



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area
Store 9 - Marietta

Machine Id
1077

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		LEC0051474	LEC0047082	LEC0045452
Sample Date		Client Info		09 Jul 2024	01 Mar 2024	18 Jan 2024
Machine Age	hrs	Client Info		5657	5239	4600
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				ABNORMAL	SEVERE	SEVERE

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	17	16	21
Chromium	ppm	ASTM D5185m	>20	1	<1	2
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	4	5	3
Lead	ppm	ASTM D5185m	>40	1	▲ 144	▲ 162
Copper	ppm	ASTM D5185m	>330	6	9	8
Tin	ppm	ASTM D5185m	>15	1	3	4
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

Elemental level of silicon (Si) above normal.

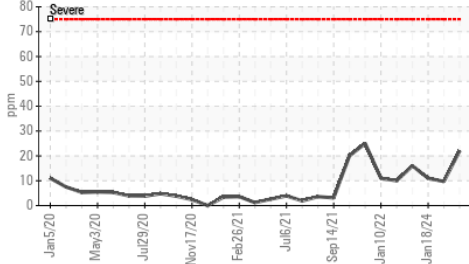
Silicon	ppm	ASTM D5185m	>120	▲ 22	10	11
Potassium	ppm	ASTM D5185m	>20	4	5	10
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.4	0.3
Nitration	Abs/cm	*ASTM D7624	>20	6.2	11.2	11.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.2	26.3	26.0
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	>0.2	NEG	NEG	NEG

FLUID CONDITION

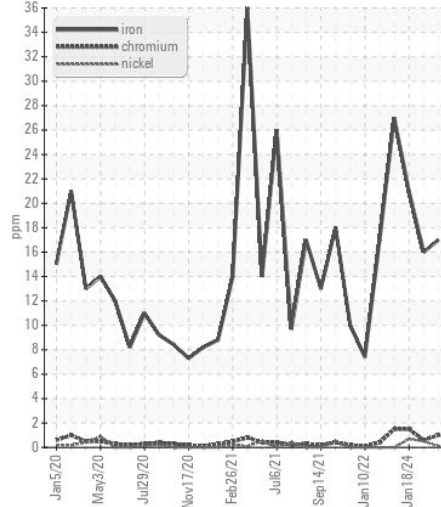
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		0	8	19
Boron	ppm	ASTM D5185m	316	490	181	129
Barium	ppm	ASTM D5185m	0.0	2	0	0
Molybdenum	ppm	ASTM D5185m	1.2	86	133	130
Manganese	ppm	ASTM D5185m		3	<1	<1
Magnesium	ppm	ASTM D5185m	24	380	711	678
Calcium	ppm	ASTM D5185m	2292	1445	1545	1451
Phosphorus	ppm	ASTM D5185m	1064	1060	731	716
Zinc	ppm	ASTM D5185m	1160	1269	911	849
Sulfur	ppm	ASTM D5185m	4996	3384	2459	2461
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.0	23.7	22.1
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	7.7	6.6	6.5
Visc @ 100°C	cSt	ASTM D445	15.7	13.6	13.9	13.9

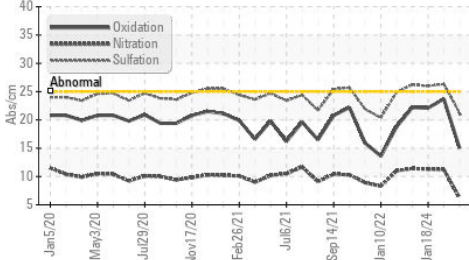
▲ Silicon (ppm)



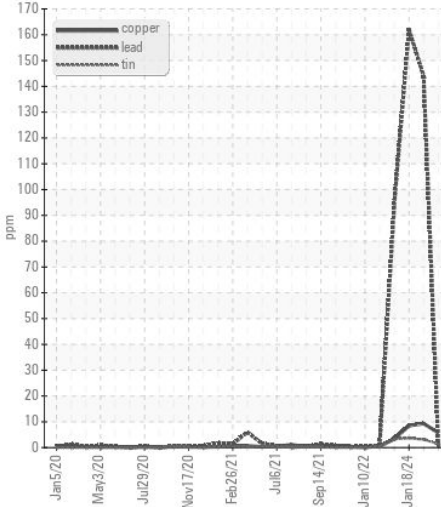
Ferrous Alloys



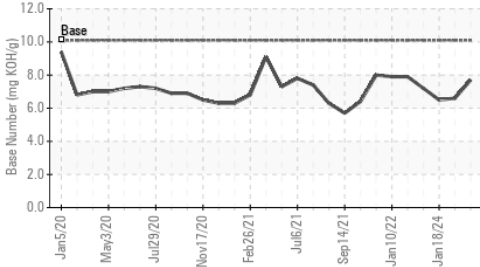
FT-IR (Direct Trend)



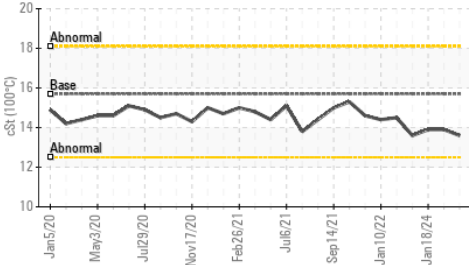
Non-ferrous Metals



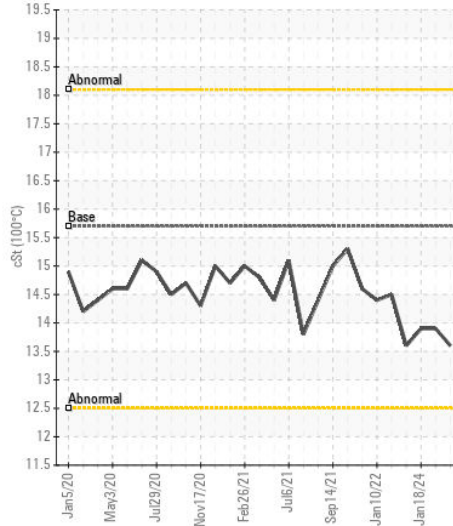
Base Number



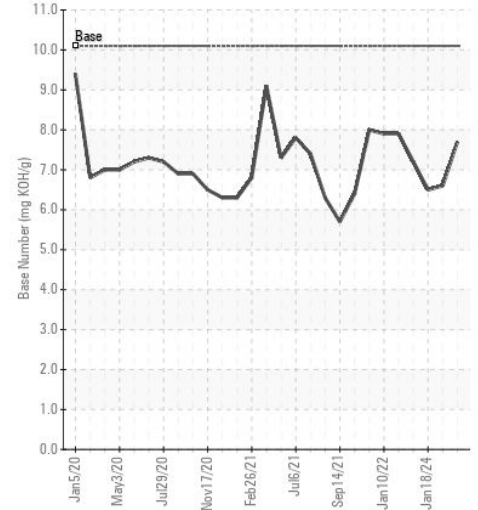
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : LEC0051474
 Lab Number : 06239910
 Unique Number : 11128744
 Test Package : CONST (Additional Tests: TBN)

Received : 18 Jul 2024
 Tested : 18 Jul 2024
 Diagnosed : 19 Jul 2024 - Don Baldridge

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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)