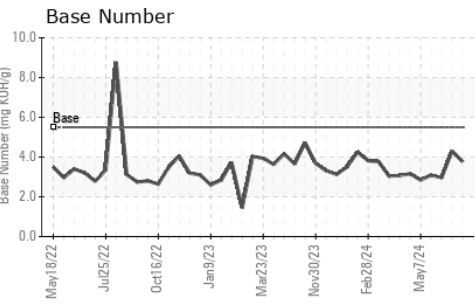
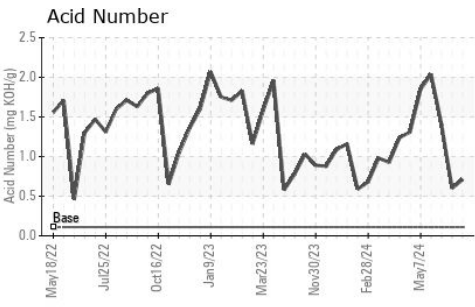
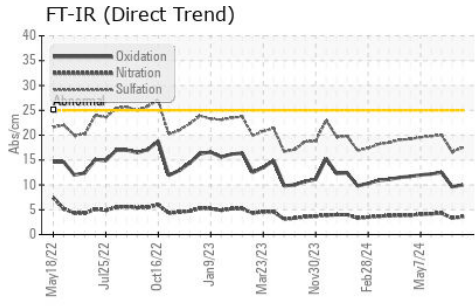
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>200	24	18	45
Potassium	ppm	ASTM D5185m	>20	2	3	0
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
Soot %	%	*ASTM D7844		0	0	0
Nitration	Abs/cm	*ASTM D7624	>20	3.6	3.3	4.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.5	16.7	20.0
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	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		0	2	4
Boron	ppm	ASTM D5185m		<1	1	4
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		1	1	<1
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		6	6	6
Calcium	ppm	ASTM D5185m	1500	1557	1687	1838
Phosphorus	ppm	ASTM D5185m	280	290	315	350
Zinc	ppm	ASTM D5185m	330	378	394	424
Sulfur	ppm	ASTM D5185m		3076	4046	4234
Oxidation	Abs/.1mm	*ASTM D7414	>25	10.0	9.6	12.5
Acid Number (AN)	mg KOH/g	ASTM D8045	0.11	0.71	0.60	1.40
Base Number (BN)	mg KOH/g	ASTM D2896	5.5	3.77	4.30	2.96
Visc @ 100°C	cSt	ASTM D445	13.9	13.6	13.4	13.8



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0747368
Lab Number : 06234013
Unique Number : 11122847
Test Package : MOB 2
Received : 11 Jul 2024
Tested : 12 Jul 2024
Diagnosed : 13 Jul 2024 - Don Baldridge

SANTEE COOPER - RICHLAND LANDFILL
 1445 SCREAMING EAGLE ROAD
 ELGIN, SC
 US 29405
 Contact: BRIAN PEAKE
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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)