



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
SUSAN DUFRIEND

Component
Starboard Genset

Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (--- 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		MW0052212	MW0042811	MW0042815
Sample Date		Client Info		10 Jan 2024	06 Nov 2023	10 Sep 2023
Machine Age	hrs	Client Info		31760	31055	30331
Oil Age	hrs	Client Info		0	729	760
Filter Age	hrs	Client Info		0	729	760
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	SEVERE	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	4	3	6
Chromium	ppm	ASTM D5185m	>4	<1	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		11	10	11
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	1	1	0
Lead	ppm	ASTM D5185m	>17	2	<1	4
Copper	ppm	ASTM D5185m	>70	<1	0	<1
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

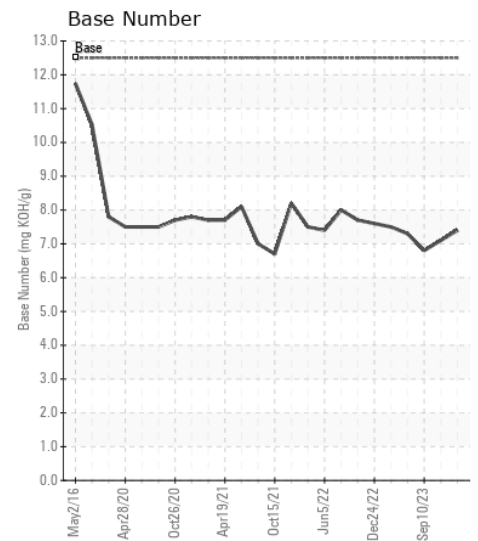
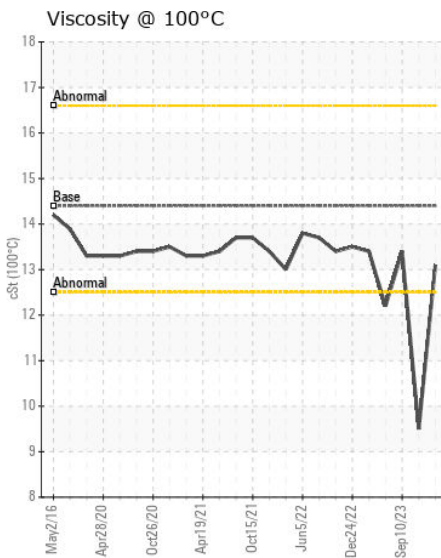
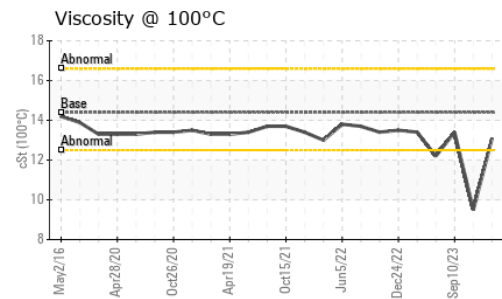
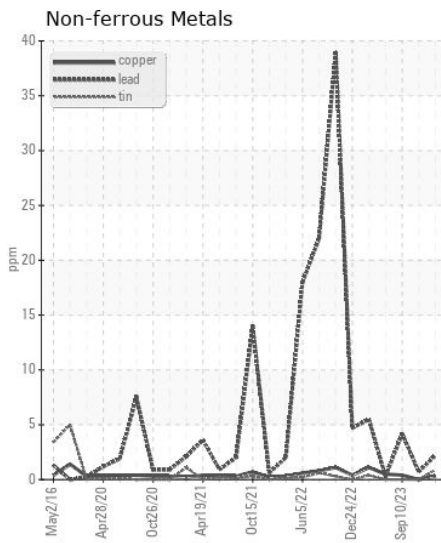
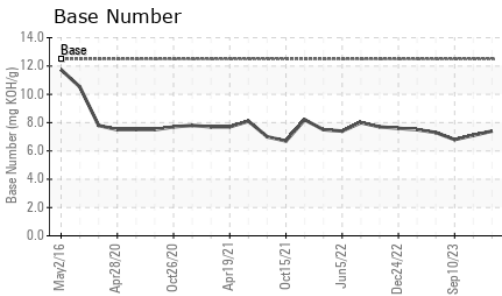
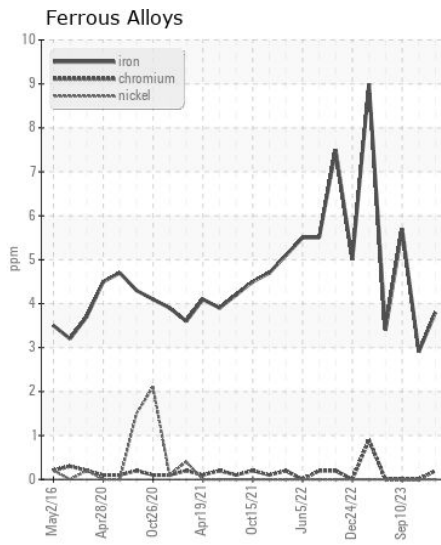
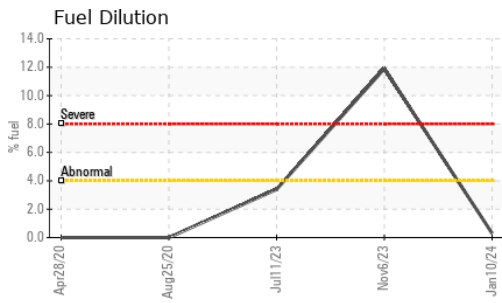
Fuel content negligible. There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	3	4	4
Potassium	ppm	ASTM D5185m	>20	2	2	5
Fuel	%	ASTM D3524	>4.0	0.3	11.9	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.1	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.7	8.7	9.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.1	18.4	19.1
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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		2	2	0
Boron	ppm	ASTM D5185m	151	96	74	62
Barium	ppm	ASTM D5185m	0.4	0	0	<1
Molybdenum	ppm	ASTM D5185m	250	39	32	38
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m	0	700	551	548
Calcium	ppm	ASTM D5185m	2046	1852	1510	1622
Phosphorus	ppm	ASTM D5185m	1043	855	726	755
Zinc	ppm	ASTM D5185m	943	1028	836	902
Sulfur	ppm	ASTM D5185m	5012	3670	2832	3335
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.7	13.5	14.9
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	7.4	7.1	6.8
Visc @ 100°C	cSt	ASTM D445	14.4	13.1	9.5	13.4



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0052212 **Received** : 12 Jan 2024
Lab Number : 06058938 **Diagnosed** : 16 Jan 2024
Unique Number : 10830320 **Diagnostician** : Wes Davis
Test Package : MAR 2 (Additional Tests: PercentFuel)

AMERICAN RIVER TRANSPORTATION CO
 8400 RIVER RD, PO BOX 656
 WESTWEGO, LA
 US 70094-2317
 Contact: KEVIN CHIASSON
 kevin.chiasson@adm.com

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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F: