



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**TORO 30881/4500-D 115626 (S/N 13049)**

Component  
**Diesel Engine**

Fluid  
**TRC PRO-SPEC IV XP SYN BLEND SAE 10W30 (6 QTS)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>TR06239332</b>	TR06159330	TR05940335
Sample Date		Client Info		<b>16 Jul 2024</b>	23 Apr 2024	29 Aug 2023
Machine Age	hrs	Client Info		<b>2903</b>	2669	2475
Oil Age	hrs	Client Info		<b>1523</b>	1289	1095
Filter Age	hrs	Client Info		<b>1523</b>	1289	1095
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	ABNORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	<b>37</b>	23	▲ 97
Chromium	ppm	ASTM D5185m	>6	<b>1</b>	1	3
Nickel	ppm	ASTM D5185m	>2	<b>1</b>	<1	2
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>3</b>	4	8
Lead	ppm	ASTM D5185m	>95	<b>1</b>	1	5
Copper	ppm	ASTM D5185m	>85	<b>4</b>	3	21
Tin	ppm	ASTM D5185m	>9	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

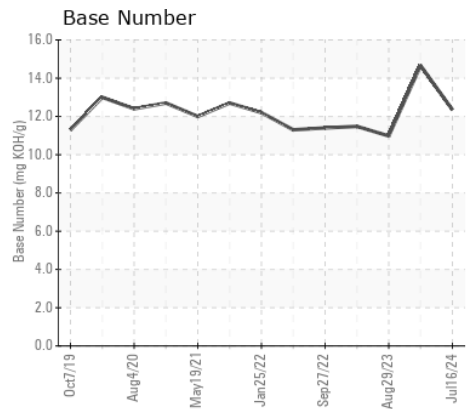
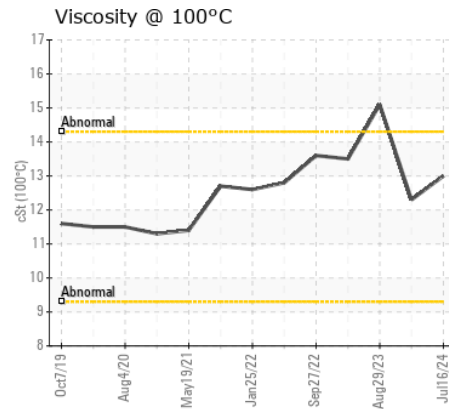
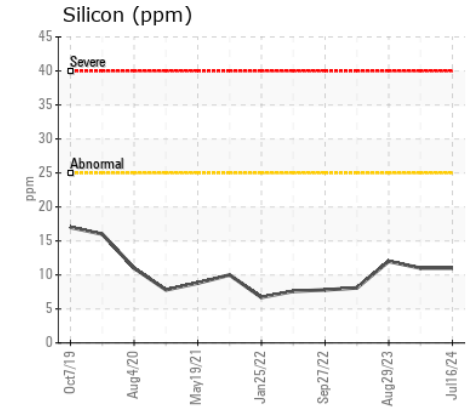
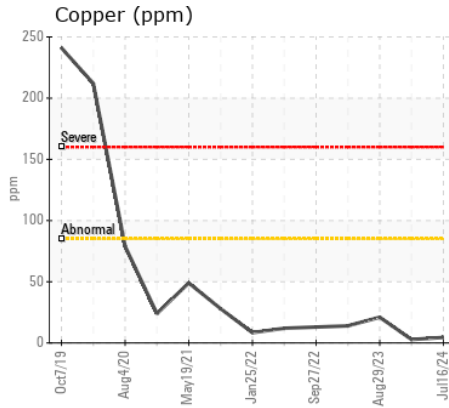
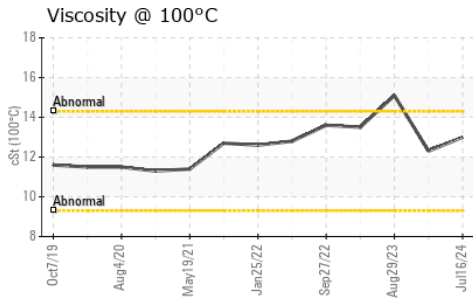
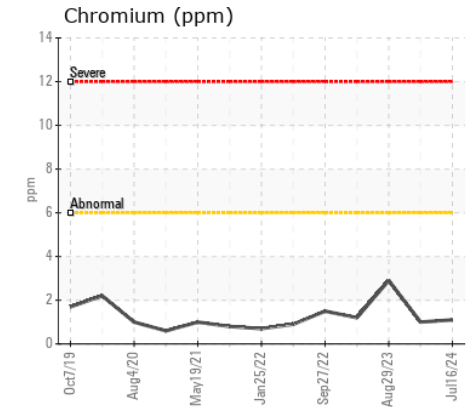
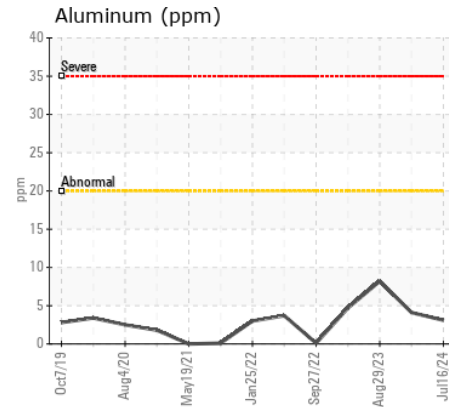
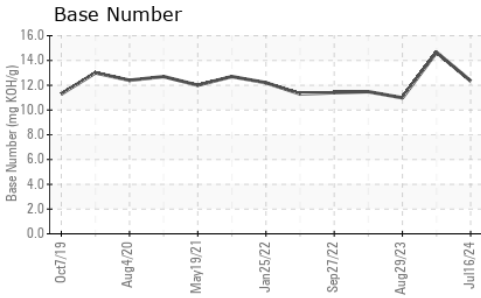
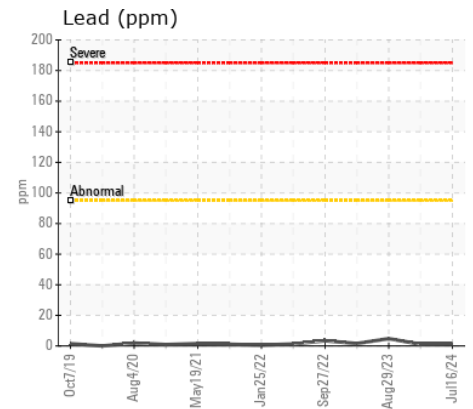
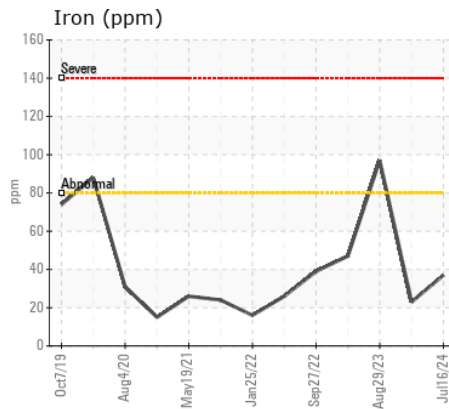
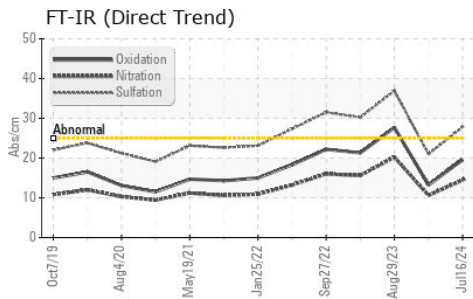
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>11</b>	11	12
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	4	4
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>1.9</b>	0.9	3.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>14.5</b>	10.6	20.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>27.8</b>	21.0	36.9
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	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		<b>3</b>	6	11
Boron	ppm	ASTM D5185m		<b>0</b>	0	0
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>2</b>	2	3
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185m		<b>17</b>	17	23
Calcium	ppm	ASTM D5185m		<b>4656</b>	4417	6304
Phosphorus	ppm	ASTM D5185m		<b>940</b>	1077	1337
Zinc	ppm	ASTM D5185m		<b>1208</b>	1207	1645
Sulfur	ppm	ASTM D5185m		<b>4251</b>	6223	5912
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>19.6</b>	13.2	27.7
Base Number (BN)	mg KOH/g	ASTM D2896		<b>12.35</b>	14.66	10.98
Visc @ 100°C	cSt	ASTM D445		<b>13.0</b>	12.3	15.1



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : TR06239332  
**Lab Number** : 06239332  
**Unique Number** : 11128166  
**Test Package** : MOB 2

**Received** : 17 Jul 2024  
**Tested** : 18 Jul 2024  
**Diagnosed** : 18 Jul 2024 - Wes Davis

**OVERLAND PARK GC CCD**  
 1801 S HURON ST  
 DENVER, CO  
 US 80223  
 Contact: JAMES WEST

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)

T:  
F: