



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
FREIGHTLINER 97 FRTL

Component
Diesel Engine

Fluid
TRC MOLY XL PRO-SPEC IV 15W40 (9 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR05647351	TR05132497	TR04564978
Sample Date		Client Info		14 Sep 2022	17 Sep 2020	24 Sep 2018
Machine Age	mls	Client Info		434640	433471	432350
Oil Age	mls	Client Info		1169	1091	1850
Filter Age	mls	Client Info		1169	1091	1850
Oil Changed		Client Info		Not Changd	Changed	Changed
Filter Changed		Client Info		Not Changd	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	6	3	8
Chromium	ppm	ASTM D5185m	>20	1	1	2
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	<1	<1	<1
Aluminum	ppm	ASTM D5185m	>20	<1	0	2
Lead	ppm	ASTM D5185m	>40	2	2	<1
Copper	ppm	ASTM D5185m	>330	5	4	4
Tin	ppm	ASTM D5185m	>15	<1	<1	<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

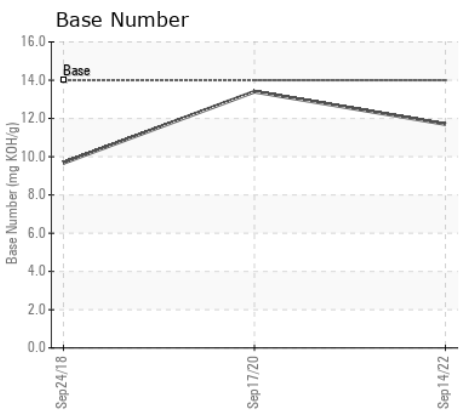
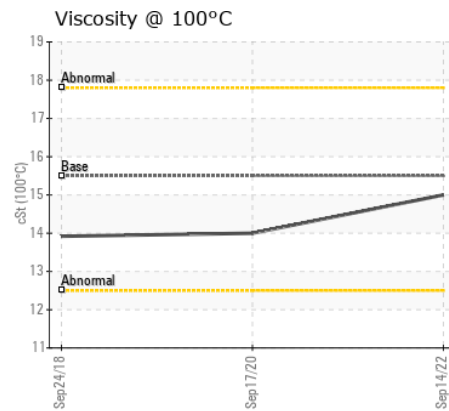
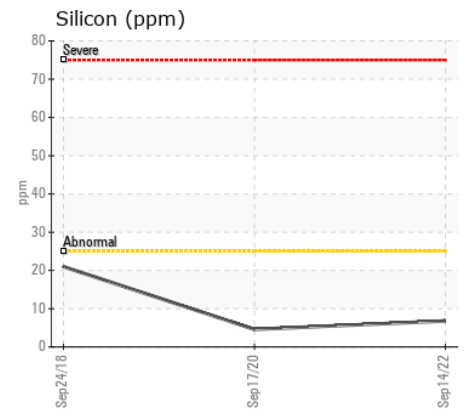
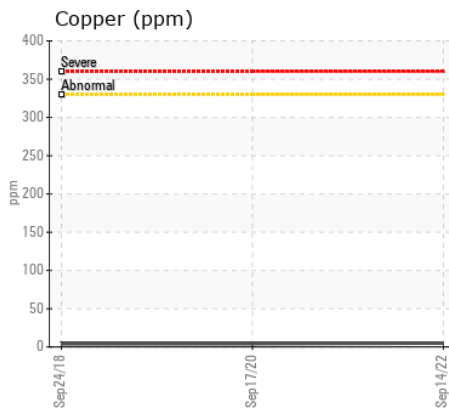
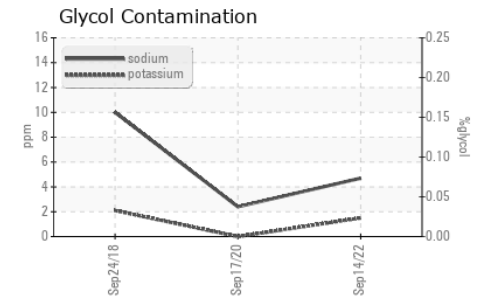
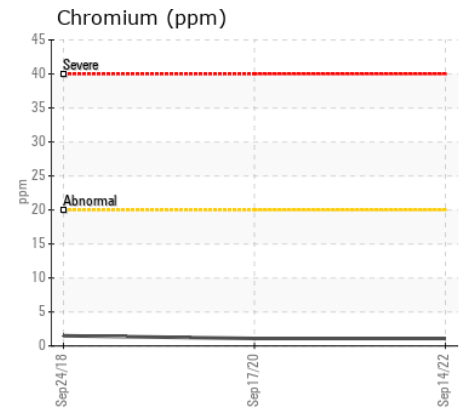
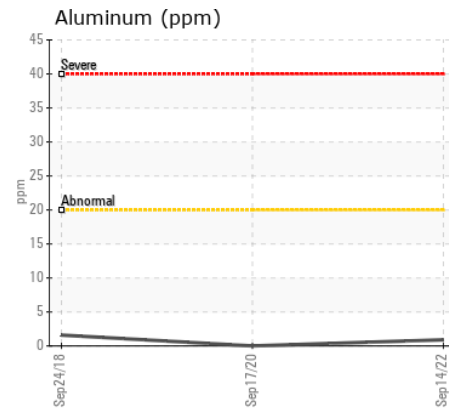
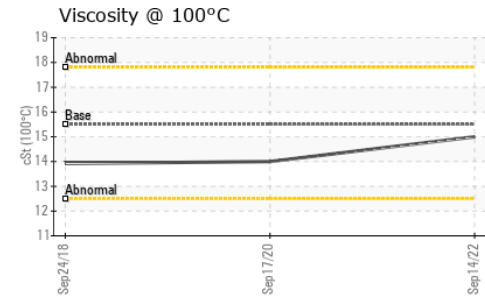
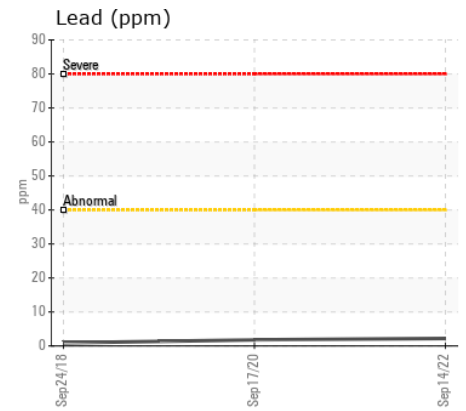
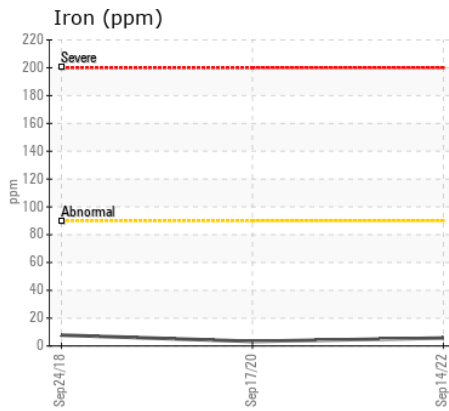
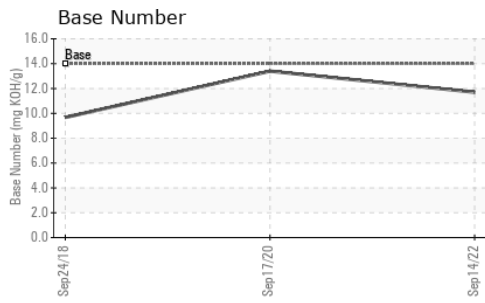
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	7	5	21
Potassium	ppm	ASTM D5185m	>20	2	0	2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	0.4	0.4	0.5
Nitration	Abs/cm	*ASTM D7624	>20	9.6	10.4	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.1	17.9	17.7
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		3	18	49
Barium	ppm	ASTM D5185m		0	0	2
Molybdenum	ppm	ASTM D5185m		123	153	46
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		89	770	738
Calcium	ppm	ASTM D5185m	1300	3702	1784	1276
Phosphorus	ppm	ASTM D5185m		837	1138	811
Zinc	ppm	ASTM D5185m	1300	1013	1317	943
Sulfur	ppm	ASTM D5185m		4587	3574	2738
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.9	13.6	15.3
Base Number (BN)	mg KOH/g	ASTM D2896	14	11.7	13.4	9.67
Visc @ 100°C	cSt	ASTM D445	15.5	15.0	14.0	13.92



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR05647351 **Received** : 21 Sep 2022
Lab Number : 05647351 **Tested** : 23 Sep 2022
Unique Number : 10141890 **Diagnosed** : 23 Sep 2022 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: Glycol)

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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