



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
THUNDERBIRD 480

Component
Diesel Engine

Fluid
TRC PRO-SPEC V SYN BLEND 15W40 (10 GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please note that this is a corrected copy for data entry update for oil type.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR05699923	---	---
Sample Date		Client Info		07 Nov 2022	---	---
Machine Age	hrs	Client Info		5193	---	---
Oil Age	hrs	Client Info		353	---	---
Filter Age	hrs	Client Info		353	---	---
Oil Changed		Client Info		Not Chngd	---	---
Filter Changed		Client Info		Not Chngd	---	---
Sample Status				NORMAL	---	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>86	22	---	---
Chromium	ppm	ASTM D5185m	>3	<1	---	---
Nickel	ppm	ASTM D5185m	>3	1	---	---
Titanium	ppm	ASTM D5185m	>2	<1	---	---
Silver	ppm	ASTM D5185m	>2	<1	---	---
Aluminum	ppm	ASTM D5185m	>15	0	---	---
Lead	ppm	ASTM D5185m	>16	4	---	---
Copper	ppm	ASTM D5185m	>250	3	---	---
Tin	ppm	ASTM D5185m	>2	2	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

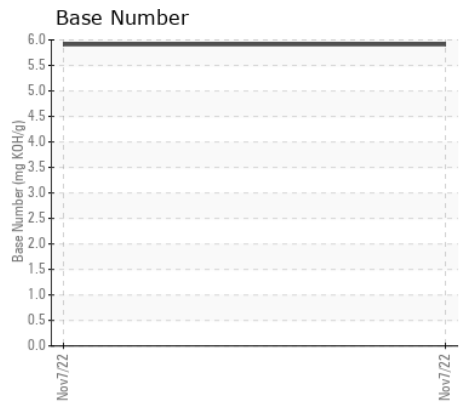
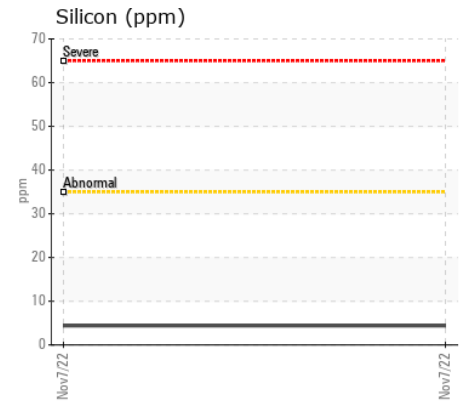
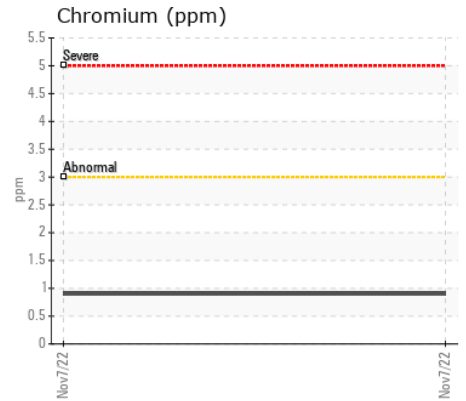
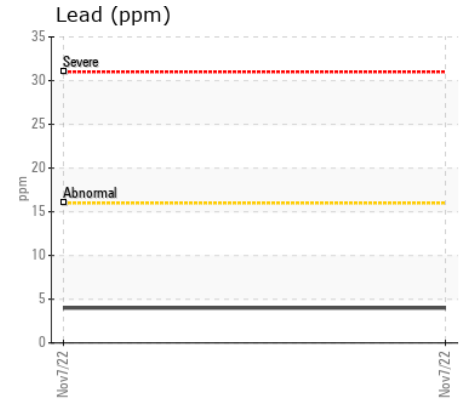
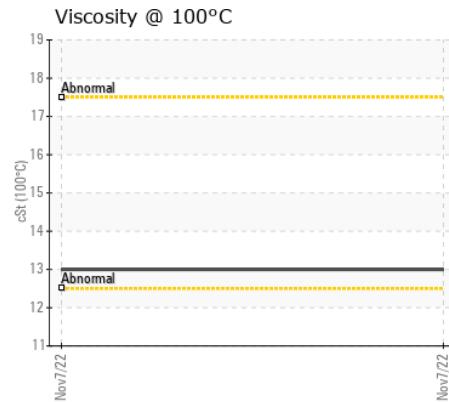
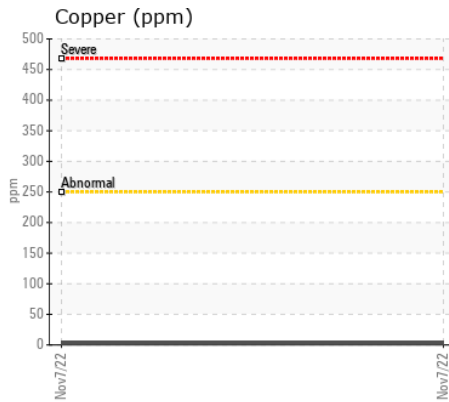
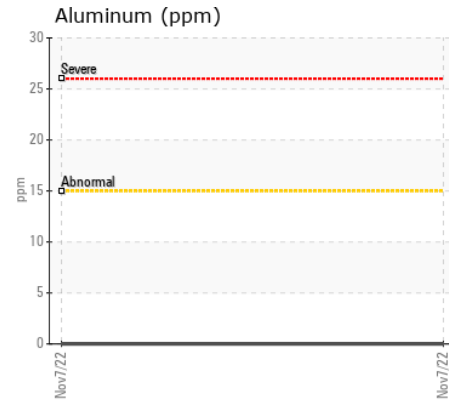
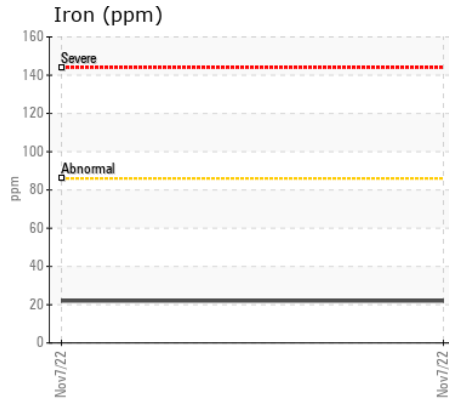
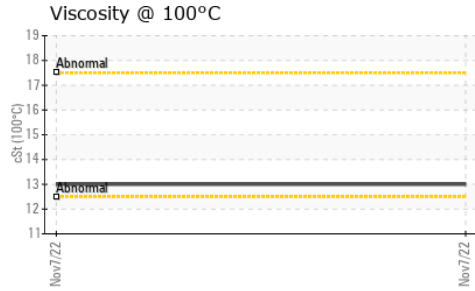
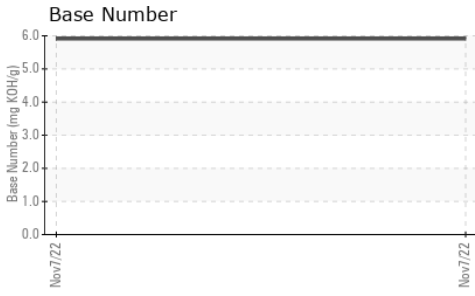
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>35	4	---	---
Potassium	ppm	ASTM D5185m	>20	6	---	---
Fuel		WC Method	>5	<1.0	---	---
Water		WC Method	>0.2	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	0.5	---	---
Nitration	Abs/cm	*ASTM D7624	>20	9.8	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.0	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	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	---	---
Boron	ppm	ASTM D5185m		4	---	---
Barium	ppm	ASTM D5185m		0	---	---
Molybdenum	ppm	ASTM D5185m		11	---	---
Manganese	ppm	ASTM D5185m		<1	---	---
Magnesium	ppm	ASTM D5185m		149	---	---
Calcium	ppm	ASTM D5185m		2097	---	---
Phosphorus	ppm	ASTM D5185m		866	---	---
Zinc	ppm	ASTM D5185m		1040	---	---
Sulfur	ppm	ASTM D5185m		4029	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.1	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		5.91	---	---
Visc @ 100°C	cSt	ASTM D445		13.0	---	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR05699923
Lab Number : 05699923
Unique Number : 10229497
Test Package : MOB 2
Received : 21 Nov 2022
Tested : 15 Feb 2024
Diagnosed : 16 Feb 2024 - Doug Bogart

BIGHORN LOGGING CORP
 13820 NW MAIN ST
 BANKS, OR
 US 97106
 Contact: JEFF 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)

T:
F: