



OIL ANALYSIS REPORT

WEAR
CONTAMINATION
FLUID CONDITION

ATTENTION
ABNORMAL
NORMAL

Area
Store 9 - Marietta

Machine Id
1091

Component
Diesel Engine

Fluid
SHELL ROTELLA T 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LEC0051407	LEC0048377	LEC0047097
Sample Date		Client Info		14 Jun 2024	15 Mar 2024	01 Feb 2024
Machine Age	mls	Client Info		572553	559992	542117
Oil Age	mls	Client Info		10000	10000	10000
Filter Age	mls	Client Info		10000	10000	10000
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	48	32	21
Chromium	ppm	ASTM D5185m	>20	3	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		2	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	5	4	5
Lead	ppm	ASTM D5185m	>40	4	5	4
Copper	ppm	ASTM D5185m	>330	6	0	0
Tin	ppm	ASTM D5185m	>15	2	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

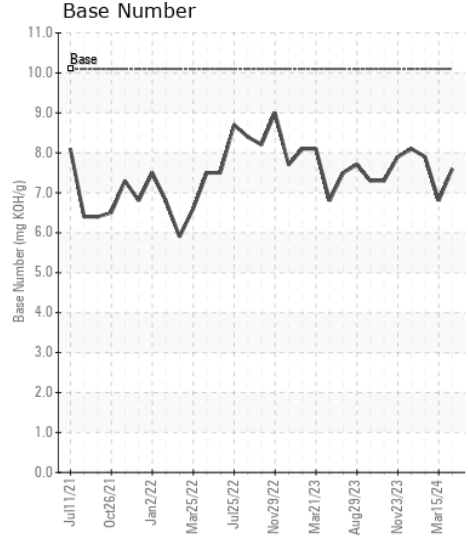
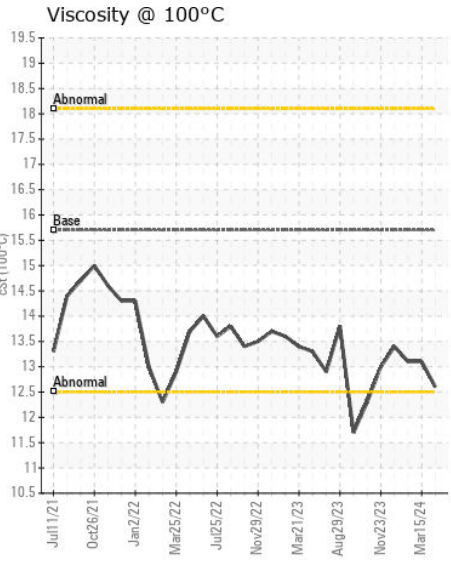
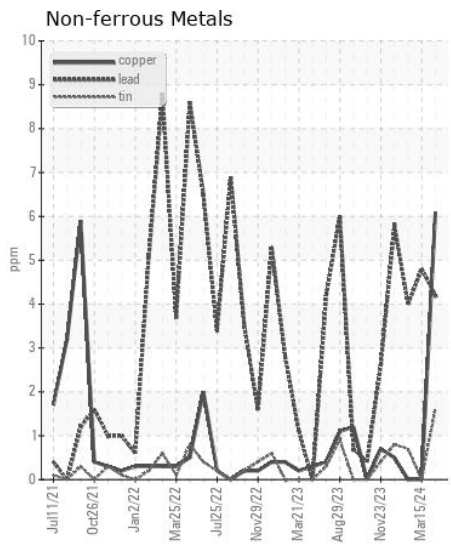
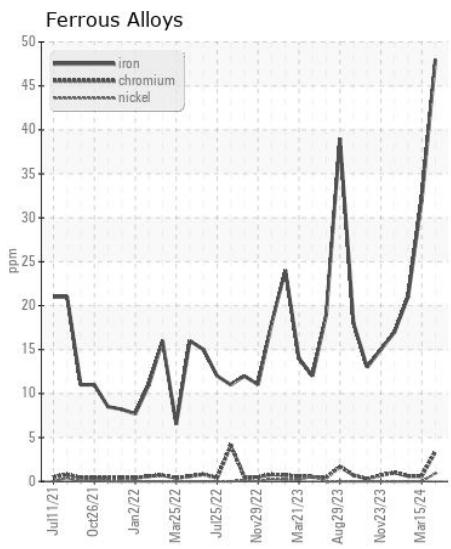
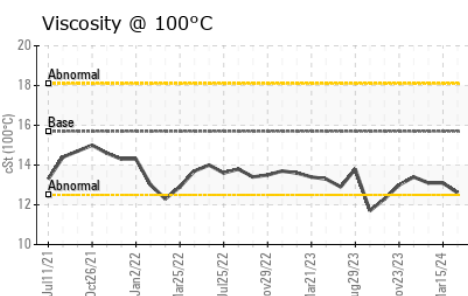
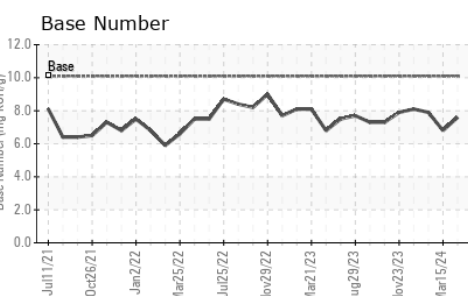
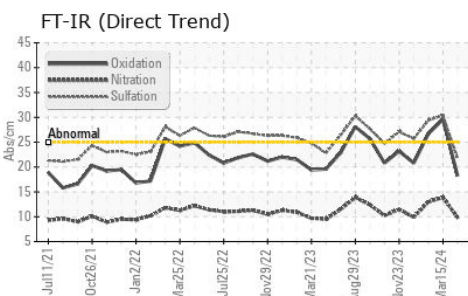
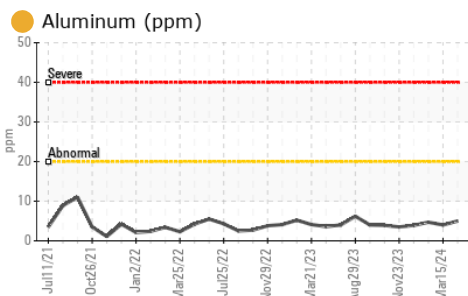
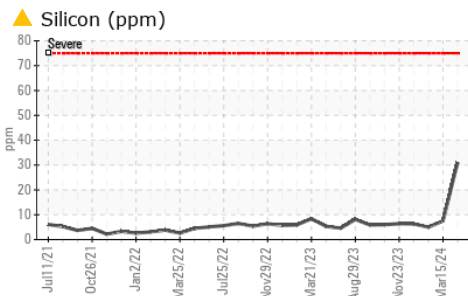
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>120	▲ 31	8	5
Potassium	ppm	ASTM D5185m	>20	13	<1	<1
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	0.4	0.8	0.8
Nitration	Abs/cm	*ASTM D7624	>20	9.8	13.9	13.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.8	30.4	29.4
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 acceptable for the time in service.

Sodium	ppm	ASTM D5185m		6	1	<1
Boron	ppm	ASTM D5185m	316	29	133	176
Barium	ppm	ASTM D5185m	0.0	12	0	<1
Molybdenum	ppm	ASTM D5185m	1.2	73	134	148
Manganese	ppm	ASTM D5185m		4	0	<1
Magnesium	ppm	ASTM D5185m	24	428	784	746
Calcium	ppm	ASTM D5185m	2292	1845	1835	1641
Phosphorus	ppm	ASTM D5185m	1064	1022	854	795
Zinc	ppm	ASTM D5185m	1160	1335	1035	938
Sulfur	ppm	ASTM D5185m	4996	3467	3218	2470
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.2	29.6	26.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	7.6	6.8	7.9
Visc @ 100°C	cSt	ASTM D445	15.7	12.6	13.1	13.1



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0051407
Lab Number : 06219486
Unique Number : 11097683
Test Package : CONST (Additional Tests: TBN)

Received : 25 Jun 2024
Tested : 26 Jun 2024
Diagnosed : 26 Jun 2024 - Don Baldrige

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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)