



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
CHALLENGE 14-211

Component
Hydraulic System

Fluid
TRC HYDRAULIC OIL ISO 32- SAE10W (--- GAL)

RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR02270019	TR02149283	TR01728068
Sample Date		Client Info		15 Oct 2008	06 Apr 2008	16 Apr 2006
Machine Age	mls	Client Info		0	0	0
Oil Age	mls	Client Info		0	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	Not Changd	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m		2	<1	4
Chromium	ppm	ASTM D5185m		0	0	<1
Nickel	ppm	ASTM D5185m		0	<1	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m		3	3	11
Lead	ppm	ASTM D5185m		2	0	0
Copper	ppm	ASTM D5185m		<1	<1	4
Tin	ppm	ASTM D5185m		<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	▲ HEAVY	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

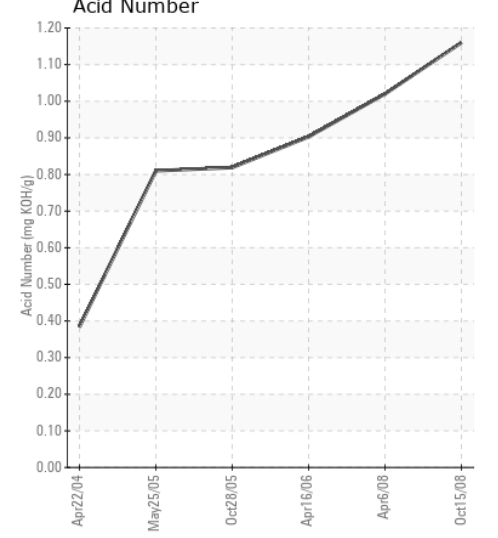
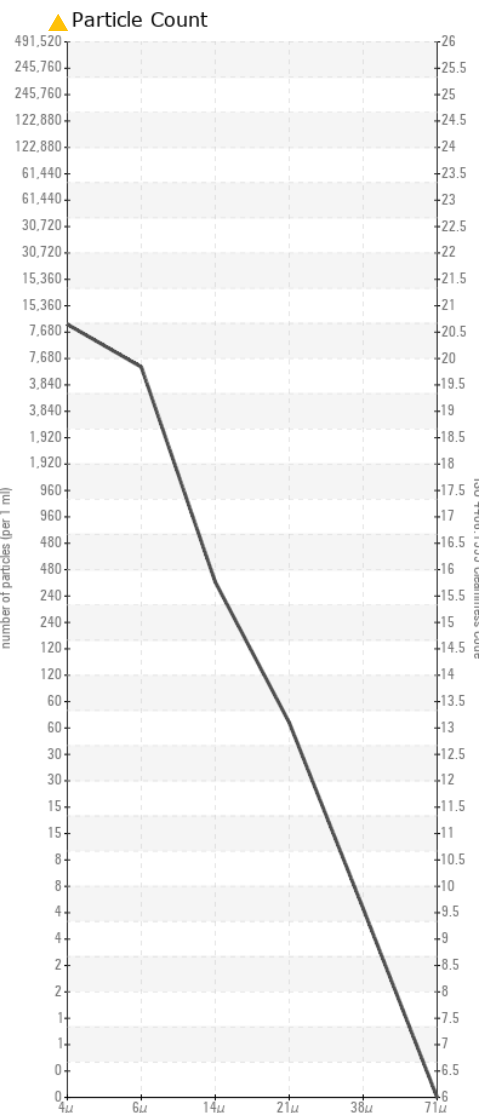
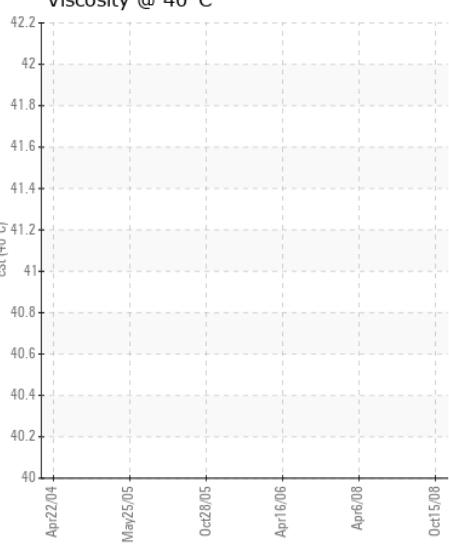
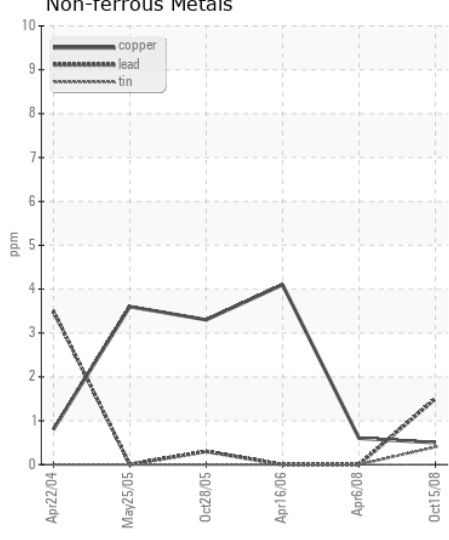
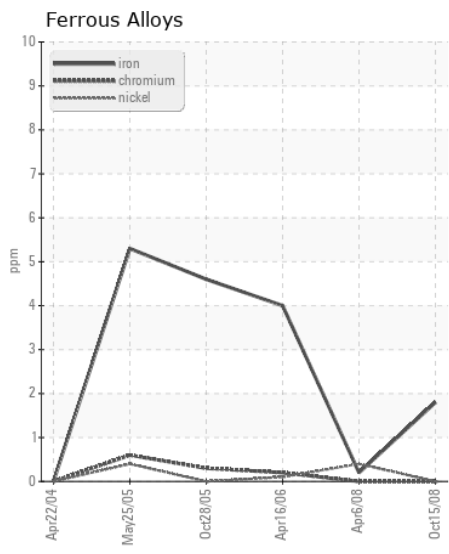
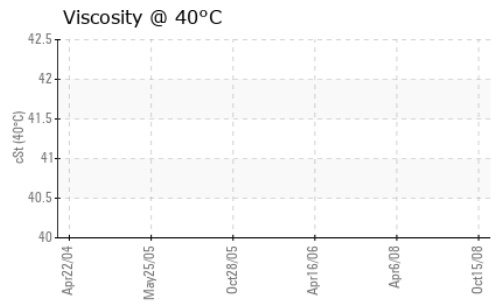
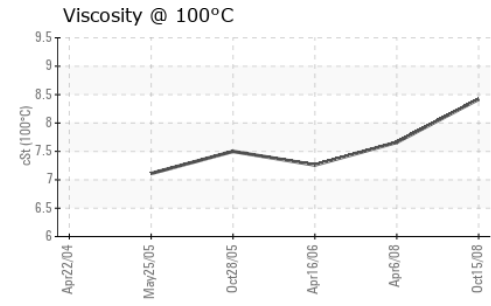
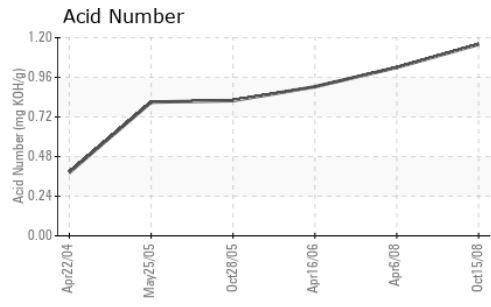
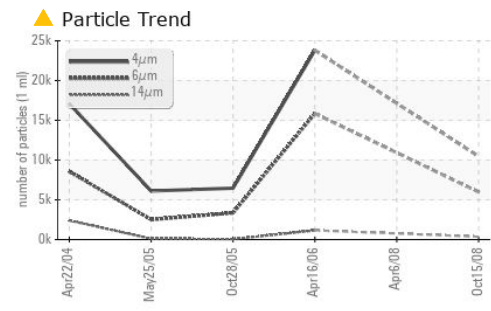
There is a high amount of particulates present in the oil.

Silicon	ppm	ASTM D5185m		8	<1	0
Potassium	ppm	ASTM D5185m		<1	0	6
Water		WC Method		NEG	NEG	NEG
Particles >4µm		ASTM D7647		10461	---	23810
Particles >6µm		ASTM D7647		▲ 5985	---	▲ 15857
Particles >14µm		ASTM D7647		▲ 359	---	▲ 1151
Particles >21µm		ASTM D7647		▲ 57	---	▲ 54
Particles >38µm		ASTM D7647		5	---	3
Particles >71µm		ASTM D7647		0	---	0
Oil Cleanliness		ISO 4406 (c)		▲ 21/20/16	---	▲ 22/21/17
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	▲ MODER	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		NEG	NEG	NEG

FLUID CONDITION

The condition of oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<1	1	<1
Boron	ppm	ASTM D5185m		0	<1	<1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	0	<1
Manganese	ppm	ASTM D5185m		1	0	0
Magnesium	ppm	ASTM D5185m		0	0	13
Calcium	ppm	ASTM D5185m		102	110	238
Phosphorus	ppm	ASTM D5185m		860	884	668
Zinc	ppm	ASTM D5185m		936	971	768
Sulfur	ppm	ASTM D5185m		6676	6950	3852
Acid Number (AN)	mg KOH/g	ASTM D8045		1.16	1.02	0.903
Visc @ 100°C	cSt	ASTM D445		8.42	7.66	7.26



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR02270019 **Received** : 16 Oct 2008
Lab Number : 02270019 **Tested** : 20 Oct 2008
Unique Number : 4609596 **Diagnosed** : 20 Oct 2008 - Doug Bogart
Test Package : MOB 2 (Additional Tests: KV100)

MERILLAT IND
 P.O. BOX 259
 ATKINS, VA
 US 24311
 Contact: MAURA HARVEY

Certificate L2367
 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)