



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL

Machine Id
BABY (S/N H08A0498022)
 Component
Hydraulic System
 Fluid
TRC HYDRAULIC OIL 15W (498 GAL)

RECOMMENDATION

We recommend that you use depth or electrostatic filtration to remove insolubles from the oil and to reduce the levels of varnish in the system. Alternatively draining a percentage of the oil and topping up with fresh oil (sweetening the oil) may provide a reduction in the varnish potential level. Please note that this is a corrected copy for laboratory data and diagnostic comment updates.

WEAR

All component wear rates are normal.

CONTAMINATION

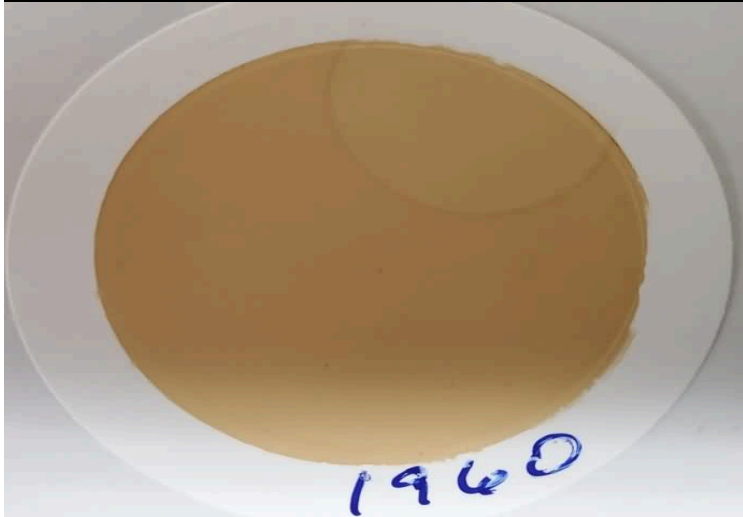
MPC (Membrane Patch Colorimetry) test indicates a high concentration of varnish present. The amount and size of particulates present in the system are acceptable.

FLUID CONDITION

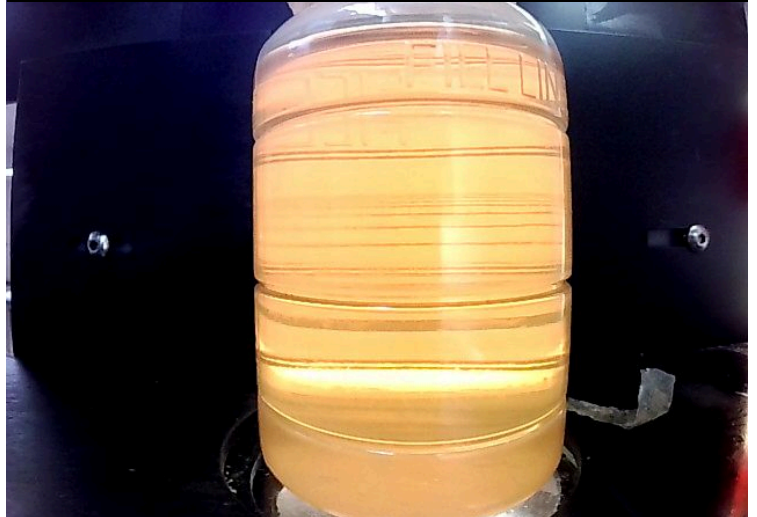
The AN level is acceptable for this fluid.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06151960	TR05563495	TR05106324
Sample Date		Client Info		30 Mar 2024	03 Jun 2022	30 Oct 2020
Machine Age	hrs	Client Info		140112	5760	10120
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changed	Not Changed	Not Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>20	<1	<1	1
Chromium	ppm	ASTM D5185m	>10	0	0	<1
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	<1	1
Aluminum	ppm	ASTM D5185m	>10	0	0	0
Lead	ppm	ASTM D5185m	>10	0	0	<1
Copper	ppm	ASTM D5185m	>75	<1	2	22
Tin	ppm	ASTM D5185m	>10	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	0	<1	0
Potassium	ppm	ASTM D5185m	>20	11	0	0
Water		WC Method	>0.1	NEG	NEG	NEG
MPC Varnish Potential	Scale	ASTM D7843	>15	▲ 43	---	---
Particles >4µm		ASTM D7647	>5000	2332	4202	1899
Particles >6µm		ASTM D7647	>1300	599	862	459
Particles >14µm		ASTM D7647	>160	35	62	50
Particles >21µm		ASTM D7647	>40	7	13	16
Particles >38µm		ASTM D7647	>10	0	2	2
Particles >71µm		ASTM D7647	>3	0	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	18/16/12	19/17/13	18/16/13
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	>0.1	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m		4	0	<1
Boron	ppm	ASTM D5185m		0	0	2
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	0	0
Manganese	ppm	ASTM D5185m		0	0	0
Magnesium	ppm	ASTM D5185m		0	0	<1
Calcium	ppm	ASTM D5185m		86	98	83
Phosphorus	ppm	ASTM D5185m		640	707	734
Zinc	ppm	ASTM D5185m		779	938	907
Sulfur	ppm	ASTM D5185m		1682	1744	1698
Acid Number (AN)	mg KOH/g	ASTM D8045		0.61	0.77	0.631
Visc @ 40°C	cSt	ASTM D445	46	46.7	---	---
Visc @ 100°C	cSt	ASTM D445	6.3	7.1	7.1	7.1
Viscosity Index (VI)	Scale	ASTM D2270		110	---	---

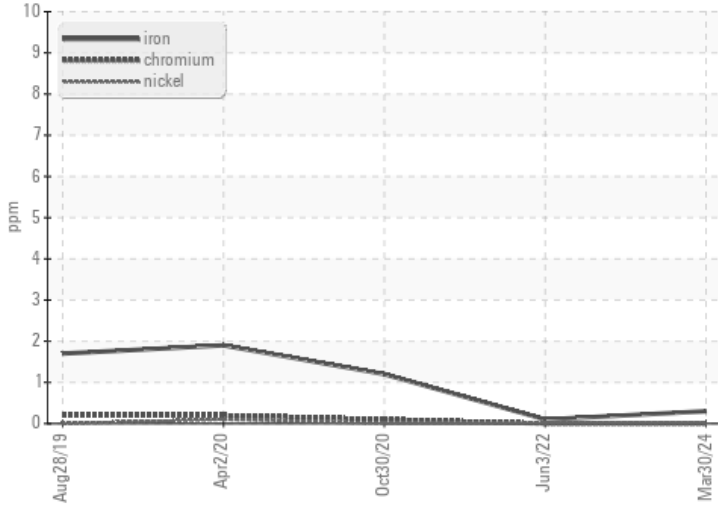
MPC (Varnish Test)



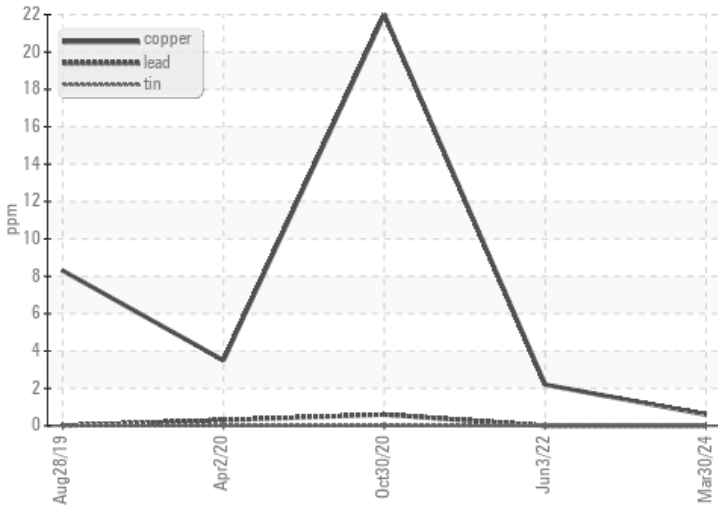
Sample Color & Clarity



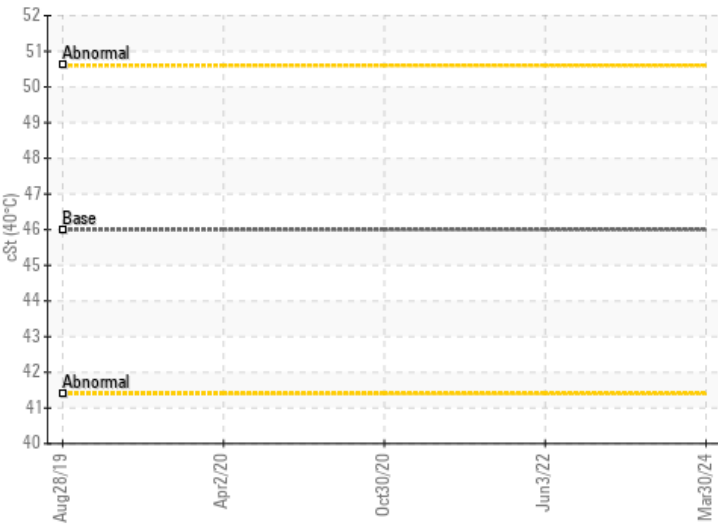
Ferrous Alloys



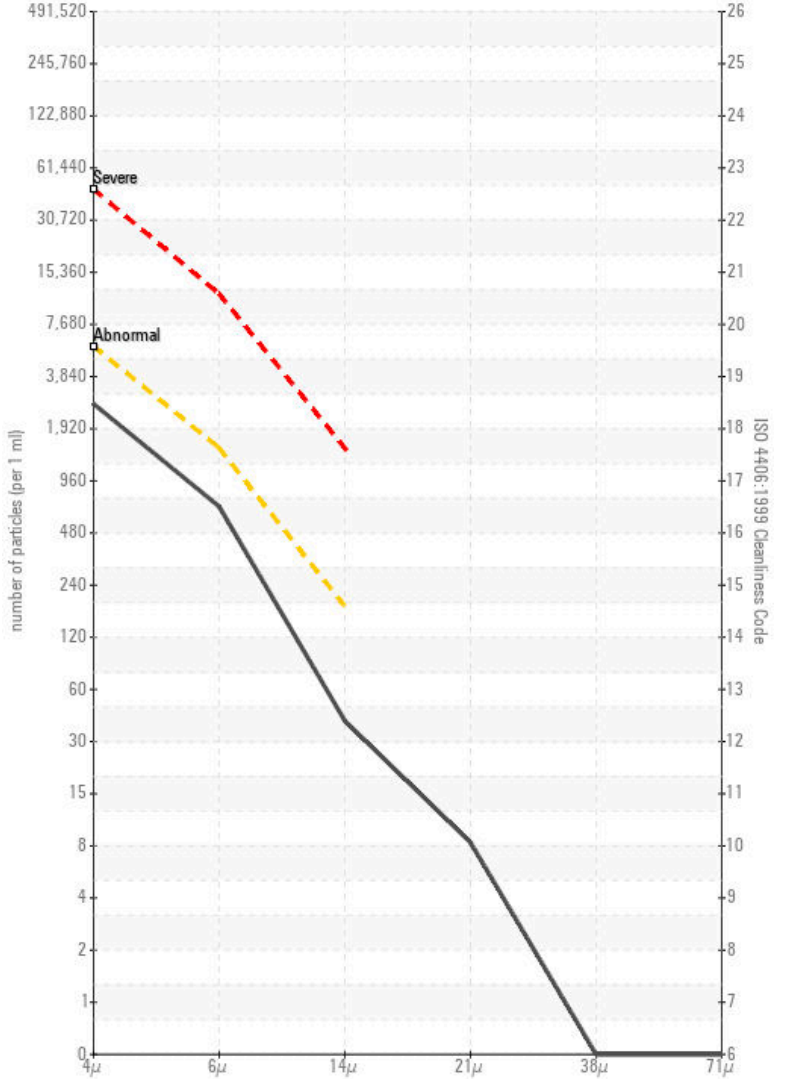
Non-ferrous Metals



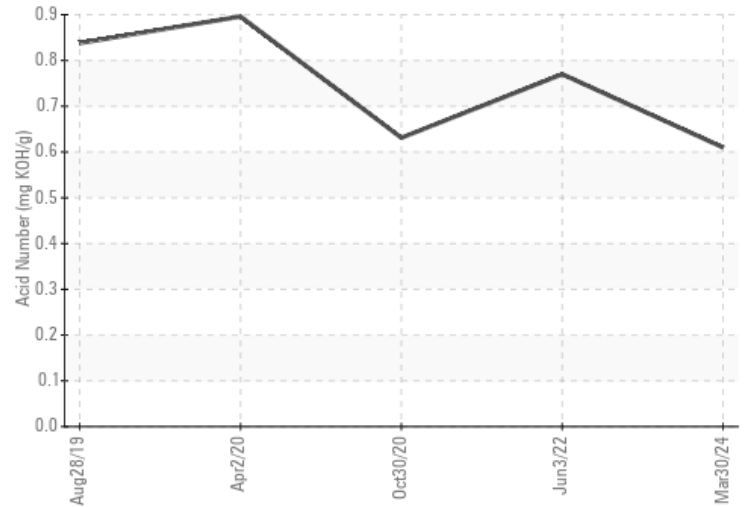
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06151960
Lab Number : 06151960
Unique Number : 10982038
Test Package : MOB 2 (Additional Tests: KV100, MPC, VI)

Received : 17 Apr 2024
Tested : 12 May 2024
Diagnosed : 12 May 2024 - Doug Bogart

PELICAN PRODUCTS INC
 23215 EARLY AVE
 TORRANCE, CA
 US 90505
 Contact: NORMAN MASSON

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)

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