



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
CGL
Machine Id
CGL
Component
Starboard Main Engine
Fluid
CHEVRON DELO 710 LS (350 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0065533	MW0065502	MW0050822
Sample Date		Client Info		24 Jun 2024	02 May 2024	14 Mar 2024
Machine Age	hrs	Client Info		437387	436149	434975
Oil Age	hrs	Client Info		6362	5134	3960
Filter Age	hrs	Client Info		1241	1174	1197
Oil Changed		Client Info		N/A	Changed	N/A
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	12	12	16
Chromium	ppm	ASTM D5185m	>8	<1	<1	2
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m	>3	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	2	3
Lead	ppm	ASTM D5185m	>18	4	4	7
Copper	ppm	ASTM D5185m	>80	11	10	14
Tin	ppm	ASTM D5185m	>14	2	3	5
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

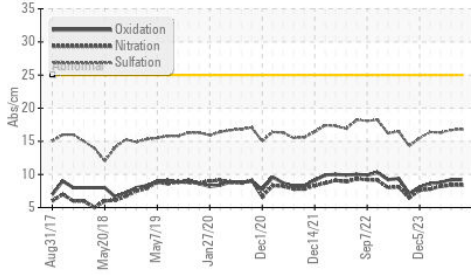
Silicon	ppm	ASTM D5185m	>20	2	2	4
Potassium	ppm	ASTM D5185m	>20	11	18	37
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.9	0.8	0.8
Nitration	Abs/cm	*ASTM D7624	>20	8.4	8.4	8.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	16.8	16.7	16.3
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

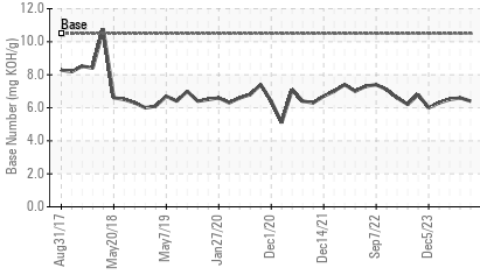
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	6	6	17
Boron	ppm	ASTM D5185m		36	39	47
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		45	50	65
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		9	45	12
Calcium	ppm	ASTM D5185m		3187	3630	4184
Phosphorus	ppm	ASTM D5185m		2	28	3
Zinc	ppm	ASTM D5185m		0	34	2
Sulfur	ppm	ASTM D5185m		2027	2681	2884
Oxidation	Abs/.1mm	*ASTM D7414	>25	9.2	9.2	8.8
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	6.4	6.6	6.5
Visc @ 100°C	cSt	ASTM D445	15.5	14.7	14.8	14.7

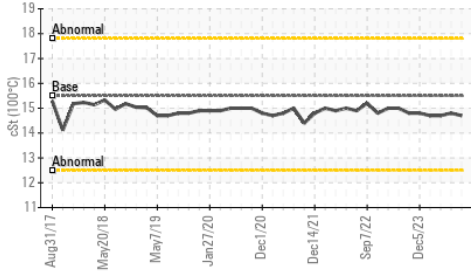
FT-IR (Direct Trend)



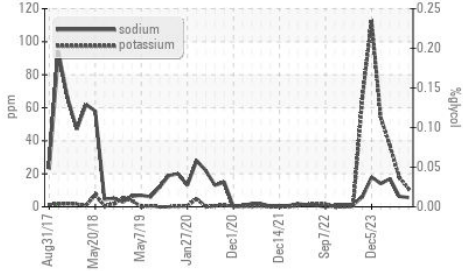
Base Number



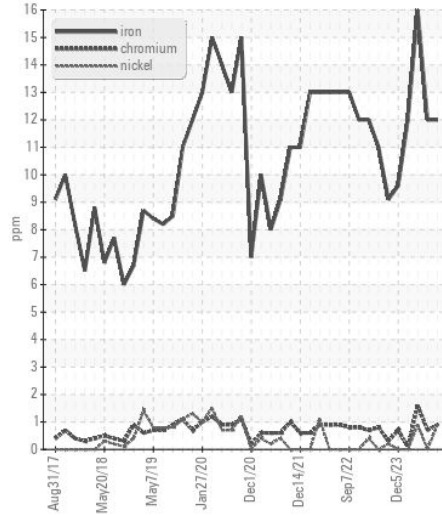
Viscosity @ 100°C



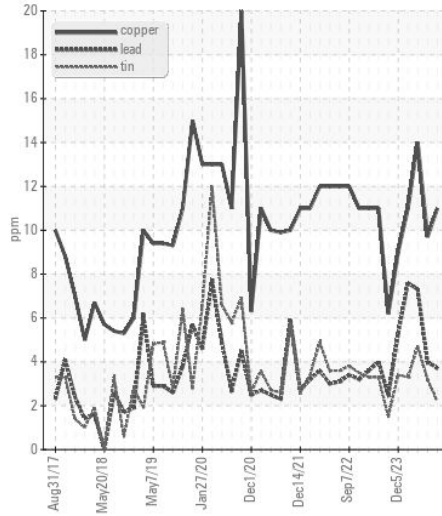
Glycol Contamination



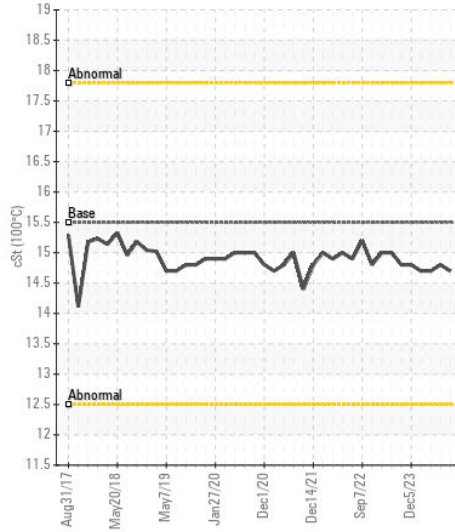
Ferrous Alloys



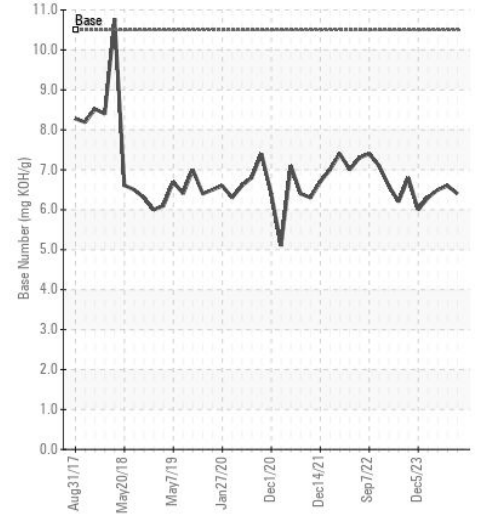
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0065533 **Received** : 18 Jul 2024
Lab Number : 06239989 **Tested** : 19 Jul 2024
Unique Number : 11128823 **Diagnosed** : 19 Jul 2024 - Don Baldrige
Test Package : MAR 2 (Additional Tests: Glycol)

AMERICAN RIVER TRANSPORTATION CO.
 P.O. BOX 2889
 ST. LOUIS, MO
 US 63111
 Contact: BRIAN GRIEWING
 brian.griewing@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)

T:
 F: (314)481-5278