



OIL ANALYSIS REPORT

WEAR	MARGINAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
Store 9 - Marietta

Machine Id
1097

Component
Diesel Engine

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

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. 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		LEC0051473	LEC0049754	LEC0048060
Sample Date		Client Info		05 Jul 2024	01 Jun 2024	06 Feb 2024
Machine Age	hrs	Client Info		13026	12590	11836
Oil Age	hrs	Client Info		400	400	400
Filter Age	hrs	Client Info		400	400	400
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				MARGINAL	ABNORMAL	NORMAL

WEAR

The lead level is marginal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	33	38	27
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	5	9	5
Lead	ppm	ASTM D5185m	>40	▲ 34	6	6
Copper	ppm	ASTM D5185m	>330	2	<1	<1
Tin	ppm	ASTM D5185m	>15	3	4	<1
Vanadium	ppm	ASTM D5185m		<1	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.

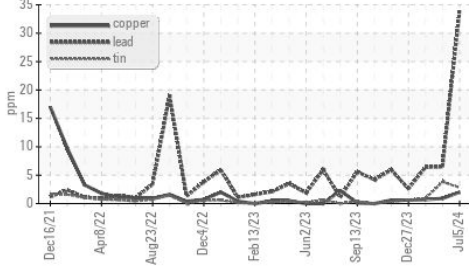
Silicon	ppm	ASTM D5185m	>120	12	▲ 23	7
Potassium	ppm	ASTM D5185m	>20	5	8	39
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.6	0.7	0.6
Nitration	Abs/cm	*ASTM D7624	>20	11.4	12.4	9.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	27.6	26.1	25.1
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

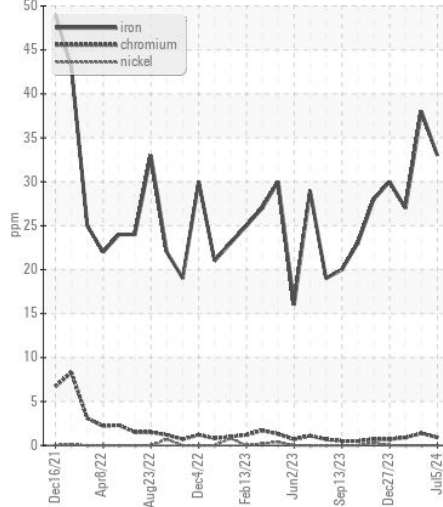
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		0	4	2
Boron	ppm	ASTM D5185m	316	172	57	184
Barium	ppm	ASTM D5185m	0.0	0	3	0
Molybdenum	ppm	ASTM D5185m	1.2	89	27	219
Manganese	ppm	ASTM D5185m		<1	3	<1
Magnesium	ppm	ASTM D5185m	24	420	258	658
Calcium	ppm	ASTM D5185m	2292	1554	1898	1524
Phosphorus	ppm	ASTM D5185m	1064	982	993	668
Zinc	ppm	ASTM D5185m	1160	1224	1198	857
Sulfur	ppm	ASTM D5185m	4996	2924	3439	2414
Oxidation	Abs/.1mm	*ASTM D7414	>25	24.1	24.2	19.4
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	6.4	5.8	8.3
Visc @ 100°C	cSt	ASTM D445	15.7	13.1	13.3	12.6

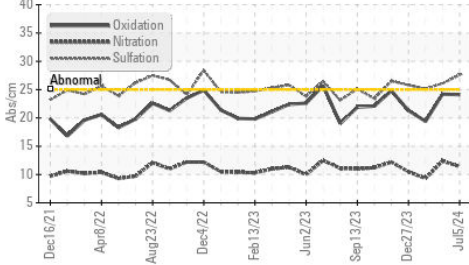
▲ Non-ferrous Metals



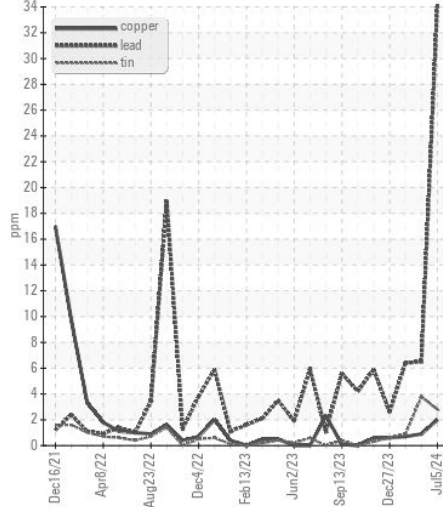
Ferrous Alloys



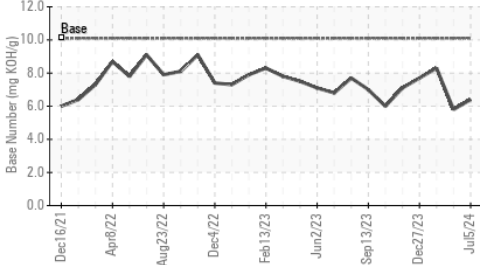
FT-IR (Direct Trend)



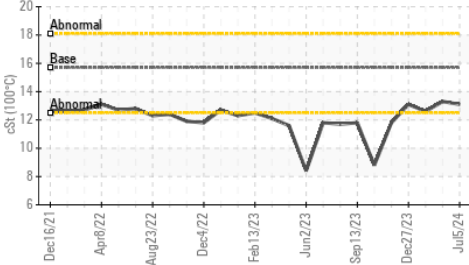
▲ Non-ferrous Metals



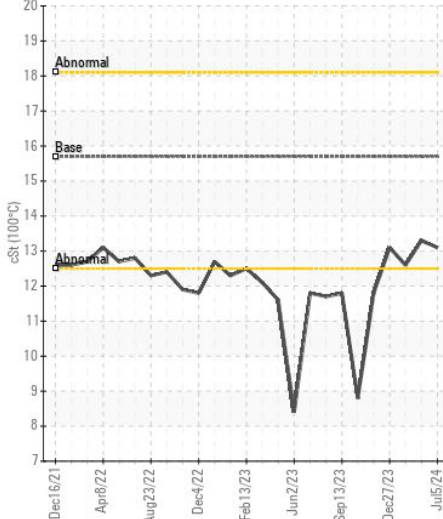
Base Number



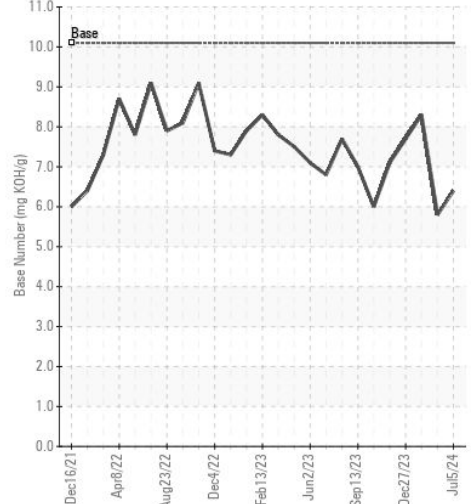
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0051473 **Received** : 18 Jul 2024
Lab Number : 06239919 **Tested** : 18 Jul 2024
Unique Number : 11128753 **Diagnosed** : 19 Jul 2024 - Don Baldridge
Test Package : CONST (Additional Tests: TBN)

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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)