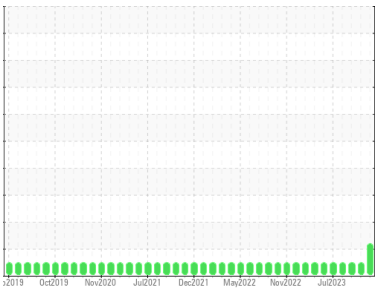
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
HAL PANNELL (S/N 2355)
Component
Starboard Reduction Gear
Fluid
CHEVRON MEROPA 220 (250 GAL)

DIAGNOSIS

Recommendation
We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

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

Fluid Condition
The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**MW0062358**	MW0066509	MW0066516
Sample Date		Client Info		**16 Mar 2024**	14 Feb 2024	16 Jan 2024
Machine Age	hrs	Client Info		**3318**	2552	1998
Oil Age	hrs	Client Info		**3318**	2552	1998
Oil Changed		Client Info		**Not Changd**	Not Changd	N/A
Sample Status				**ABNORMAL**	NORMAL	NORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>150	**16**	19	17
Chromium	ppm	ASTM D5185m	>10	**0**	<1	<1
Nickel	ppm	ASTM D5185m	>10	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	<1	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>25	**<1**	2	<1
Lead	ppm	ASTM D5185m	>100	**<1**	<1	0
Copper	ppm	ASTM D5185m	>50	**3**	3	3
Tin	ppm	ASTM D5185m	>10	**0**	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	40	**12**	15	15
Barium	ppm	ASTM D5185m		**<1**	0	0
Molybdenum	ppm	ASTM D5185m		**0**	0	0
Manganese	ppm	ASTM D5185m		**0**	0	<1
Magnesium	ppm	ASTM D5185m		**0**	<1	0
Calcium	ppm	ASTM D5185m		**15**	21	15
Phosphorus	ppm	ASTM D5185m	270	**208**	226	214
Zinc	ppm	ASTM D5185m		**10**	11	8
Sulfur	ppm	ASTM D5185m	8600	**6670**	7355	7067

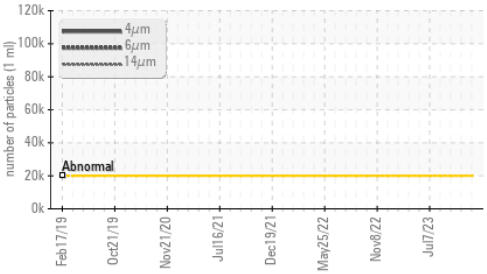
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**1**	2	2
Sodium	ppm	ASTM D5185m		**3**	<1	2
Potassium	ppm	ASTM D5185m	>20	**7**	2	0

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	▲ **113254**	---	---
Particles >6µm		ASTM D7647	>5000	▲ **12763**	---	---
Particles >14µm		ASTM D7647	>640	**64**	---	---
Particles >21µm		ASTM D7647	>160	**15**	---	---
Particles >38µm		ASTM D7647	>40	**2**	---	---
Particles >71µm		ASTM D7647	>10	**0**	---	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **24/21/13**	---	---

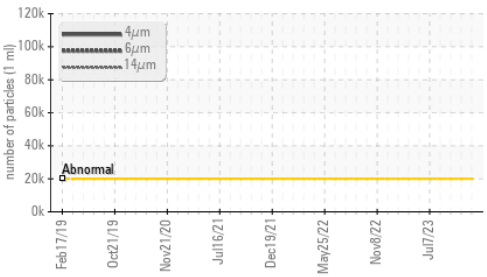
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.64	**0.61**	0.61	0.55

OIL ANALYSIS REPORT

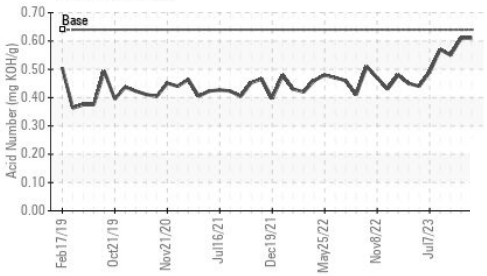
Particle Trend



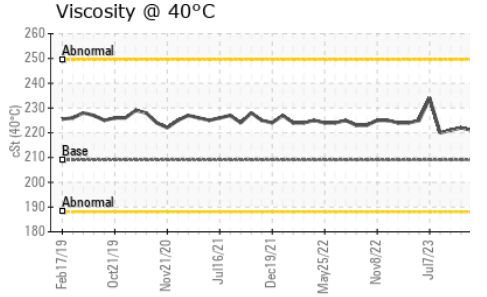
Particle Trend



Acid Number



Viscosity @ 40°C



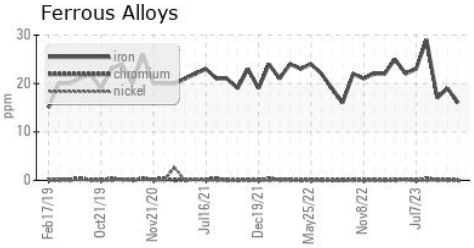
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	209	**221**	222	221

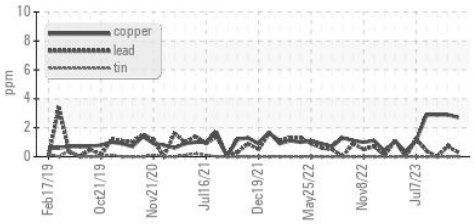
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				*no image*	*no image*
Bottom				*no image*	*no image*

GRAPHS

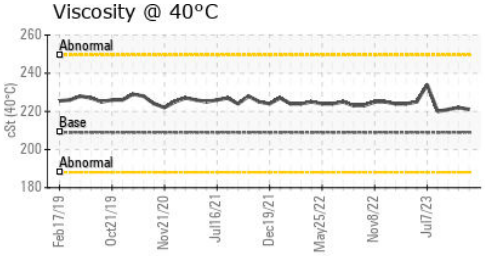
Ferrous Alloys



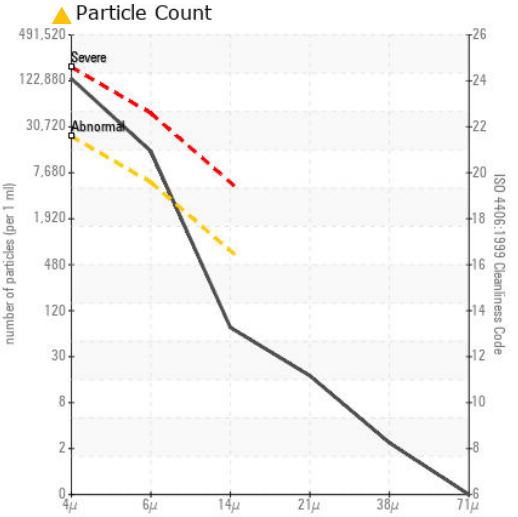
Non-ferrous Metals



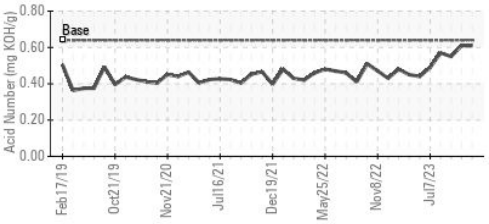
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0062358 **Received** : 17 Apr 2024
Lab Number : 06151931 **Tested** : 18 Apr 2024
Unique Number : 10982009 **Diagnosed** : 18 Apr 2024 - Wes Davis
Test Package : MAR 2 (Additional Tests: PrtCount)

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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Report Id: AMELOU [WUSCAR] 06151931 (Generated: 04/18/2024 14:40:54) Rev: 1
Contact/Location: RONALD SCHNEIDER - AMELOU