



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
1997 PETERBILT 97 PETE

Component
Diesel Engine

Fluid
TRC MOLY XL PRO-SPEC IV 15W40 (10 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR04155219	TR04139948	TR03642197
Sample Date		Client Info		30 Jan 2017	23 Sep 2016	15 Sep 2014
Machine Age	mls	Client Info		518141	517434	513927
Oil Age	mls	Client Info		707	3507	5190
Filter Age	mls	Client Info		707	3507	5190
Oil Changed		Client Info		Not Changd	Changed	Changed
Filter Changed		Client Info		Not Changd	Changed	Changed
Sample Status				NORMAL	SEVERE	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	4	23	12
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>25	4	4	4
Lead	ppm	ASTM D5185m	>40	<1	▲ 20	<1
Copper	ppm	ASTM D5185m	>330	18	▲ 256	4
Tin	ppm	ASTM D5185m	>15	0	▲ 10	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

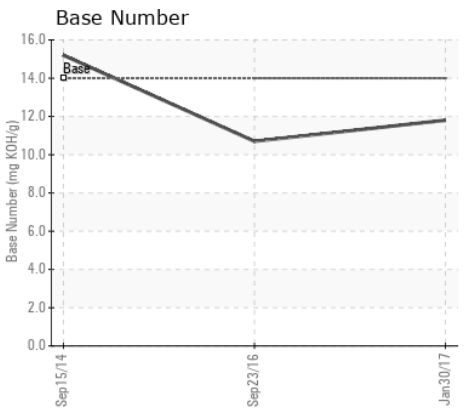
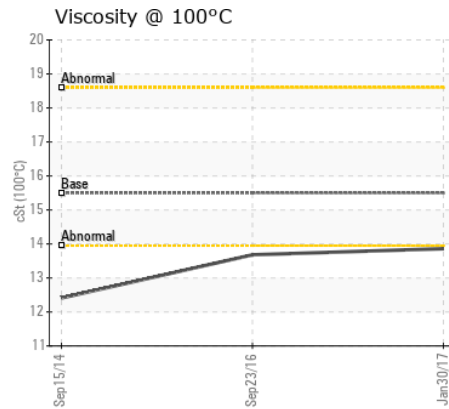
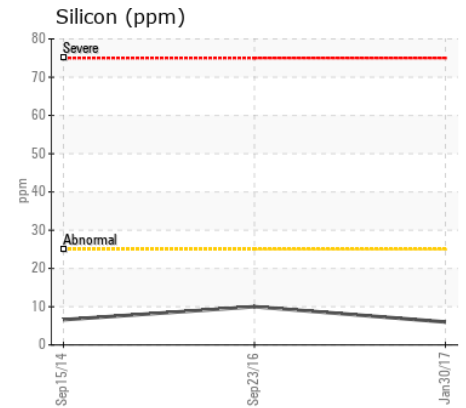
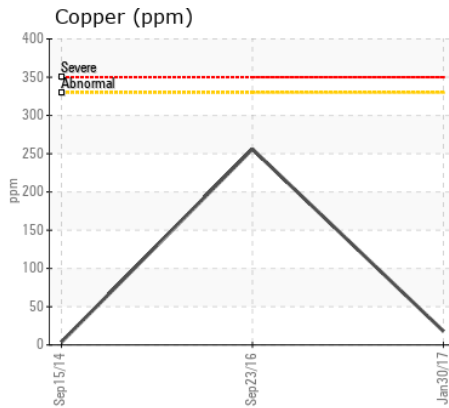
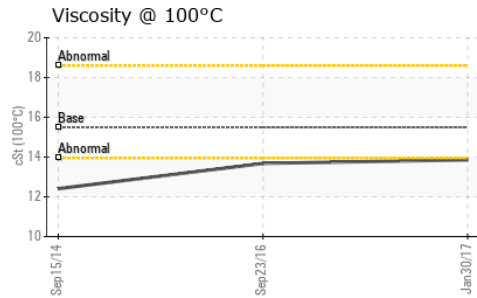
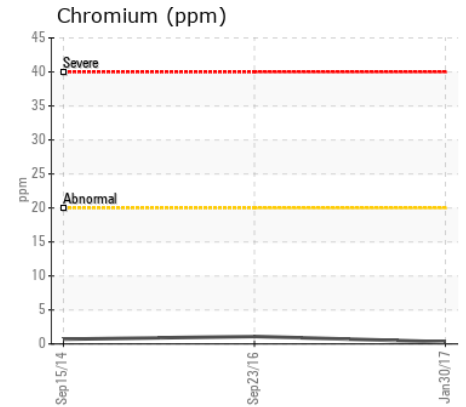
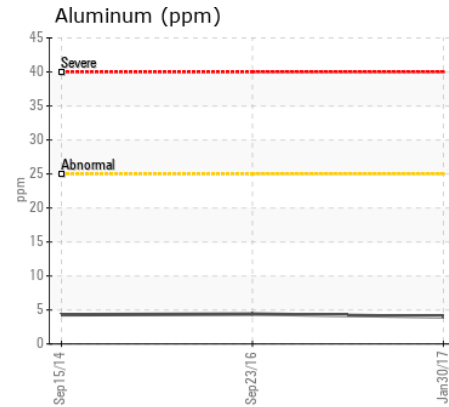
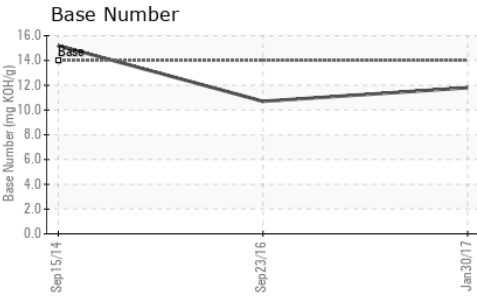
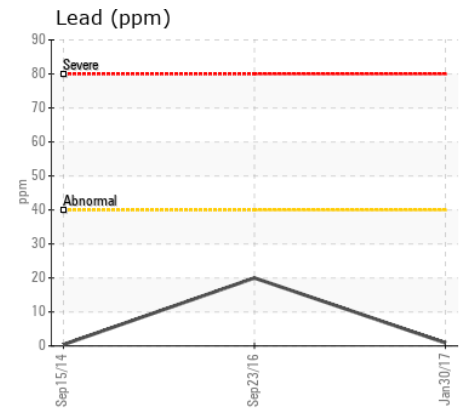
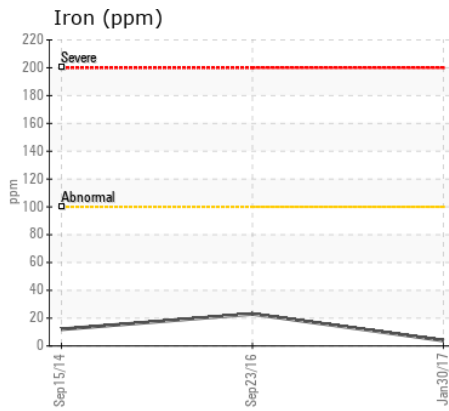
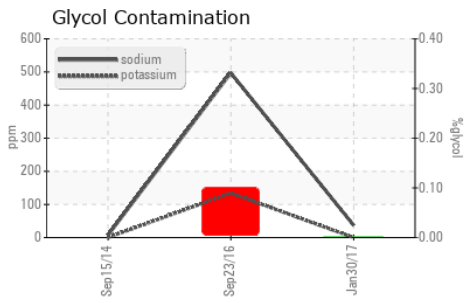
Test for glycol is negative. There is no indication of any contamination in the component.

Silicon	ppm	ASTM D5185m	>25	6	10	7
Potassium	ppm	ASTM D5185m	>20	0	▲ 134	<1
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		0.0	■ 0.10	NEG
Soot %	%	*ASTM D7844	>3	0	0	0.1
Nitration	Abs/cm	*ASTM D7624		6.	8.	7.
Sulfation	Abs/.1mm	*ASTM D7415		16.	17.	19.
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		37	▲ 497	7
Boron	ppm	ASTM D5185m		2	23	197
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		171	230	194
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		775	801	397
Calcium	ppm	ASTM D5185m	1300	1600	1700	4365
Phosphorus	ppm	ASTM D5185m		1067	1132	1014
Zinc	ppm	ASTM D5185m	1300	1197	1283	1183
Sulfur	ppm	ASTM D5185m		3465	3964	3822
Oxidation	Abs/.1mm	*ASTM D7414		11.	13.	13.
Base Number (BN)	mg KOH/g	ASTM D2896	14	11.8	10.7	15.2
Visc @ 100°C	cSt	ASTM D445	15.5	13.86	13.68	12.41



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR04155219
Lab Number : 04155219
Unique Number : 7688627
Test Package : MOB 2
Received : 02 Feb 2017
Tested : 06 Feb 2017
Diagnosed : 06 Feb 2017 - Doug Bogart

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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)