



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
WESTERN STAR 19
Component
Diesel Engine
Fluid
15W40 CJ-4 PLUS (10 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LP0001594	WC0569628	WC0542461
Sample Date		Client Info		15 Mar 2024	11 Jan 2022	03 Sep 2021
Machine Age	mls	Client Info		49848	396023	540227
Oil Age	mls	Client Info		10000	358	13618
Filter Age	mls	Client Info		10000	358	13618
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

Metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185m	>100	114	7	▲ 383
Chromium	ppm	ASTM D5185m	>20	5	<1	14
Nickel	ppm	ASTM D5185m	>2	1	0	2
Titanium	ppm	ASTM D5185m	>2	<1	<1	2
Silver	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum	ppm	ASTM D5185m	>25	6	<1	● 22
Lead	ppm	ASTM D5185m	>40	14	<1	7
Copper	ppm	ASTM D5185m	>330	14	1	25
Tin	ppm	ASTM D5185m	>15	3	<1	4
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

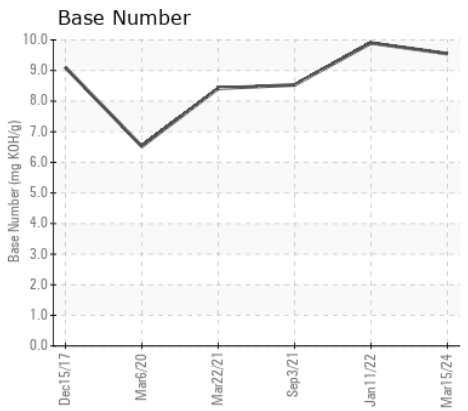
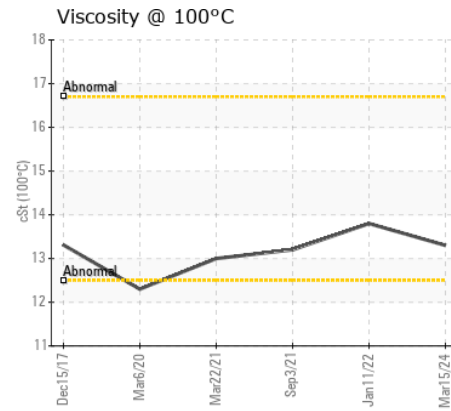
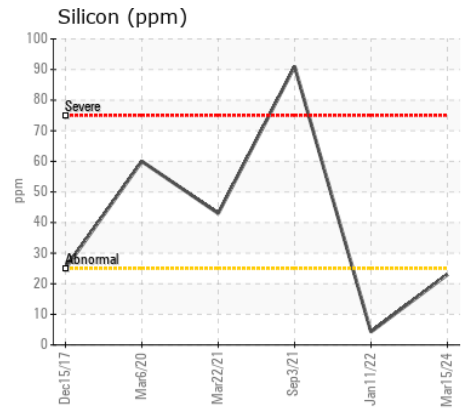
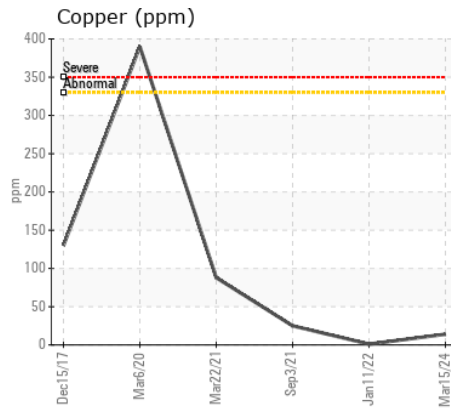
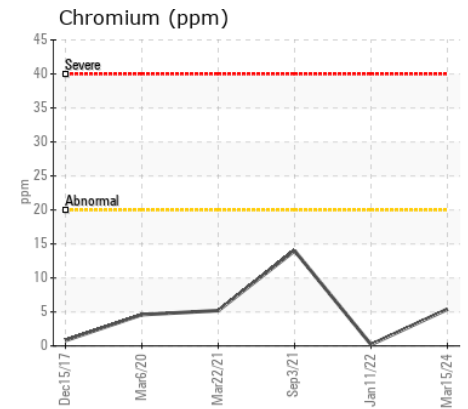
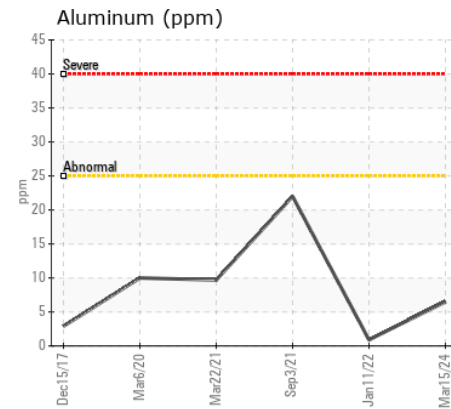
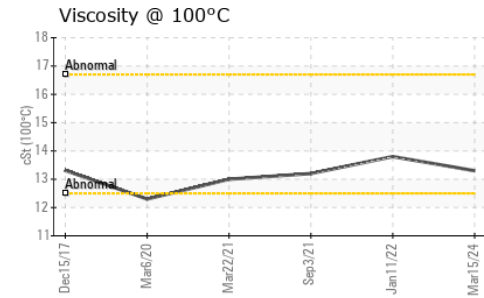
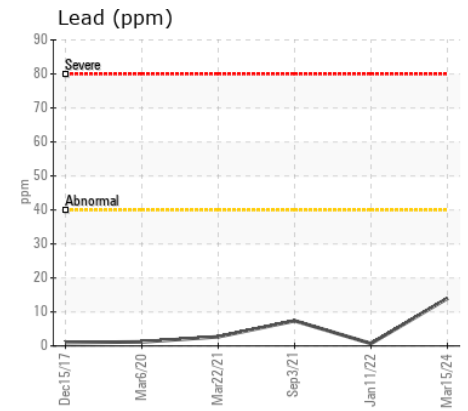
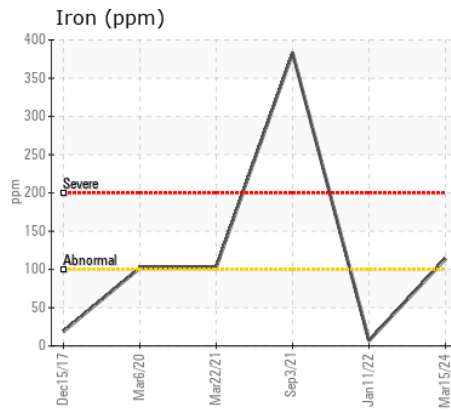
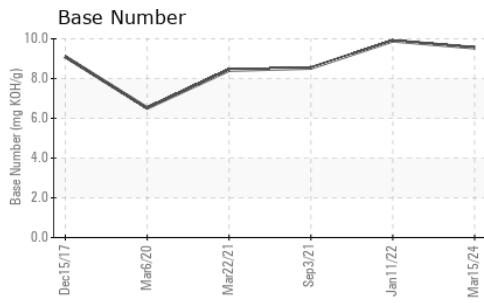
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	23	4	▲ 91
Potassium	ppm	ASTM D5185m	>20	0	0	6
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.5	0.1	0.7
Nitration	Abs/cm	*ASTM D7624	>20	11.5	8.7	10.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.7	19.4	23.2
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	>0.2	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		5	2	10
Boron	ppm	ASTM D5185m		21	19	6
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		71	56	63
Manganese	ppm	ASTM D5185m		2	<1	4
Magnesium	ppm	ASTM D5185m		1012	898	971
Calcium	ppm	ASTM D5185m		1299	1081	1248
Phosphorus	ppm	ASTM D5185m		1268	1038	1061
Zinc	ppm	ASTM D5185m		1426	1227	1301
Sulfur	ppm	ASTM D5185m		3777	3127	2491
Oxidation	Abs/.1mm	*ASTM D7414	>25	21.8	16.3	20.1
Base Number (BN)	mg KOH/g	ASTM D2896		9.55	9.90	8.53
Visc @ 100°C	cSt	ASTM D445		13.3	13.8	13.2



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LP0001594
Lab Number : 06123249
Unique Number : 10937400
Test Package : MOB 2

Received : 19 Mar 2024
Tested : 01 Apr 2024
Diagnosed : 01 Apr 2024 - Wes Davis

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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)