



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
RIVER QUEST
Component
Starboard Main Engine
Fluid
PETRO CANADA DURON MARINE SAE 40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0035977	MW0066781	MW0066817
Sample Date		Client Info		21 May 2024	05 Mar 2024	01 Feb 2024
Machine Age	hrs	Client Info		23842	22784	22283
Oil Age	hrs	Client Info		1058	501	967
Filter Age	hrs	Client Info		1058	501	967
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	6	4	7
Chromium	ppm	ASTM D5185m	>10	0	0	<1
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>20	0	<1	2
Lead	ppm	ASTM D5185m	>40	2	2	9
Copper	ppm	ASTM D5185m	>300	0	2	1
Tin	ppm	ASTM D5185m	>10	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

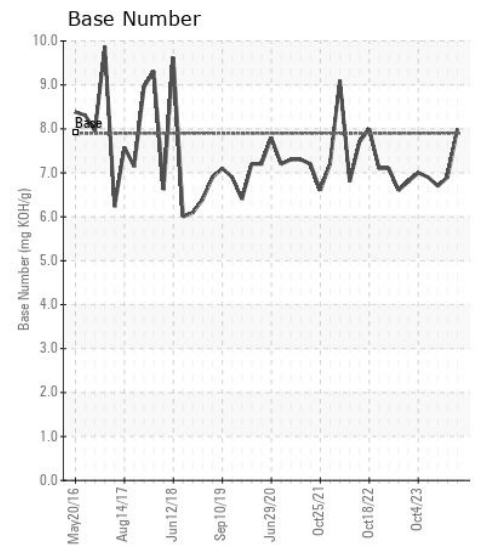
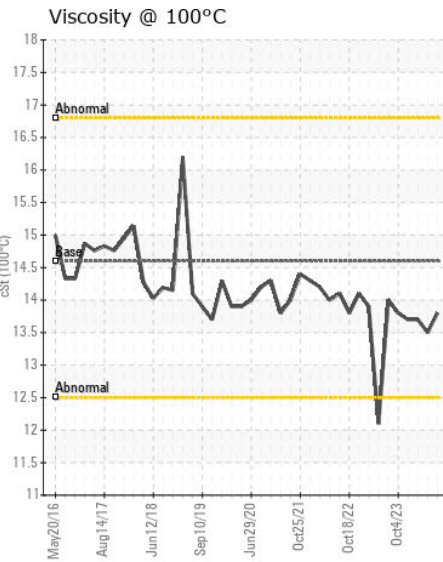
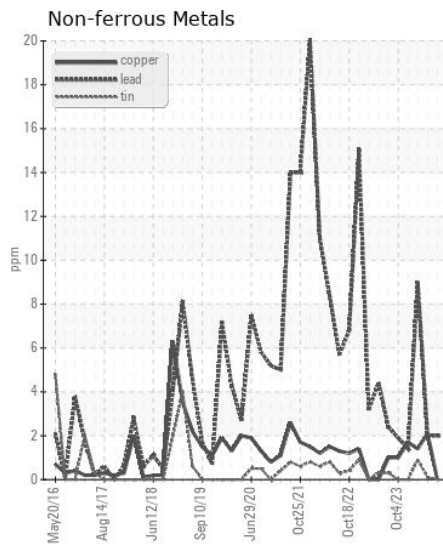
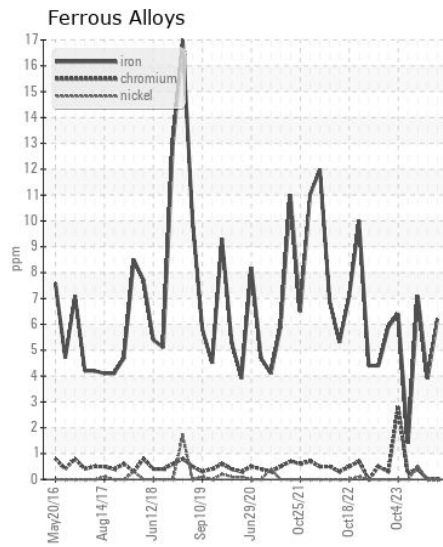
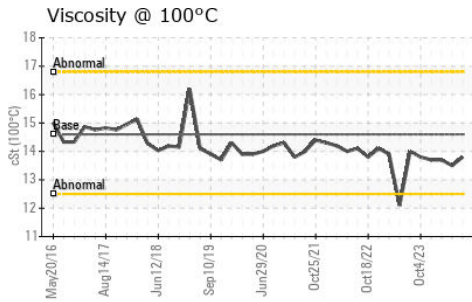
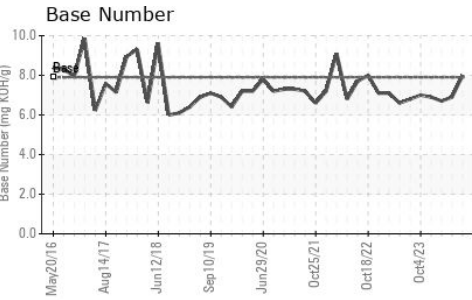
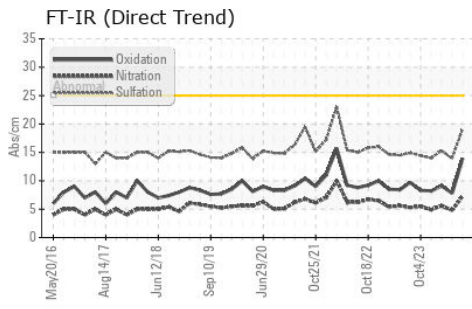
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	2	2	2
Potassium	ppm	ASTM D5185m	>20	0	0	1
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.9	0.3	0.4
Nitration	Abs/cm	*ASTM D7624	>20	7.3	4.8	5.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.1	13.9	15.3
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		1	2	0
Boron	ppm	ASTM D5185m	1.0	4	2	3
Barium	ppm	ASTM D5185m	1.0	0	0	13
Molybdenum	ppm	ASTM D5185m	1.0	2	3	4
Manganese	ppm	ASTM D5185m	1	0	<1	<1
Magnesium	ppm	ASTM D5185m	15	885	938	896
Calcium	ppm	ASTM D5185m	2540	1087	1102	1083
Phosphorus	ppm	ASTM D5185m	1000	1080	1205	1119
Zinc	ppm	ASTM D5185m	1110	1294	1390	1287
Sulfur	ppm	ASTM D5185m	3700	3375	3828	3525
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.9	7.8	9.1
Base Number (BN)	mg KOH/g	ASTM D2896	7.9	8.0	6.9	6.7
Visc @ 100°C	cSt	ASTM D445	14.6	13.8	13.5	13.7



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0035977
Lab Number : 06195237
Unique Number : 11057360
Test Package : MAR 2
Received : 30 May 2024
Tested : 31 May 2024
Diagnosed : 31 May 2024 - Wes Davis

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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)