



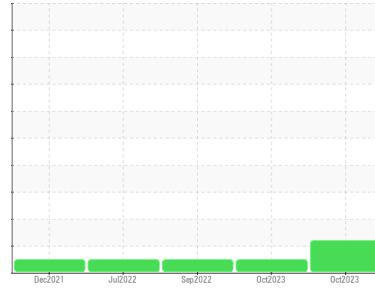
PROBLEM SUMMARY

Sample Rating Trend

ISO

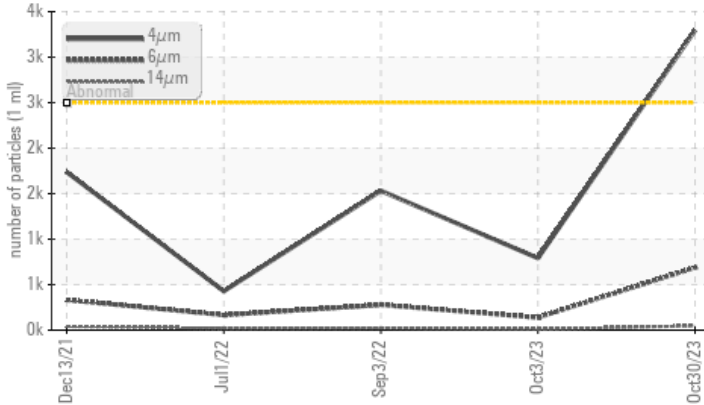


Area
OCEAN VOYAGER
 Machine Id
[OCEAN VOYAGER] OCEAN VOYAGER STEERING PT
 Component
Port Steering
 Fluid
CASTROL HYSPIN AWH-M ISO 32 (40 LTR)



COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

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

PROBLEMATIC TEST RESULTS

Sample Status			ATTENTION	NORMAL	NORMAL
Particles >4µm	ASTM D7647	>2500	▲ 3295	791	1532
Particles >6µm	ASTM D7647	>640	▲ 688	138	278
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ 19/17/13	17/14/10	18/15/12

Customer Id: VICNEWIN
 Sample No.: WC0824866
 Lab Number: 06006268
 Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Doug Bogart +1 (800)237-1369 x4016
dougb@wearcheckusa.com

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

03 Oct 2023 Diag: Doug Bogart

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the fluid. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

view report



03 Sep 2022 Diag: Jonathan Hester

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the fluid. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

view report



01 Jul 2022 Diag: Jonathan Hester

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the fluid. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

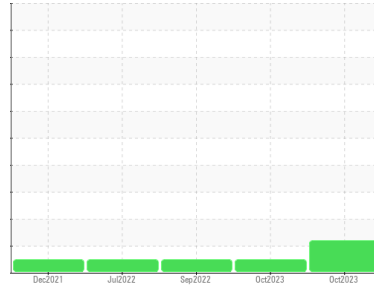
view report





OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area
OCEAN VOYAGER
 Machine Id
[OCEAN VOYAGER] OCEAN VOYAGER STEERING PT
 Component
Port Steering
 Fluid
CASTROL HYSPIN AWH-M ISO 32 (40 LTR)

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the fluid.

Fluid Condition

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

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0824866	WC0824579	WC0693025
Sample Date	Client Info		30 Oct 2023	03 Oct 2023	03 Sep 2022
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			ATTENTION	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >60	6	22	7
Chromium	ppm	ASTM D5185m >12	0	<1	0
Nickel	ppm	ASTM D5185m >6	0	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >4	0	2	0
Lead	ppm	ASTM D5185m >12	<1	<1	0
Copper	ppm	ASTM D5185m >30	6	5	6
Tin	ppm	ASTM D5185m	<1	0	0
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	0
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	0	0	<1
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	1	2	0
Calcium	ppm	ASTM D5185m	117	126	138
Phosphorus	ppm	ASTM D5185m	418	388	439
Zinc	ppm	ASTM D5185m	537	510	551
Sulfur	ppm	ASTM D5185m	3234	3847	4143

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >10	1	<1	<1
Sodium	ppm	ASTM D5185m	0	0	0
Potassium	ppm	ASTM D5185m >20	0	<1	0

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	▲ 3295	791	1532
Particles >6µm	ASTM D7647	>640	▲ 688	138	278
Particles >14µm	ASTM D7647	>80	47	9	22
Particles >21µm	ASTM D7647	>20	11	3	9
Particles >38µm	ASTM D7647	>4	1	0	0
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ 19/17/13	17/14/10	18/15/12

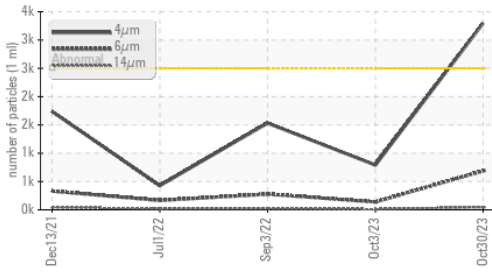
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.68	0.52	0.58

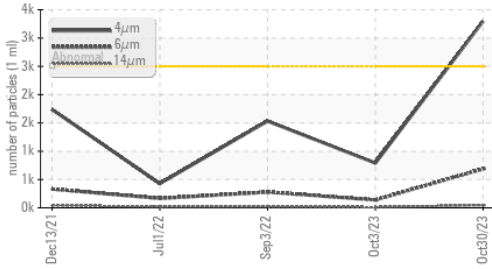


OIL ANALYSIS REPORT

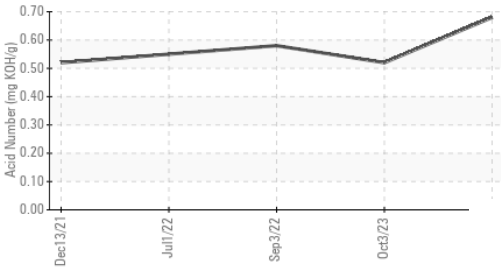
▲ Particle Trend



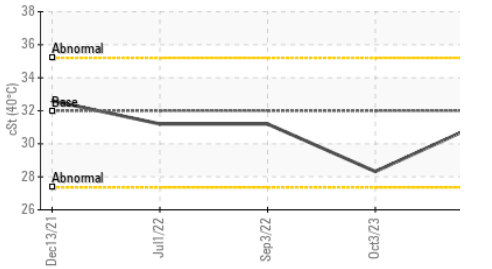
▲ Particle Trend



Acid Number



Viscosity @ 40°C



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	VLITE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	NEG	NEG	NEG
Free Water	scalar	*Visual	NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	32.0	31.3	28.32

SAMPLE IMAGES	method	limit/base	current	history1	history2
---------------	--------	------------	---------	----------	----------

Color

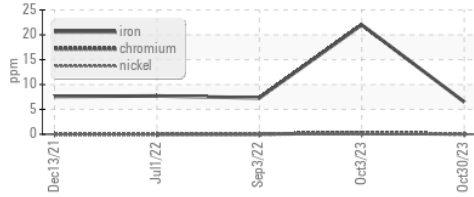


Bottom

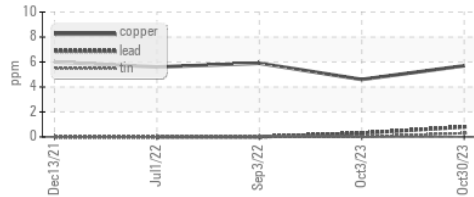


GRAPHS

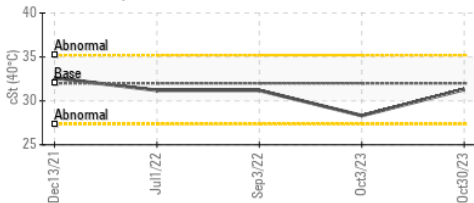
Ferrous Alloys



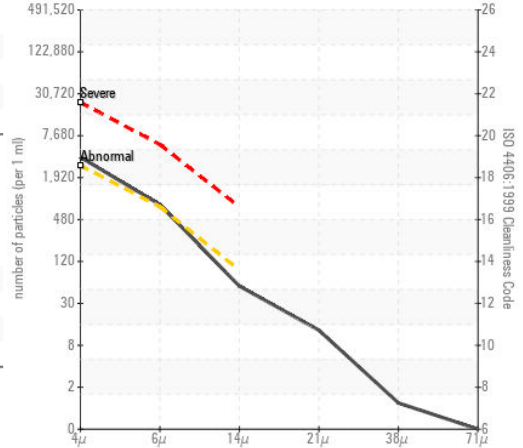
Non-ferrous Metals



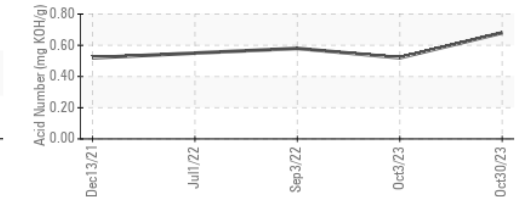
Viscosity @ 40°C



▲ Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0824866 Received : 13 Nov 2023
 Lab Number : 06006268 Diagnosed : 14 Nov 2023
 Unique Number : 10740030 Diagnostician : Doug Bogart
 Test Package : MAR 2 (Additional Tests: PrtCount)

American Queen Voyages - Oceans
 1201 Bridgeport Drive
 Jeffersonville, IN
 US 47130
 Contact: Dietrich Giles
 DIETRICH.GILES@AQVOYAGES.COM
 T: (228)591-6239
 F:

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)