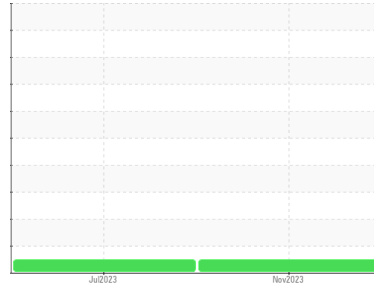




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
SEAWARD EXPLORER
 Machine Id
Explorer - Anchor Windlass HPU
 Component
Hydraulic System
 Fluid
SHELL TELLUS T46 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.
 NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0859362	WC0818099	---
Sample Date	Client Info			08 Nov 2023	25 Jul 2023	---
Machine Age	hrs	Client Info		379	370	---
Oil Age	hrs	Client Info		379	0	---
Oil Changed	Client Info			Not Chngd	N/A	---
Sample Status				NORMAL	NORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method		>0.1	NEG	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	0	<1	---
Chromium	ppm	ASTM D5185m	>10	0	0	---
Nickel	ppm	ASTM D5185m	>10	0	<1	---
Titanium	ppm	ASTM D5185m		0	0	---
Silver	ppm	ASTM D5185m		0	0	---
Aluminum	ppm	ASTM D5185m	>10	0	0	---
Lead	ppm	ASTM D5185m	>10	0	<1	---
Copper	ppm	ASTM D5185m	>75	6	5	---
Tin	ppm	ASTM D5185m	>10	0	0	---
Vanadium	ppm	ASTM D5185m		<1	0	---
Cadmium	ppm	ASTM D5185m		0	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	0	---
Barium	ppm	ASTM D5185m	0	0	1	---
Molybdenum	ppm	ASTM D5185m	0	0	<1	---
Manganese	ppm	ASTM D5185m		<1	0	---
Magnesium	ppm	ASTM D5185m	0	0	3	---
Calcium	ppm	ASTM D5185m	48	63	79	---
Phosphorus	ppm	ASTM D5185m	337	328	341	---
Zinc	ppm	ASTM D5185m	426	439	476	---
Sulfur	ppm	ASTM D5185m	2280	1030	1303	---

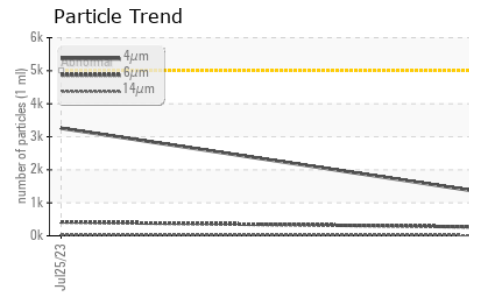
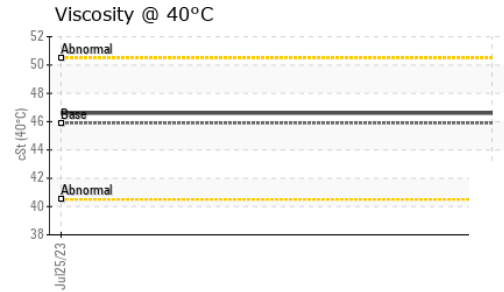
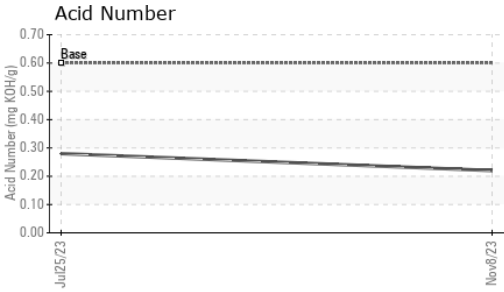
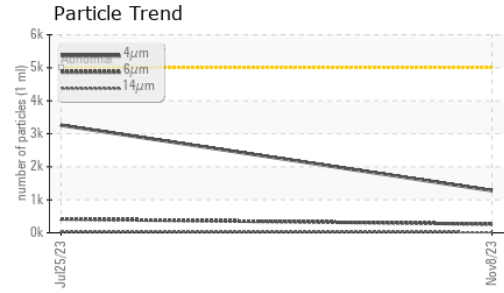
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	4	3	---
Sodium	ppm	ASTM D5185m		2	0	---
Potassium	ppm	ASTM D5185m	>20	0	1	---

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	1276	3259	---
Particles >6µm		ASTM D7647	>1300	263	416	---
Particles >14µm		ASTM D7647	>160	17	26	---
Particles >21µm		ASTM D7647	>40	3	8	---
Particles >38µm		ASTM D7647	>10	0	0	---
Particles >71µm		ASTM D7647	>3	0	0	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	17/15/11	19/16/12	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	.6	0.22	0.28	---



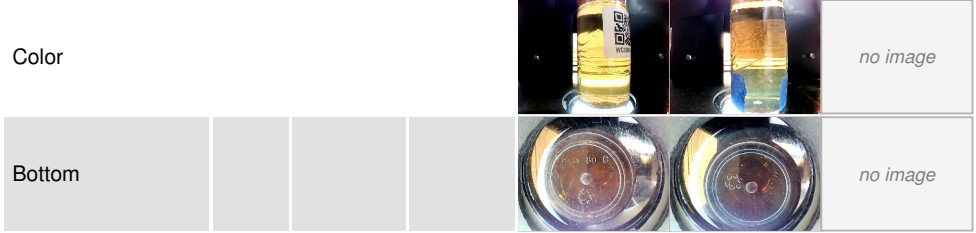
OIL ANALYSIS REPORT



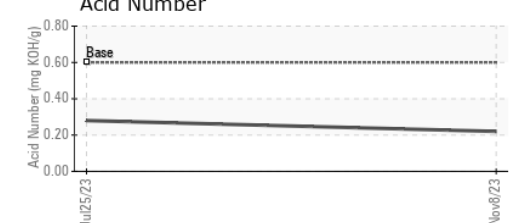
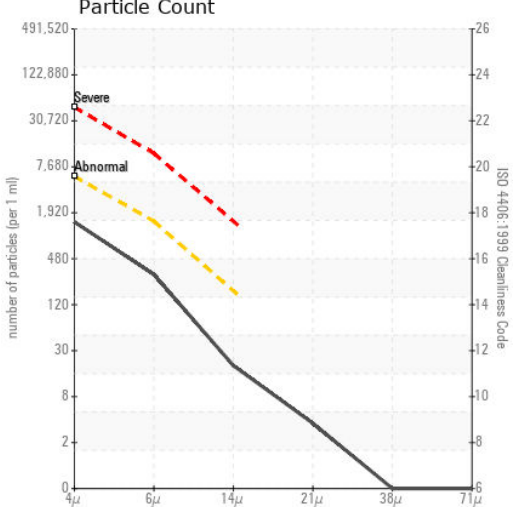
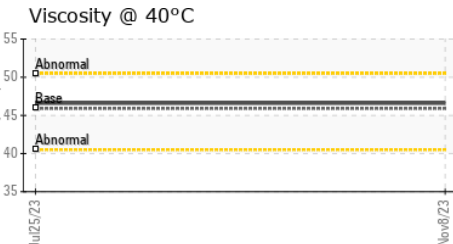
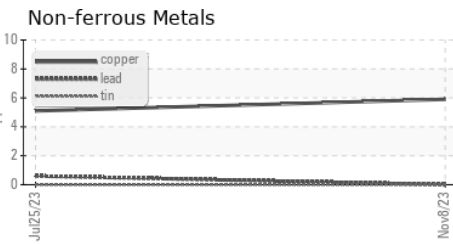
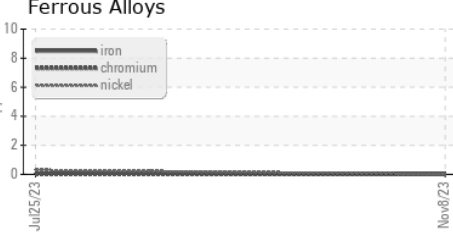
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.1	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	45.9	46.6	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0859362 Received : 20 Nov 2023
 Lab Number : 06012338 Diagnosed : 21 Nov 2023
 Unique Number : 10751482 Diagnostician : Wes Davis
 Test Package : MAR 2

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)

SEAWARD SERVICES
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 US 47150

Contact: PETER CHARBONNET
 PCHARBONNET@HMS-SEAWARD.COM

T:
 F: