



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**RIVER SPIRIT**  
Component  
**Port Main Engine**  
Fluid  
**PETRO CANADA DURON MARINE SAE 40 (19 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0066898</b>	MW0066824	MW0036023
Sample Date		Client Info		<b>09 Apr 2024</b>	08 Feb 2024	12 Dec 2023
Machine Age	hrs	Client Info		<b>22575</b>	21866	20941
Oil Age	hrs	Client Info		<b>709</b>	925	310
Filter Age	hrs	Client Info		<b>709</b>	925	310
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	<b>0</b>	4	0
Chromium	ppm	ASTM D5185m	>5	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m	>3	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>7	<b>0</b>	1	0
Lead	ppm	ASTM D5185m	>6	<b>0</b>	1	0
Copper	ppm	ASTM D5185m	>175	<b>0</b>	2	<1
Tin	ppm	ASTM D5185m	>8	<b>0</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

There is no indication of any contamination in the oil.

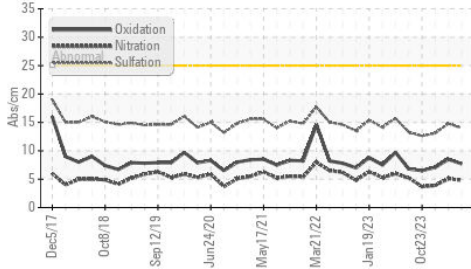
Silicon	ppm	ASTM D5185m	>25	<b>&lt;1</b>	2	2
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	1	0
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>4.8</b>	5.1	3.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>14.0</b>	14.8	13.1
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

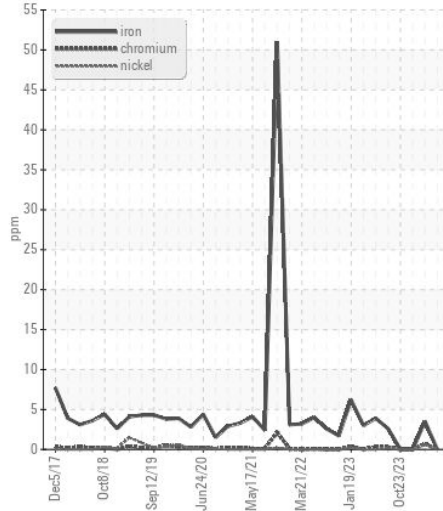
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Boron	ppm	ASTM D5185m	1.0	<b>&lt;1</b>	<1	0
Barium	ppm	ASTM D5185m	1.0	<b>0</b>	34	0
Molybdenum	ppm	ASTM D5185m	1.0	<b>0</b>	2	0
Manganese	ppm	ASTM D5185m	1	<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	15	<b>869</b>	804	902
Calcium	ppm	ASTM D5185m	2540	<b>1054</b>	954	983
Phosphorus	ppm	ASTM D5185m	1000	<b>1122</b>	946	1063
Zinc	ppm	ASTM D5185m	1110	<b>1288</b>	1188	1314
Sulfur	ppm	ASTM D5185m	3700	<b>3508</b>	3032	3055
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>7.7</b>	8.5	7.1
Base Number (BN)	mg KOH/g	ASTM D2896	7.9	<b>7.1</b>	6.6	7.1
Visc @ 100°C	cSt	ASTM D445	14.6	<b>13.2</b>	13.2	13.3

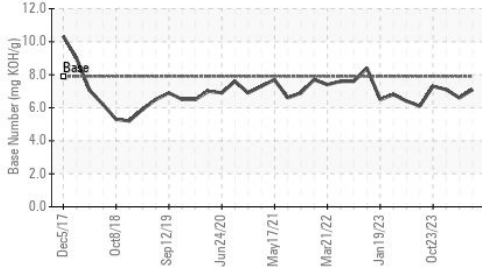
**FT-IR (Direct Trend)**



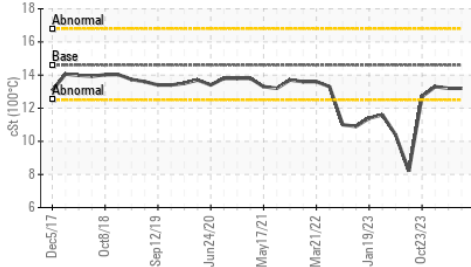
**Ferrous Alloys**



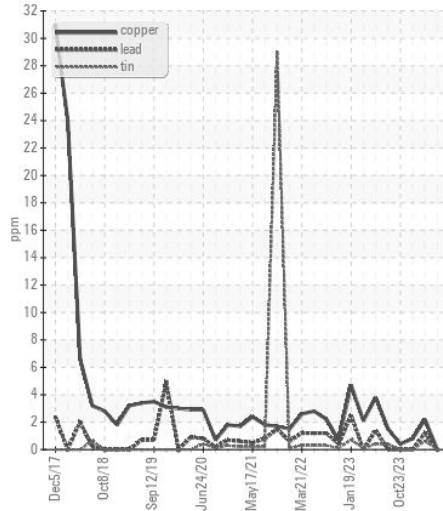
**Base Number**



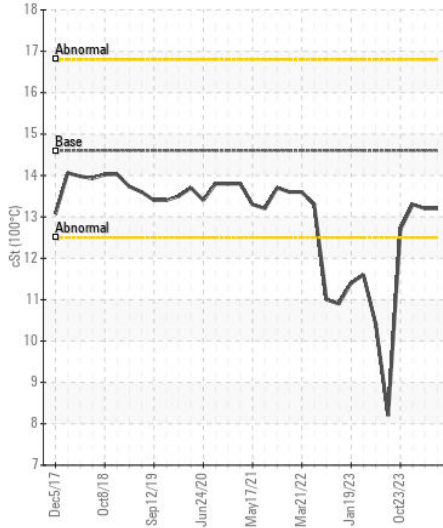
**Viscosity @ 100°C**



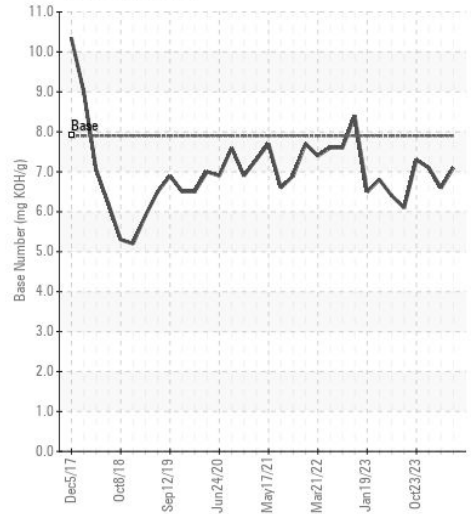
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0066898  
**Lab Number** : 06195242  
**Unique Number** : 11057365  
**Test Package** : MAR 2

**Received** : 30 May 2024  
**Tested** : 31 May 2024  
**Diagnosed** : 31 May 2024 - Wes Davis

**AMERICAN RIVER TRANSPORTATION**  
 1495 EAST ILLINOIS RT 71  
 OTTAWA, IL  
 US 61350

Contact: Jackson Hayes  
 jackson.hayes@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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