



WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
WILLARD HAMMOND
Machine Id
[WILLARD HAMMOND] 006 587215-6
Component
Starboard Reduction Gear
Fluid
CHEVRON URSA SUPER PLUS 40 (--- 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		MW0064389	MW0058405	MW0051339
Sample Date		Client Info		01 Jan 2024	29 Nov 2023	02 Oct 2023
Machine Age	hrs	Client Info		60440	59672	58311
Oil Age	hrs	Client Info		949	205	844
Filter Age	hrs	Client Info		949	205	844
Oil Changed		Client Info		N/A	Not Changd	N/A
Filter Changed		Client Info		N/A	Not Changd	N/A
Sample Status				ABNORMAL	ABNORMAL	NORMAL

WEAR

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

Iron	ppm	ASTM D5185m	>150	3	21	4
Chromium	ppm	ASTM D5185m	>10	0	<1	0
Nickel	ppm	ASTM D5185m	>10	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m		0	<1	0
Aluminum	ppm	ASTM D5185m	>25	<1	2	<1
Lead	ppm	ASTM D5185m	>100	<1	2	<1
Copper	ppm	ASTM D5185m	>50	▲ 189	▲ 133	44
Tin	ppm	ASTM D5185m	>10	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	MODER	LIGHT	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

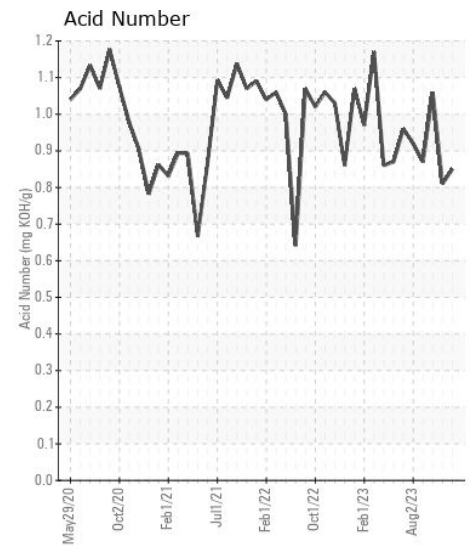
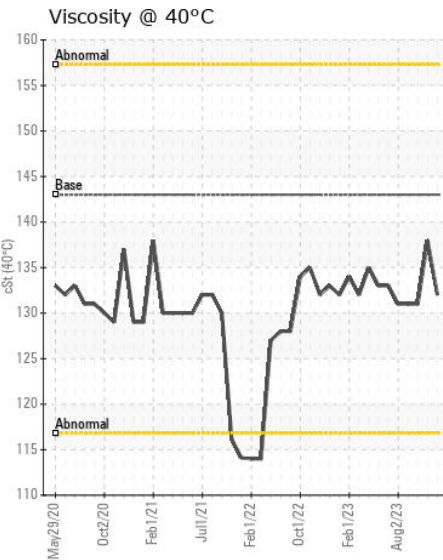
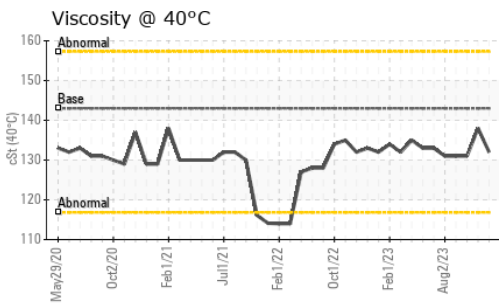
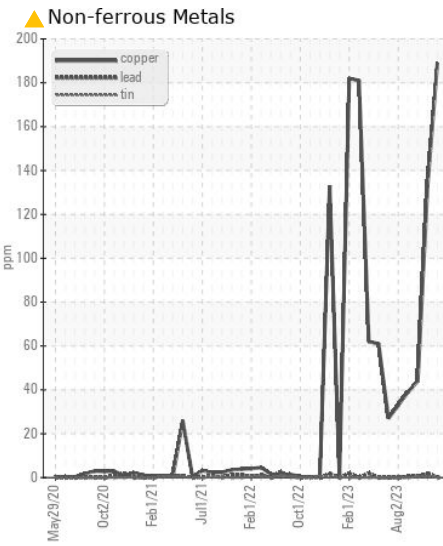
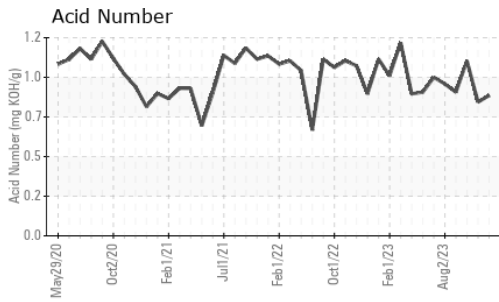
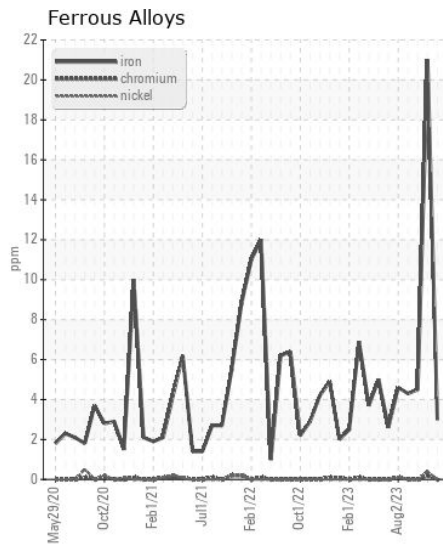
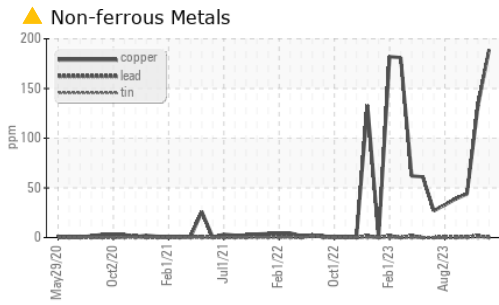
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>50	5	5	4
Potassium	ppm	ASTM D5185m	>20	0	2	<1
Water		WC Method	>0.1	NEG	NEG	NEG
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	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		1	3	3
Boron	ppm	ASTM D5185m		306	285	288
Barium	ppm	ASTM D5185m		0	2	0
Molybdenum	ppm	ASTM D5185m		31	30	31
Manganese	ppm	ASTM D5185m		<1	<1	0
Magnesium	ppm	ASTM D5185m		8	12	13
Calcium	ppm	ASTM D5185m		2385	2384	2264
Phosphorus	ppm	ASTM D5185m	1000	723	755	652
Zinc	ppm	ASTM D5185m	1090	808	796	781
Sulfur	ppm	ASTM D5185m		2838	2887	2862
Acid Number (AN)	mg KOH/g	ASTM D8045		0.85	0.81	1.06
Visc @ 40°C	cSt	ASTM D445	143	132	138	131



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0064389 **Received** : 12 Jan 2024
Lab Number : 06060338 **Diagnosed** : 16 Jan 2024
Unique Number : 10831720 **Diagnostician** : Don Baldrige
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)

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