



TRAAP

Texas Refinery Advanced Analysis Program

# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>ABNORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**SHAMU (S/N H32A0200006)**  
 Component  
**Hydraulic System**  
 Fluid  
**TRC HYDRAULIC OIL 15W (550 GAL)**

## RECOMMENDATION

No corrective action is recommended at this time. We recommend an early resample to monitor this condition. 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

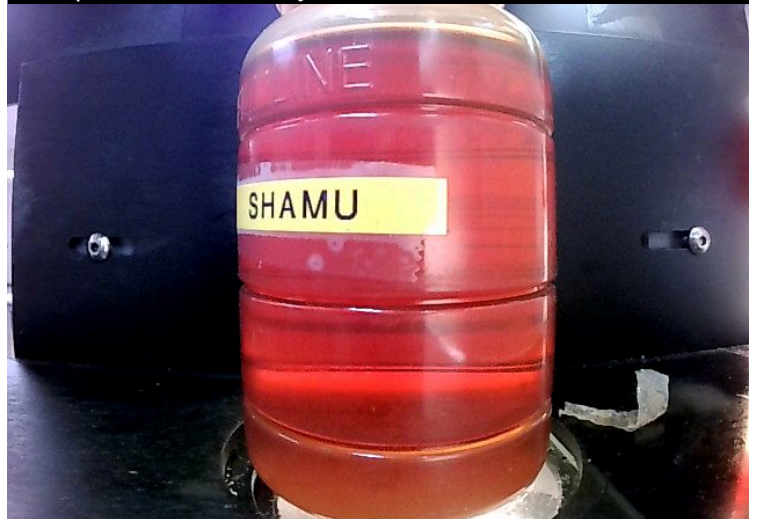
The AN level is acceptable for this fluid.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>TR06151961</b>	TR05563500	TR05106332
Sample Date		Client Info		<b>30 Mar 2024</b>	03 Jun 2022	30 Oct 2020
Machine Age	hrs	Client Info		<b>11608</b>	2496	17280
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changed</b>	Not Changed	Not Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL
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Iron	ppm	ASTM D5185m	>20	<b>2</b>	<1	4
Chromium	ppm	ASTM D5185m	>10	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Lead	ppm	ASTM D5185m	>10	<b>0</b>	0	<1
Copper	ppm	ASTM D5185m	>75	<b>&lt;1</b>	1	6
Tin	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
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Silicon	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Potassium	ppm	ASTM D5185m	>20	<b>10</b>	0	0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
MPC Varnish Potential	Scale	ASTM D7843	>15	<b>39</b>	---	---
Particles >4µm		ASTM D7647	>5000	<b>1683</b>	4959	2296
Particles >6µm		ASTM D7647	>1300	<b>463</b>	1128	557
Particles >14µm		ASTM D7647	>160	<b>53</b>	70	53
Particles >21µm		ASTM D7647	>40	<b>13</b>	14	19
Particles >38µm		ASTM D7647	>10	<b>1</b>	0	4
Particles >71µm		ASTM D7647	>3	<b>1</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>18/16/13</b>	19/17/13	18/16/13
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	LIGHT
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	NEG	NEG
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Sodium	ppm	ASTM D5185m		<b>3</b>	0	1
Boron	ppm	ASTM D5185m		<b>0</b>	0	2
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	0	<1
Manganese	ppm	ASTM D5185m		<b>0</b>	0	0
Magnesium	ppm	ASTM D5185m		<b>0</b>	0	<1
Calcium	ppm	ASTM D5185m		<b>54</b>	67	64
Phosphorus	ppm	ASTM D5185m		<b>640</b>	696	699
Zinc	ppm	ASTM D5185m		<b>716</b>	890	797
Sulfur	ppm	ASTM D5185m		<b>1652</b>	1768	1783
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.85</b>	0.69	0.710
Visc @ 40°C	cSt	ASTM D445	46	<b>45.8</b>	---	---
Visc @ 100°C	cSt	ASTM D445	6.3	<b>6.9</b>	7.1	7.1
Viscosity Index (VI)	Scale	ASTM D2270		<b>106</b>	---	---

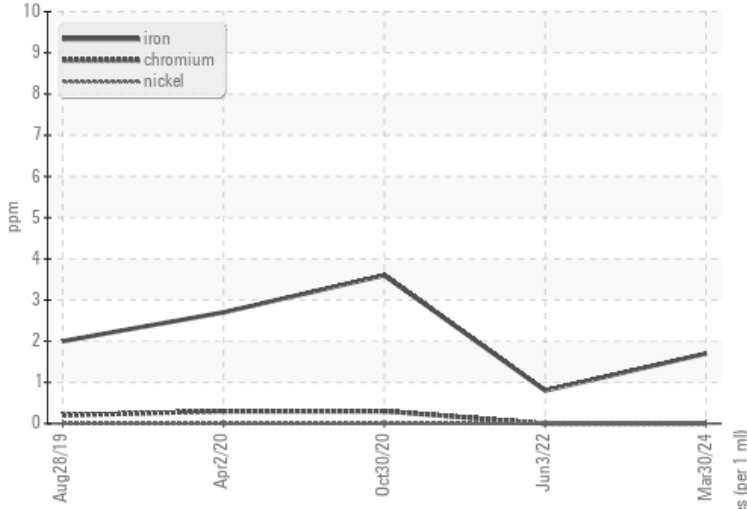
MPC (Varnish Test)



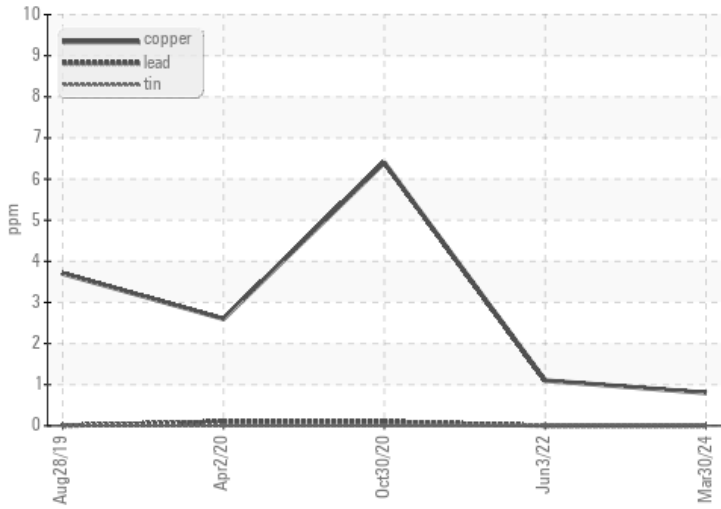
Sample Color & Clarity



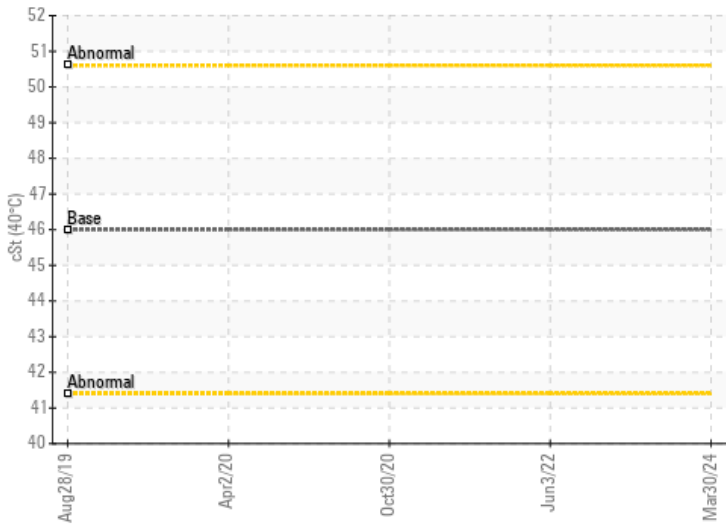
### Ferrous Alloys



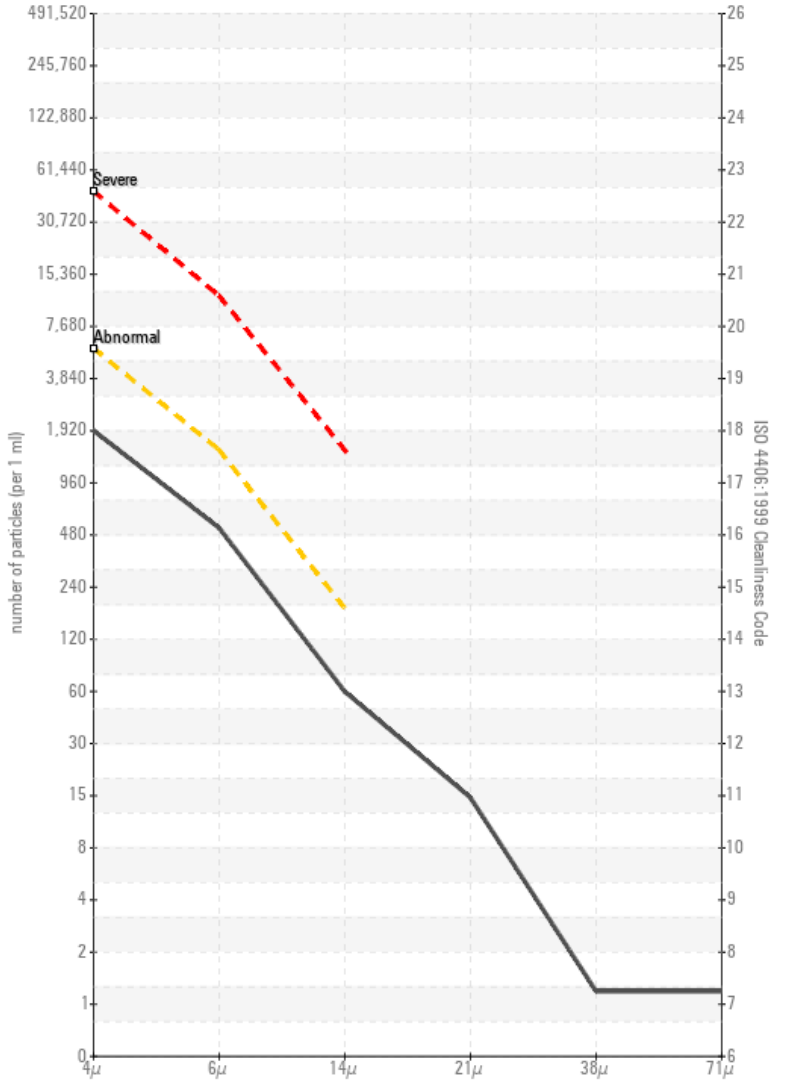
### Non-ferrous Metals



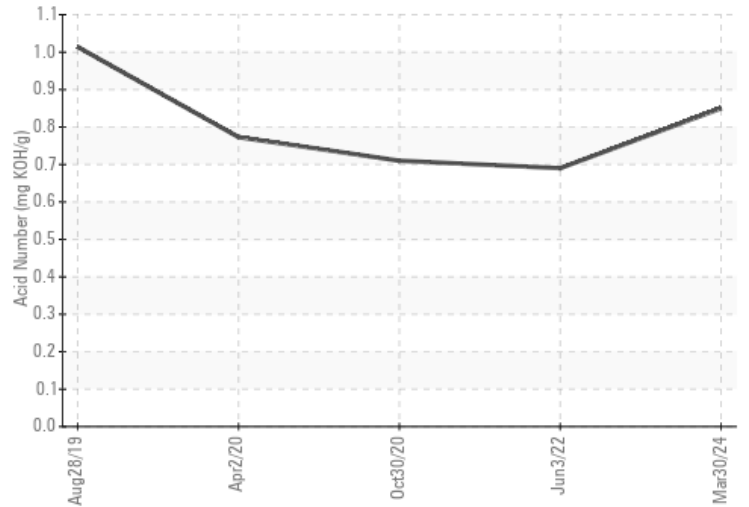
### Viscosity @ 40°C



### Particle Count



### Acid Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : TR06151961  
**Lab Number** : 06151961  
**Unique Number** : 10982039  
**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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