



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
INTERNATIONAL 36
 Component
Diesel Engine
 Fluid
TRC PRO-SPEC IV 15W40 (16 QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06086723	TR05822325	TR05443348
Sample Date		Client Info		02 Feb 2024	01 Mar 2023	22 Nov 2021
Machine Age	hrs	Client Info		4540	4041	3451
Oil Age	hrs	Client Info		499	590	521
Filter Age	hrs	Client Info		499	590	521
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	>90	45	75	60
Chromium	ppm	ASTM D5185m	>20	<1	1	1
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	11	19	14
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	<1	2	3
Tin	ppm	ASTM D5185m	>15	2	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

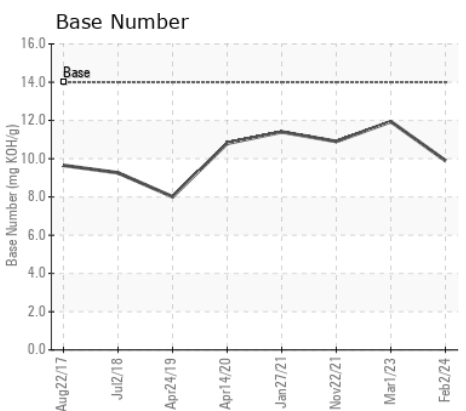
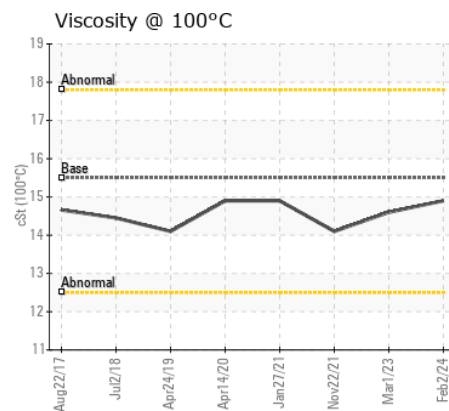
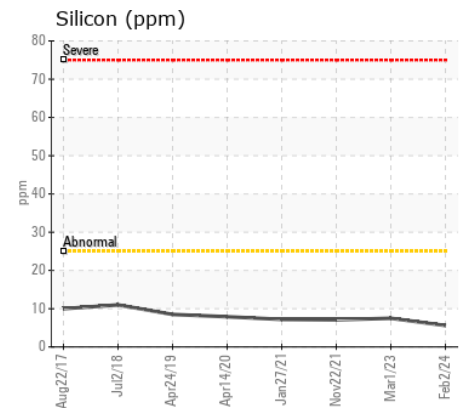
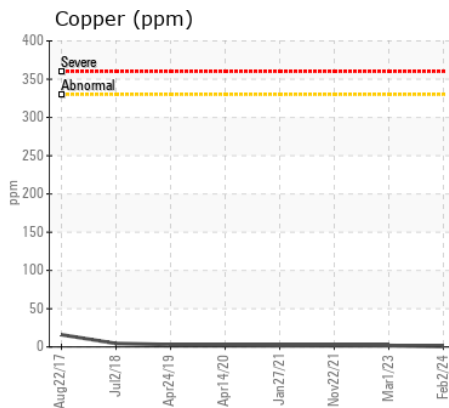
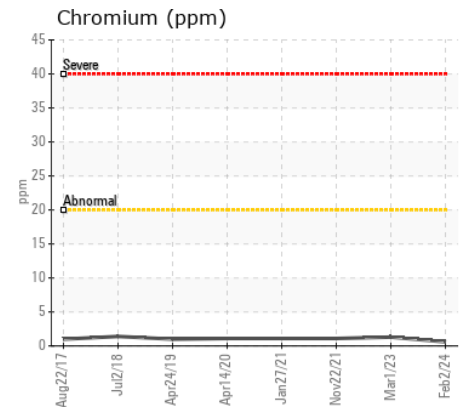
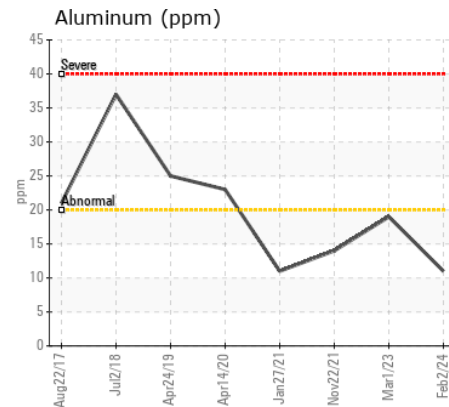
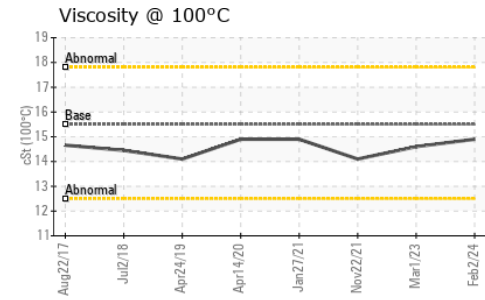
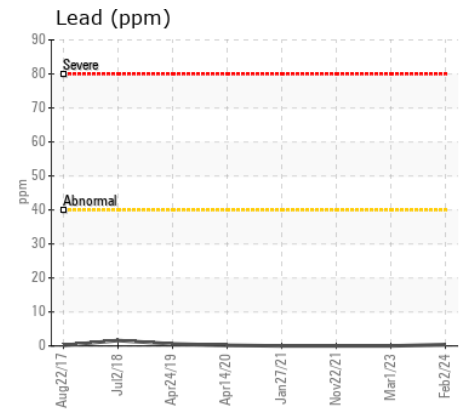
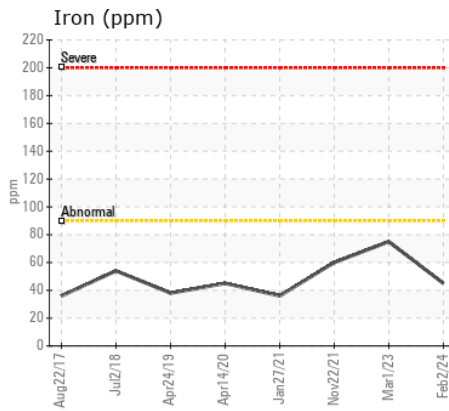
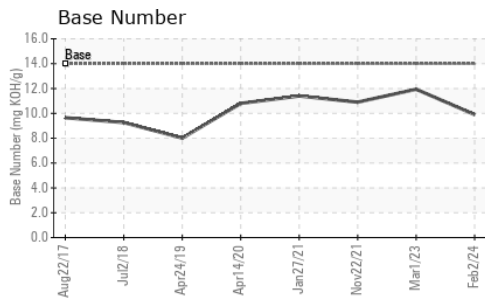
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	6	8	7
Potassium	ppm	ASTM D5185m	>20	13	20	25
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	>6	0.5	0.6	0.5
Nitration	Abs/cm	*ASTM D7624	>20	12.0	12.8	12.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.1	26.4	26.2
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

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		2	5	4
Boron	ppm	ASTM D5185m		2	0	<1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		2	1	<1
Manganese	ppm	ASTM D5185m		<1	1	<1
Magnesium	ppm	ASTM D5185m		27	35	22
Calcium	ppm	ASTM D5185m	2300	3973	4508	4467
Phosphorus	ppm	ASTM D5185m		892	1005	985
Zinc	ppm	ASTM D5185m	1200	1086	1242	1154
Sulfur	ppm	ASTM D5185m		4062	5340	3693
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.0	18.4	18.4
Base Number (BN)	mg KOH/g	ASTM D2896	14	9.90	11.94	10.9
Visc @ 100°C	cSt	ASTM D445	15.5	14.9	14.6	14.1



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06086723
Lab Number : 06086723
Unique Number : 10874168
Test Package : MOB 2
Received : 12 Feb 2024
Tested : 13 Feb 2024
Diagnosed : 13 Feb 2024 - Wes Davis

COTTONWOOD COUNTY
 1355 9TH AVE
 WINDOM, MN
 US 56101
 Contact: DARRYL BARGEN

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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