



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
TOYOTA 14
 Component
Gasoline Engine
 Fluid
TRC PRO-SPEC MULTI-VIS SB 5W20 (5 QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR04871529	TR04784216	---
Sample Date		Client Info		11 Dec 2019	15 Jan 2019	---
Machine Age	mls	Client Info		124952	117457	---
Oil Age	mls	Client Info		7495	6887	---
Filter Age	mls	Client Info		7495	6887	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				NORMAL	NORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m		18	32	---
Chromium	ppm	ASTM D5185m		0	<1	---
Nickel	ppm	ASTM D5185m		<1	<1	---
Titanium	ppm	ASTM D5185m		0	<1	---
Silver	ppm	ASTM D5185m		0	0	---
Aluminum	ppm	ASTM D5185m		3	7	---
Lead	ppm	ASTM D5185m		0	0	---
Copper	ppm	ASTM D5185m		<1	1	---
Tin	ppm	ASTM D5185m		0	0	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

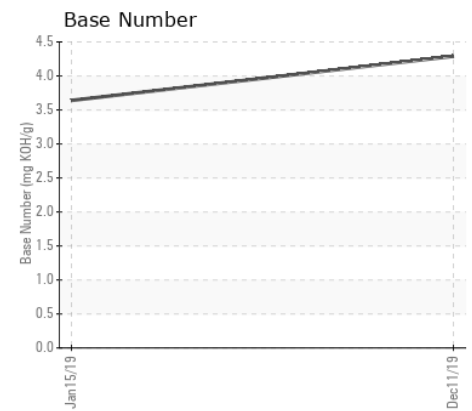
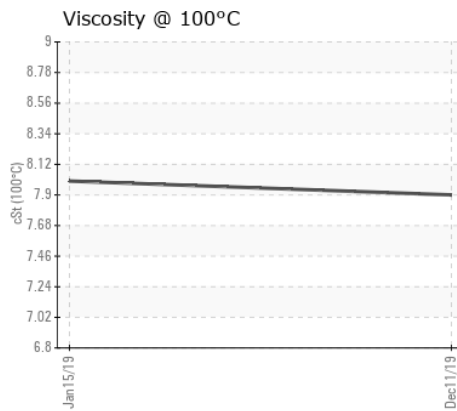
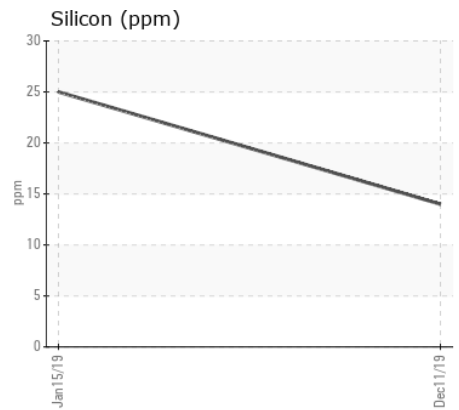
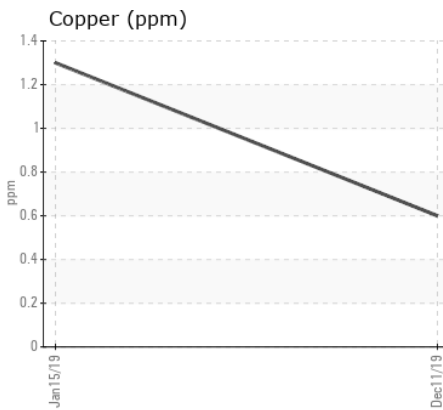
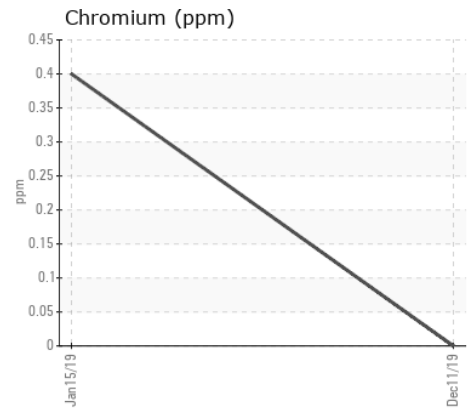
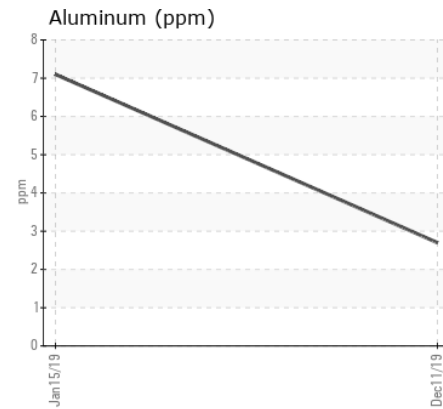
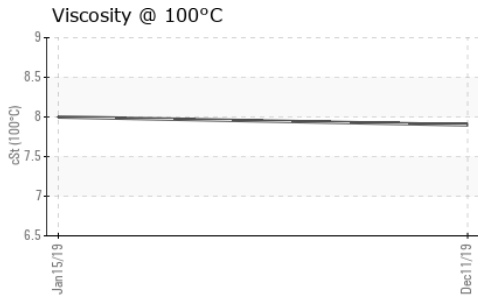
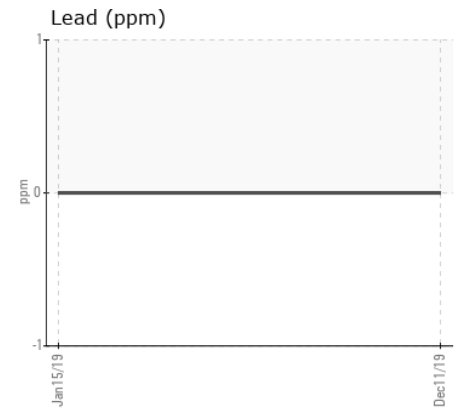
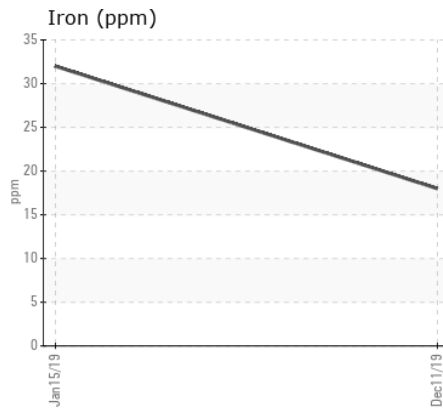
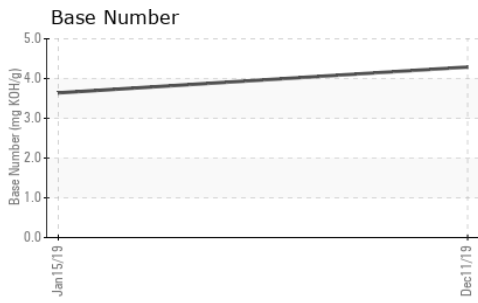
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m		14	25	---
Potassium	ppm	ASTM D5185m		2	8	---
Fuel		WC Method		<1.0	<1.0	---
Water		WC Method		NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844		0	0.1	---
Nitration	Abs/cm	*ASTM D7624		11	13.2	---
Sulfation	Abs/.1mm	*ASTM D7415		21.7	24.4	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual		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		4	9	---
Boron	ppm	ASTM D5185m		32	28	---
Barium	ppm	ASTM D5185m		0	2	---
Molybdenum	ppm	ASTM D5185m		141	135	---
Manganese	ppm	ASTM D5185m		<1	<1	---
Magnesium	ppm	ASTM D5185m		29	60	---
Calcium	ppm	ASTM D5185m		1935	2007	---
Phosphorus	ppm	ASTM D5185m		582	623	---
Zinc	ppm	ASTM D5185m		752	803	---
Sulfur	ppm	ASTM D5185m		1692	1831	---
Oxidation	Abs/.1mm	*ASTM D7414		15.8	19.6	---
Base Number (BN)	mg KOH/g	ASTM D2896		4.29	3.64	---
Visc @ 100°C	cSt	ASTM D445		7.9	8.0	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR04871529
Lab Number : 04871529
Unique Number : 8856525
Test Package : MOB 2

Received : 19 Dec 2019
Tested : 20 Dec 2019
Diagnosed : 20 Dec 2019 - Wes Davis

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 US 56159
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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)