



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
WESTERN STAR 004

Component
Diesel Engine

Fluid
TRC PRO-SPEC V SYN BLEND 15W40 (12 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR05868839	TR05801745	TR05713291
Sample Date		Client Info		26 May 2023	18 Mar 2023	01 Dec 2022
Machine Age	hrs	Client Info		18939	18669	18357
Oil Age	hrs	Client Info		270	312	299
Filter Age	hrs	Client Info		270	312	299
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>200	20	21	11
Chromium	ppm	ASTM D5185m	>20	1	1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>30	7	9	7
Lead	ppm	ASTM D5185m	>30	0	<1	<1
Copper	ppm	ASTM D5185m	>30	2	3	2
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

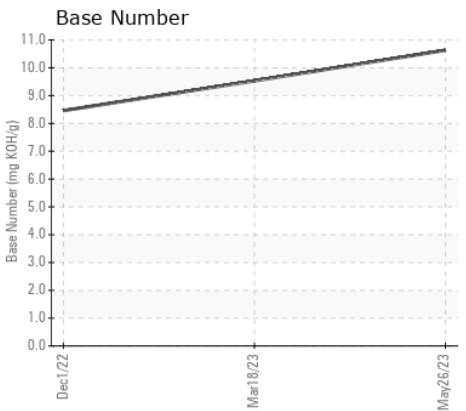
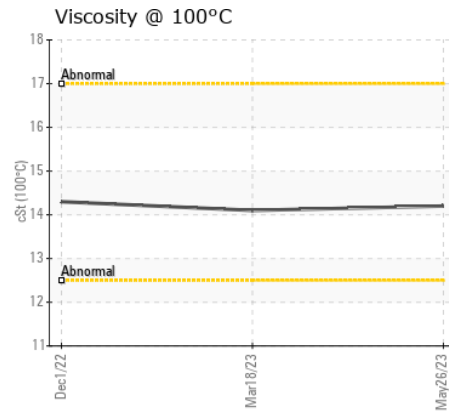
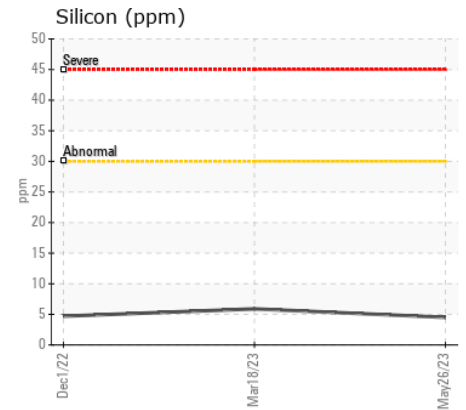
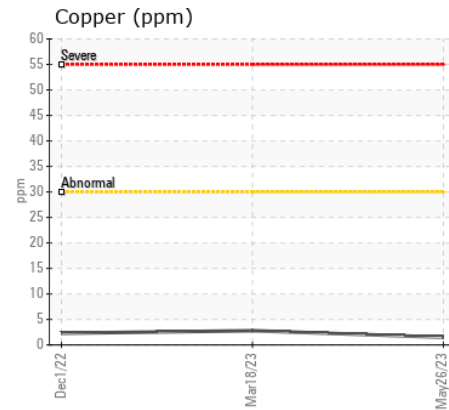
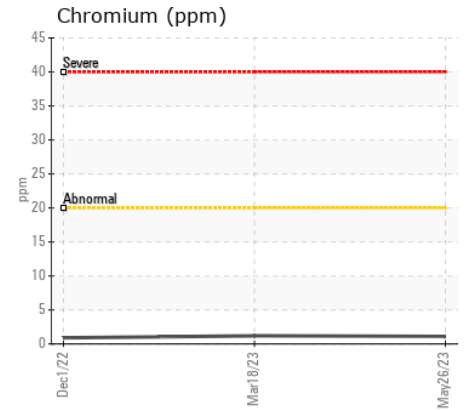
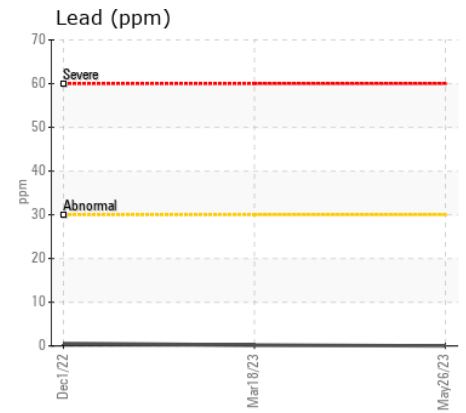
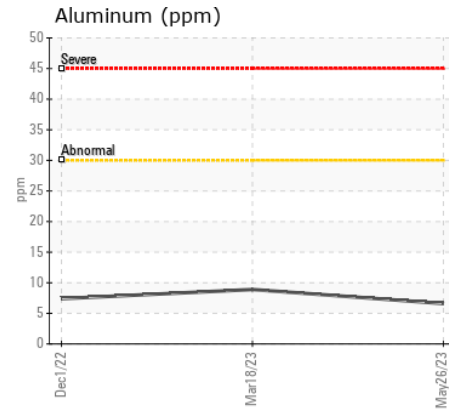
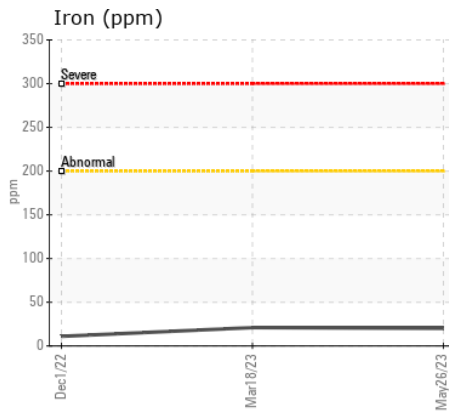
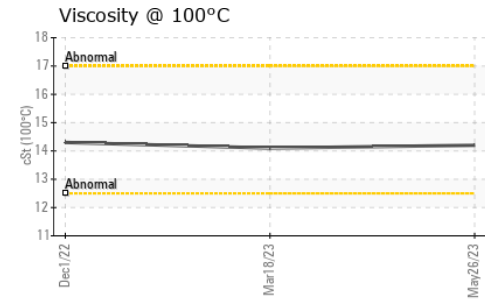
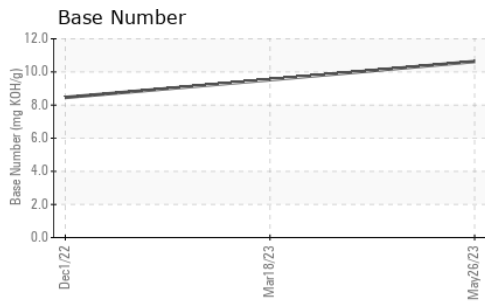
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>30	4	6	5
Potassium	ppm	ASTM D5185m	>20	2	2	1
Fuel		WC Method	>3.0	<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	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	7.2	7.6	8.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.1	18.9	19.8
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		1	1	<1
Boron	ppm	ASTM D5185m		0	2	5
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		<1	2	8
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		14	9	13
Calcium	ppm	ASTM D5185m		2543	2871	2416
Phosphorus	ppm	ASTM D5185m		950	1094	901
Zinc	ppm	ASTM D5185m		1178	1253	1137
Sulfur	ppm	ASTM D5185m		4662	4110	4147
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.3	10.8	11.9
Base Number (BN)	mg KOH/g	ASTM D2896		10.63	9.53	8.46
Visc @ 100°C	cSt	ASTM D445		14.2	14.1	14.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR05868839
Lab Number : 05868839
Unique Number : 10508623
Test Package : MOB 2

Received : 08 Jun 2023
Tested : 09 Jun 2023
Diagnosed : 09 Jun 2023 - Wes Davis

DALE ALLEN TRUCKING
 3410 RAILROAD AVE
 CRESCENT CITY, CA
 US 95531
 Contact: JEFFREY WARREN

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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F: