TRAAP
Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
FREIGHTLINER JET 2 (S/N 3ALACWDT1FD51452)
Component
Diesel Engine
Fluid
TRC MOLY XL PRO-SPEC IV HD SYN 5W40 (12 QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

WEAR

Cylinder, crank, or cam shaft wear is indicated.

CONTAMINATION

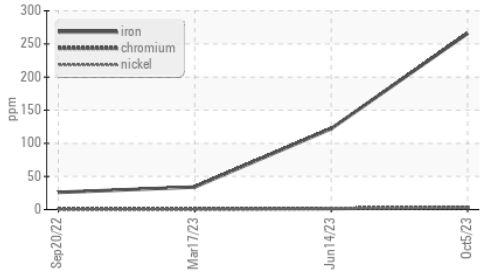
There is no indication of any contamination in the oil.

FLUID CONDITION

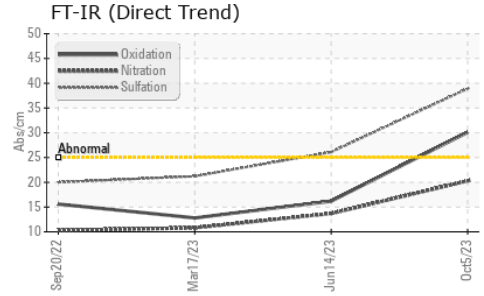
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR05999223	TR05937462	TR05837946
Sample Date		Client Info		05 Oct 2023	14 Jun 2023	17 Mar 2023
Machine Age	mls	Client Info		209073	198613	191863
Oil Age	mls	Client Info		5000	16000	8000
Filter Age	mls	Client Info		0	16000	8000
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				ABNORMAL	ABNORMAL	NORMAL
Iron	ppm	ASTM D5185m	>80	▲ 266	▲ 122	34
Chromium	ppm	ASTM D5185m	>5	3	1	<1
Nickel	ppm	ASTM D5185m	>2	2	<1	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	16	8	5
Lead	ppm	ASTM D5185m	>30	2	0	0
Copper	ppm	ASTM D5185m	>150	4	2	2
Tin	ppm	ASTM D5185m	>5	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	14	10	6
Potassium	ppm	ASTM D5185m	>20	17	10	4
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	1.4	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	20.3	13.7	10.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	38.9	26.1	21.2
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
Sodium	ppm	ASTM D5185m		6	<1	3
Boron	ppm	ASTM D5185m		2	2	8
Barium	ppm	ASTM D5185m		3	3	0
Molybdenum	ppm	ASTM D5185m		149	159	142
Manganese	ppm	ASTM D5185m		2	1	<1
Magnesium	ppm	ASTM D5185m		31	28	37
Calcium	ppm	ASTM D5185m	4500	4297	4558	4479
Phosphorus	ppm	ASTM D5185m		967	974	1012
Zinc	ppm	ASTM D5185m	1200	1150	1145	1237
Sulfur	ppm	ASTM D5185m		4175	4779	5884
Oxidation	Abs/.1mm	*ASTM D7414	>25	30.1	16.2	12.8
Base Number (BN)	mg KOH/g	ASTM D2896	15	8.67	10.58	11.89
Visc @ 100°C	cSt	ASTM D445	15	15.2	13.9	14.1

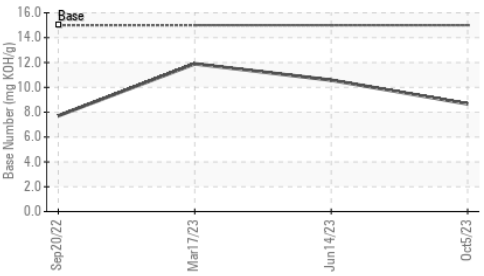
Ferrous Alloys



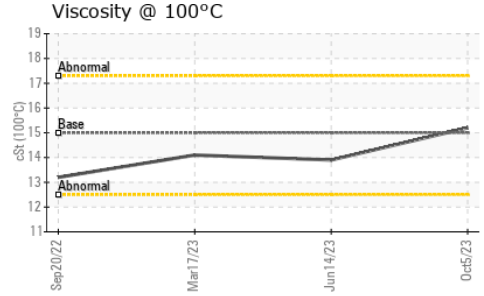
FT-IR (Direct Trend)



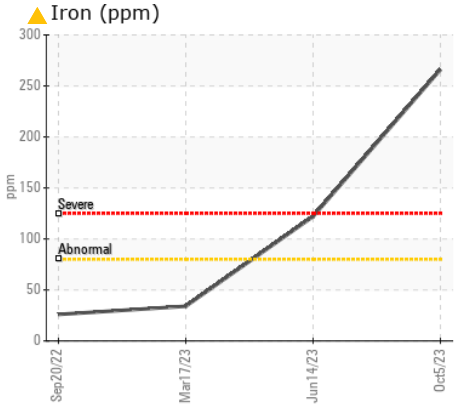
Base Number



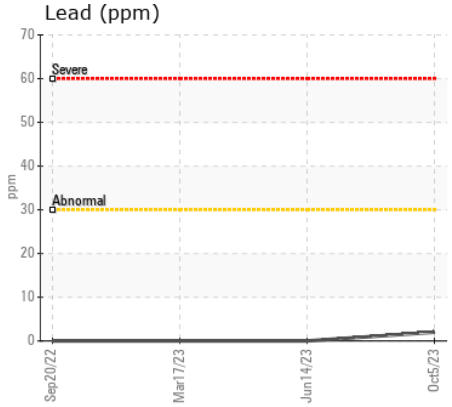
Viscosity @ 100°C



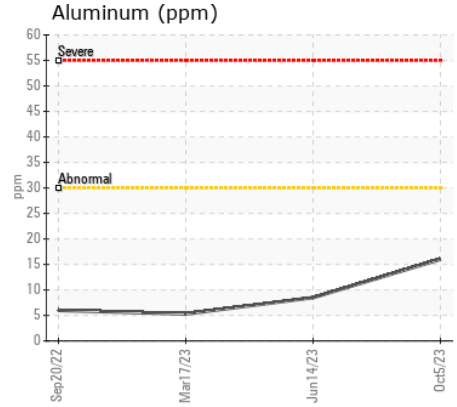
Iron (ppm)



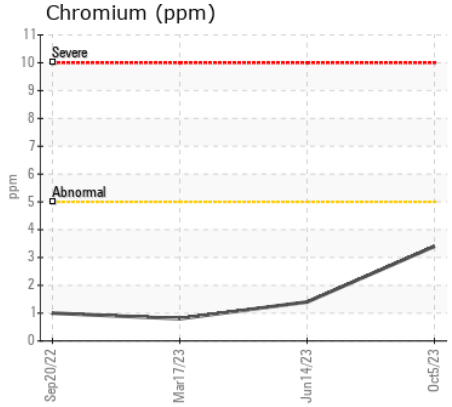
Lead (ppm)



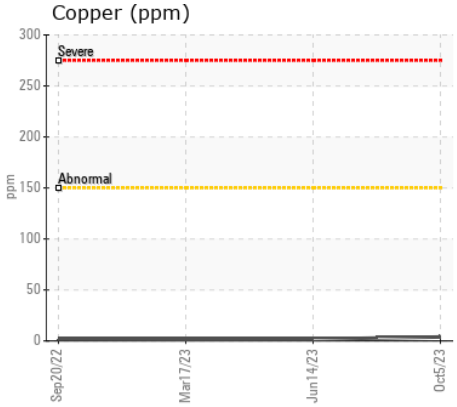
Aluminum (ppm)



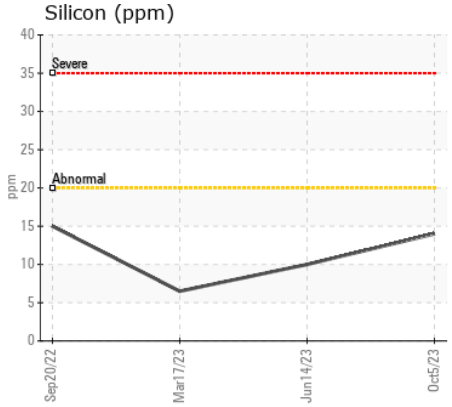
Chromium (ppm)



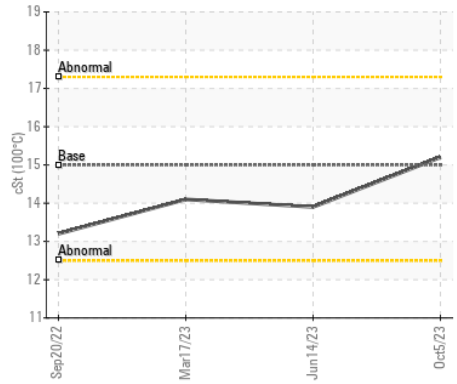
Copper (ppm)



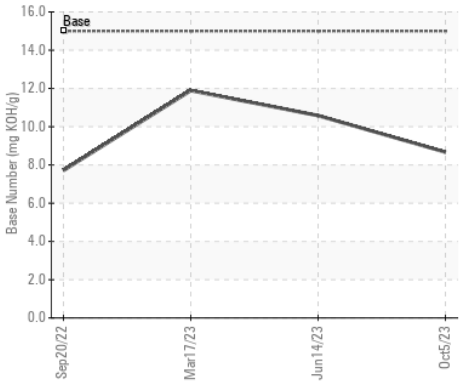
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR05999223
Lab Number : 05999223
Unique Number : 10727583
Test Package : MOB 2

Received : 06 Nov 2023
Tested : 07 Nov 2023
Diagnosed : 07 Nov 2023 - Don Baldridge

To discuss this sample report, contact Customer Service at 1-800-827-0711.
** - 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)

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