



# OIL ANALYSIS REPORT

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

Machine Id  
**ENDEAVOR - CLUTCH (S/N 963268)**  
 Component  
**Port Hydraulic System**  
 Fluid  
**SHELL TELLUS S2 MX 46 (30 GAL)**

## RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0834568</b>	WC0834562	---
Sample Date		Client Info		<b>26 Apr 2024</b>	06 Jul 2023	---
Machine Age	hrs	Client Info		<b>15478</b>	13761	---
Oil Age	hrs	Client Info		<b>0</b>	13761	---
Filter Age	hrs	Client Info		<b>0</b>	13761	---
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	---
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	---
Sample Status				<b>ABNORMAL</b>	ABNORMAL	---

## WEAR

The copper level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	---
Chromium	ppm	ASTM D5185m	>20	<b>0</b>	0	---
Nickel	ppm	ASTM D5185m	>20	<b>0</b>	0	---
Titanium	ppm	ASTM D5185m		<b>0</b>	0	---
Silver	ppm	ASTM D5185m		<b>0</b>	0	---
Aluminum	ppm	ASTM D5185m	>20	<b>0</b>	0	---
Lead	ppm	ASTM D5185m	>20	<b>0</b>	0	---
Copper	ppm	ASTM D5185m	>20	<b>▲ 53</b>	▲ 47	---
Tin	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

## CONTAMINATION

The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

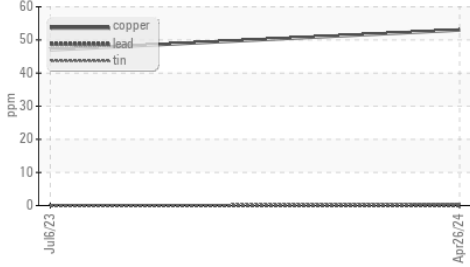
Silicon	ppm	ASTM D5185m	>15	<b>&lt;1</b>	0	---
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	0	---
Water		WC Method	>0.05	<b>NEG</b>	NEG	---
Particles >4µm		ASTM D7647	>5000	<b>1203</b>	1704	---
Particles >6µm		ASTM D7647	>1300	<b>207</b>	294	---
Particles >14µm		ASTM D7647	>160	<b>16</b>	21	---
Particles >21µm		ASTM D7647	>40	<b>3</b>	4	---
Particles >38µm		ASTM D7647	>10	<b>0</b>	1	---
Particles >71µm		ASTM D7647	>3	<b>0</b>	0	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>17/15/11</b>	18/15/12	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.05	<b>NEG</b>	NEG	---

## FLUID CONDITION

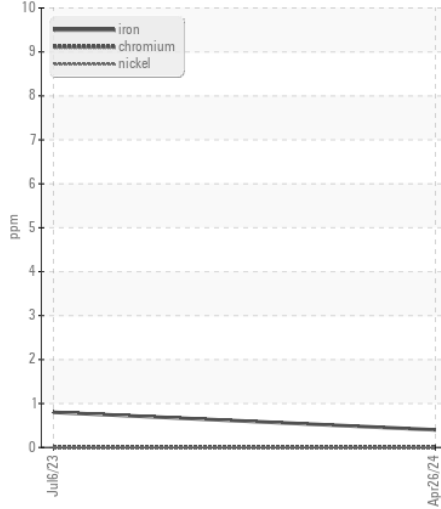
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>1</b>	<1	---
Boron	ppm	ASTM D5185m	0	<b>0</b>	0	---
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	---
Molybdenum	ppm	ASTM D5185m	0	<b>0</b>	<1	---
Manganese	ppm	ASTM D5185m	0	<b>1</b>	<1	---
Magnesium	ppm	ASTM D5185m	70	<b>0</b>	0	---
Calcium	ppm	ASTM D5185m	10	<b>76</b>	82	---
Phosphorus	ppm	ASTM D5185m	300	<b>314</b>	328	---
Zinc	ppm	ASTM D5185m	325	<b>380</b>	402	---
Sulfur	ppm	ASTM D5185m	665	<b>1640</b>	1810	---
Acid Number (AN)	mg KOH/g	ASTM D8045	0.35	<b>0.33</b>	0.34	---
Visc @ 40°C	cSt	ASTM D445	46.0	<b>43.6</b>	43.7	---

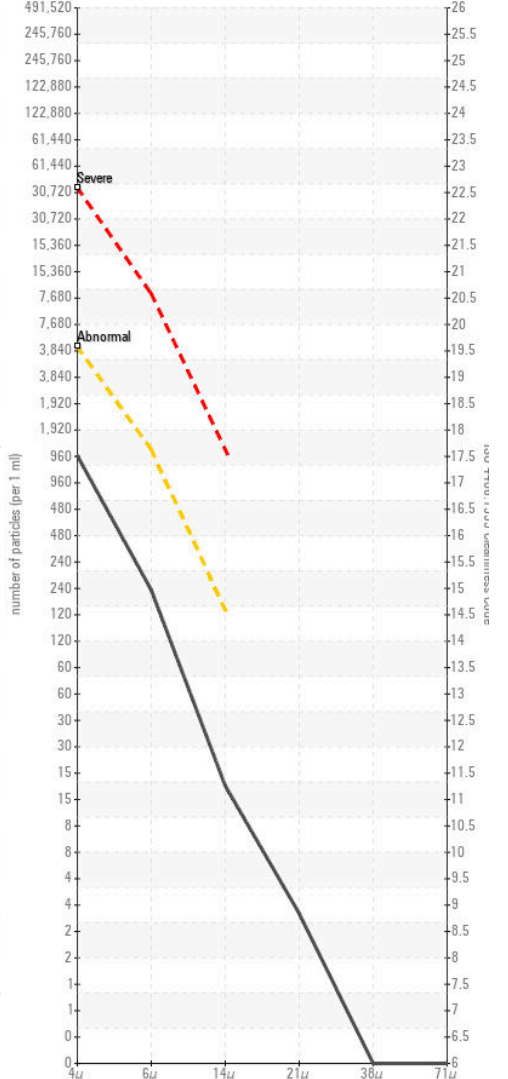
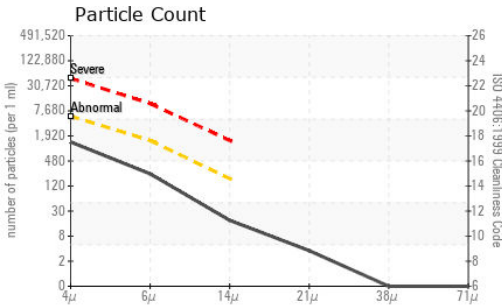
**▲ Non-ferrous Metals**



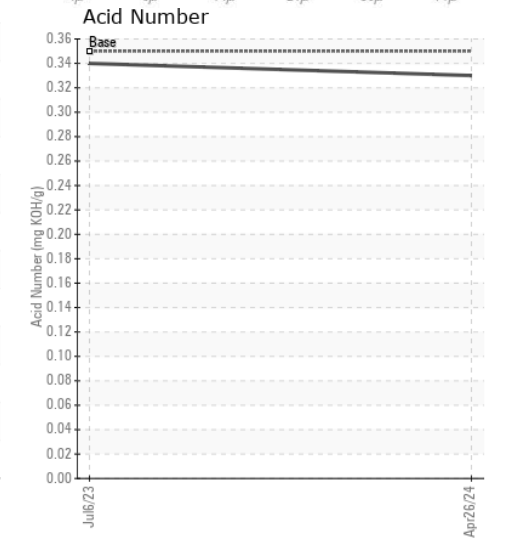
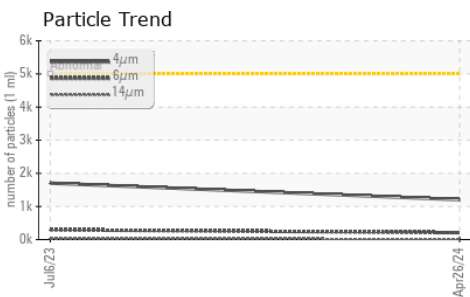
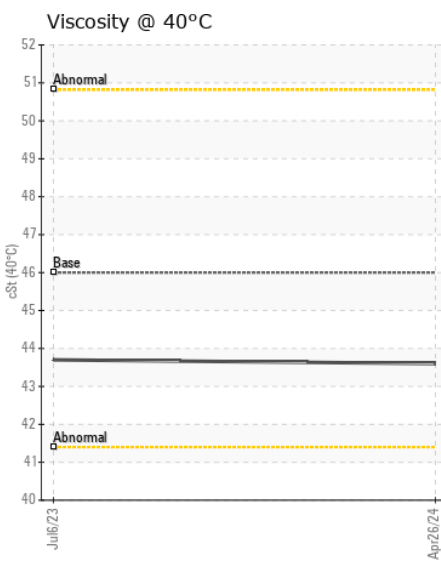
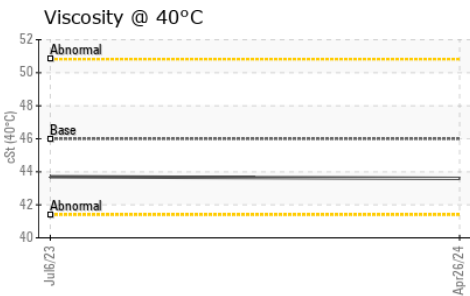
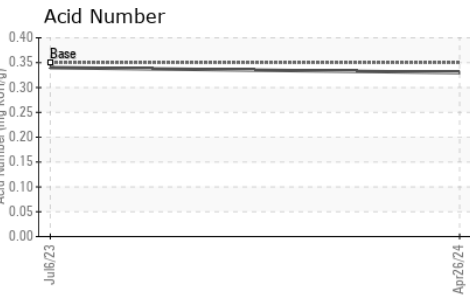
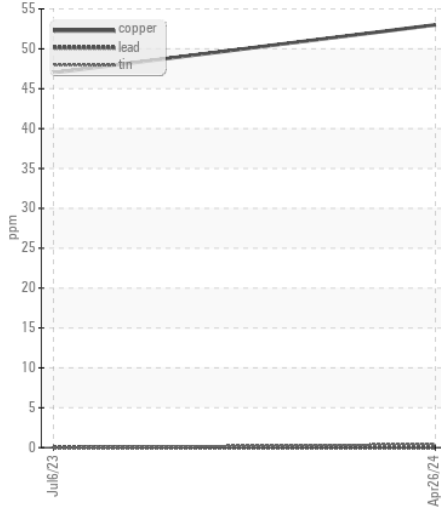
**Ferrous Alloys**



**Particle Count**



**▲ Non-ferrous Metals**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0834568  
**Lab Number** : 06177073  
**Unique Number** : 11023126  
**Test Package** : MAR 2

**Received** : 13 May 2024  
**Tested** : 14 May 2024  
**Diagnosed** : 17 May 2024 - Jonathan Hester

**CITY EXPERIENCES - SEAWARD EXPLORER**  
 2825 5TH AVENUE  
 SAN DIEGO, CA  
 US 92103  
 Contact: PETER CHARBONNET

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - 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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F: