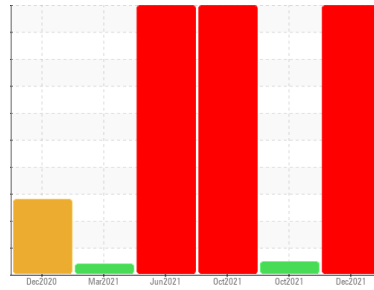




PROBLEM SUMMARY

Sample Rating Trend

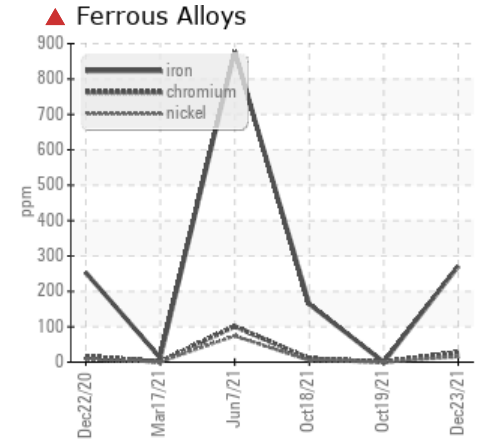
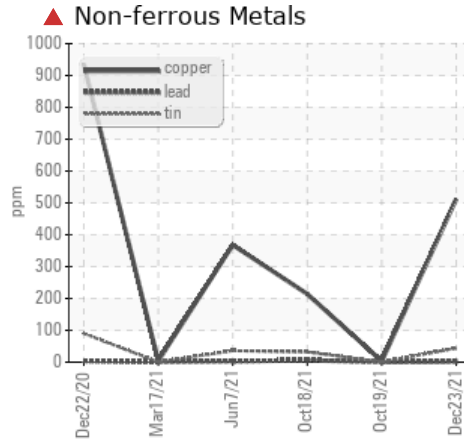
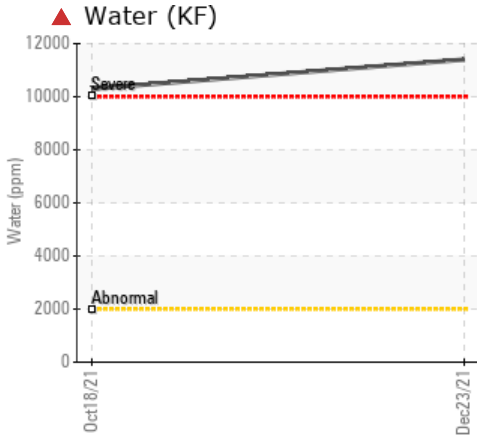


WEAR



Machine Id
OSV HERCULES 2PH
 Component
Starboard Wheel Hub
 Fluid
SHELL OMALA S2 GX 100 (25 GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check for the source of water entry. We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	SEVERE
Chromium	ppm	ASTM D5185m	>8	▲ 27	0	10
Nickel	ppm	ASTM D5185m	>5	▲ 15	<1	5
Copper	ppm	ASTM D5185m	>50	▲ 512	3	▲ 214
Tin	ppm	ASTM D5185m		▲ 44	<1	▲ 32
Water	%	ASTM D6304	>0.2	▲ 1.14	---	▲ 1.03
ppm Water	ppm	ASTM D6304	>2000	▲ 11400	---	▲ 10300
Emulsified Water	scalar	*Visual	>0.2	▲ 0.2%	NEG	▲ 0.2%

Customer Id: ALADUT
 Sample No.: WC0631047
 Lab Number: 05432055
 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

Action	Status	Date	Done By	Description
Inspect Wear Source	MISSED	Mar 20 2023	?	We advise that you inspect for the source(s) of wear.
Change Fluid	MISSED	Mar 20 2023	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	MISSED	Mar 20 2023	?	We recommend an early resample to monitor this condition.
Check Water Access	MISSED	Mar 20 2023	?	We advise that you check for the source of water entry.

HISTORICAL DIAGNOSIS

19 Oct 2021 Diag: Don Baldrige

NORMAL



Resample at the next service interval to monitor. (end of flushing).All component wear rates are normal. The water content is negligible. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



18 Oct 2021 Diag: Don Baldrige

WEAR



We advise that you check for the source of water entry. The oil change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. (start of flushing).Bearing and/or bushing wear is indicated. Appearance is milky. Moderate concentration of visible dirt/debris present in the oil. There is a high concentration of water present in the oil. The AN level is acceptable for this fluid.

view report



07 Jun 2021 Diag: Don Baldrige

WEAR



We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.Bearing and/or bushing wear is indicated. Gear wear is indicated. No other contaminants were detected in the oil. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

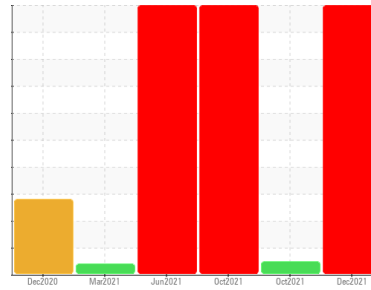
view report





OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
OSV HERCULES 2PH

Component
Starboard Wheel Hub

Fluid
SHELL OMALA S2 GX 100 (25 GAL)

DIAGNOSIS

▲ Recommendation

We advise that you check for the source of water entry. We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

▲ Wear

Bearing and/or bushing wear is indicated. Gear wear is indicated.

▲ Contamination

There is a high concentration of water present in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The oil is no longer serviceable due to the presence of contaminants and wear.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0631047	WC0579473	WC0579474
Sample Date	Client Info		23 Dec 2021	19 Oct 2021	18 Oct 2021
Machine Age	hrs	Client Info	20560	20055	20055
Oil Age	hrs	Client Info	574	8000	8000
Oil Changed	Client Info		N/A	Changed	Changed
Sample Status			SEVERE	NORMAL	SEVERE

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >500	271	0	164
Chromium	ppm	ASTM D5185m >8	▲ 27	0	10
Nickel	ppm	ASTM D5185m >5	▲ 15	<1	5
Titanium	ppm	ASTM D5185m	<1	0	<1
Silver	ppm	ASTM D5185m	1	0	0
Aluminum	ppm	ASTM D5185m >5	2	0	2
Lead	ppm	ASTM D5185m >5	2	0	6
Copper	ppm	ASTM D5185m >50	▲ 512	3	▲ 214
Tin	ppm	ASTM D5185m	▲ 44	<1	▲ 32
Antimony	ppm	ASTM D5185m	0	0	<1
Vanadium	ppm	ASTM D5185m	<1	<1	<1
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	4	0	2
Barium	ppm	ASTM D5185m	0	1	4
Molybdenum	ppm	ASTM D5185m	1	0	<1
Manganese	ppm	ASTM D5185m	4	0	2
Magnesium	ppm	ASTM D5185m	8	0	7
Calcium	ppm	ASTM D5185m	10	0	4
Phosphorus	ppm	ASTM D5185m	318	271	195
Zinc	ppm	ASTM D5185m	0	0	5
Sulfur	ppm	ASTM D5185m	6922	5995	5811

CONTAMINANTS

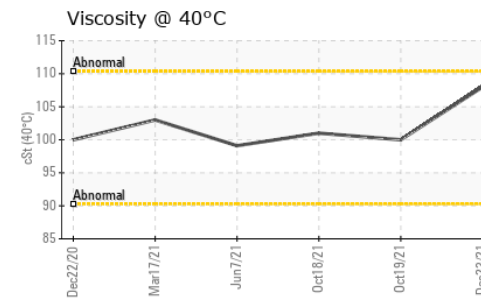
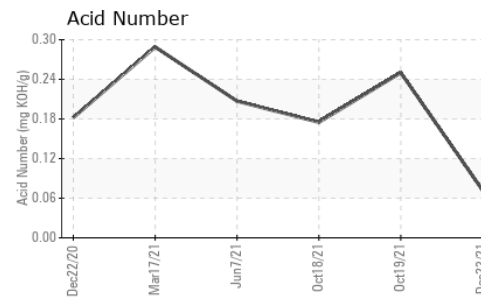
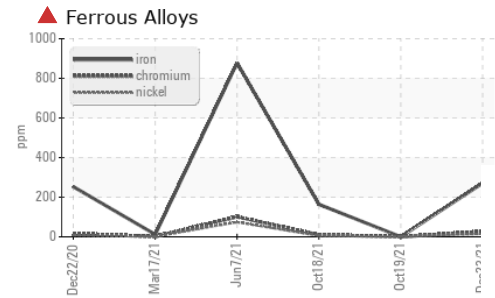
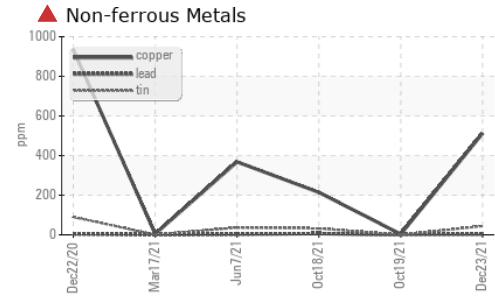
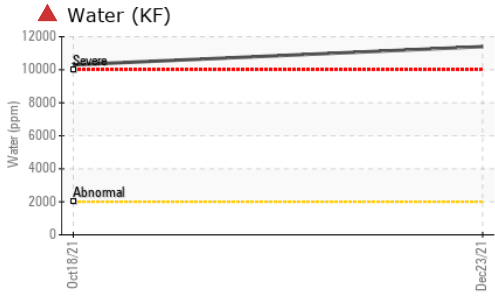
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	5	<1	2
Sodium	ppm	ASTM D5185m	55	3	41
Potassium	ppm	ASTM D5185m >20	2	<1	3
Water	%	ASTM D6304 >0.2	▲ 1.14	---	▲ 1.03
ppm Water	ppm	ASTM D6304 >2000	▲ 11400	---	▲ 10300

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.072	0.250	0.175



OIL ANALYSIS REPORT



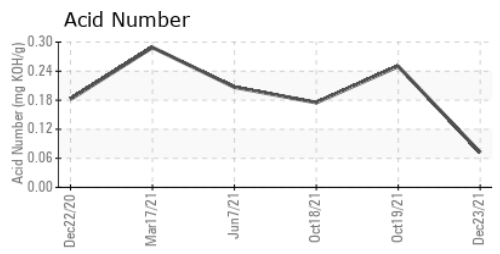
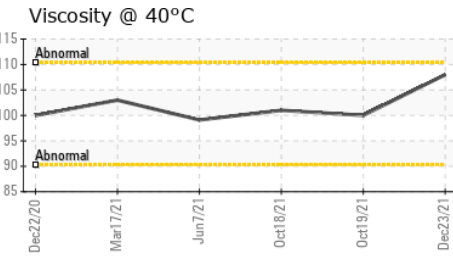
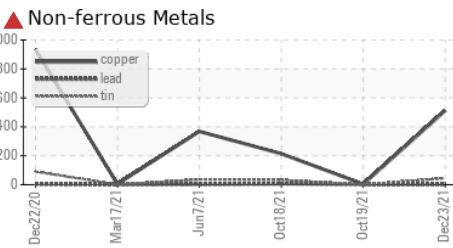
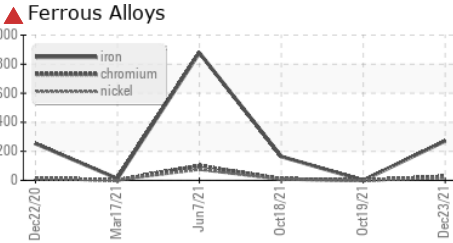
VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	LIGHT	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	MODER
Debris	scalar	*Visual	NONE	LIGHT	NONE	▲ MODER
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	● HAZY	NORML	● MILKY
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	▲ 0.2%	NEG	▲ 0.2%
Free Water	scalar	*Visual		NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	108	100	101

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

Color				no image	no image	no image
Bottom				no image	no image	no image

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0631047 **Received** : 27 Dec 2021
Lab Number : 05432055 **Tested** : 28 Dec 2021
Unique Number : 9791247 **Diagnosed** : 28 Dec 2021 - Doug Bogart
Test Package : MAR 2 (Additional Tests: KF)

ALASKA VESSEL AGENTS
 PO BOX 920785
 DUTCH HARBOR, AK
 US 99692
 Contact: MONIKA BERGERT
 monika.bergert@alaskavesselagents.com
 T: (907)581-4591
 F:

Certificate L2367
 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)