



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINANTS	NORMAL
OIL CONDITION	NORMAL

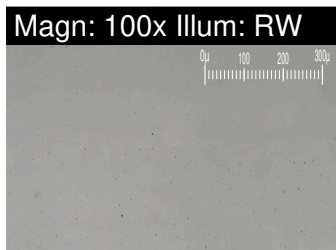
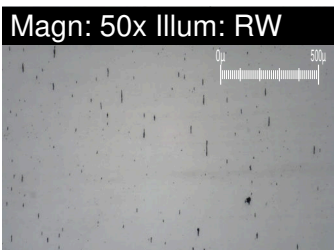
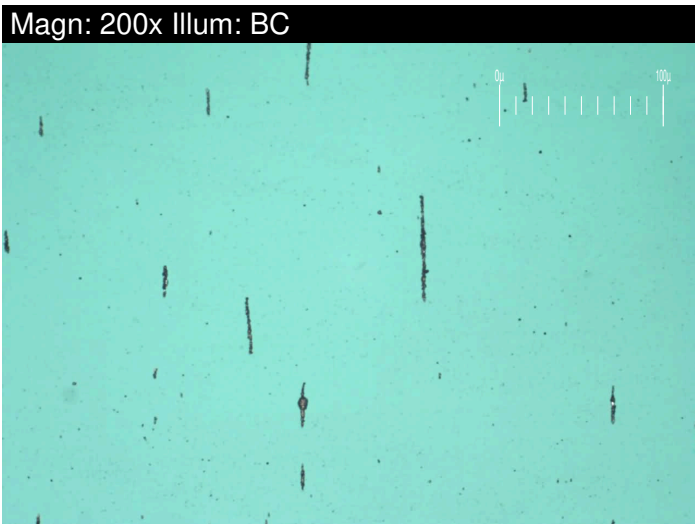
Machine Id  
**EGR-2214 (S/N 6919561)**  
 Component  
**4 Main Engine**  
 Fluid  
**SHELL ROTELLA T 15W40 (900 LTR)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

**WEAR**

All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.



Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0910233</b>	WC0574863	WC0494646
Sample Date		Client Info		<b>17 Mar 2024</b>	05 Sep 2023	26 May 2023
Machine Age	hrs	Client Info		<b>65000</b>	64500	64143
Oil Age	hrs	Client Info		<b>857</b>	628	67
Filter Age	hrs	Client Info		<b>857</b>	628	67
Oil Changed		Client Info		<b>Not Chngd</b>	Not Chngd	Not Chngd
Filter Changed		Client Info		<b>Not Chngd</b>	Not Chngd	Not Chngd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

PQ		ASTM D8184*		<b>0</b>	0	0
Iron	ppm	ASTM D5185(m)	>75	<b>4</b>	3	2
Chromium	ppm	ASTM D5185(m)	>8	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185(m)	>3	<b>0</b>	0	<1
Silver	ppm	ASTM D5185(m)	>2	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185(m)	>15	<b>&lt;1</b>	<1	<1
Lead	ppm	ASTM D5185(m)	>18	<b>0</b>	0	0
Copper	ppm	ASTM D5185(m)	>80	<b>1</b>	<1	<1
Tin	ppm	ASTM D5185(m)	>14	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Large Particles		DR-Ferr*		<b>2.9</b>	3.7	8.2
Small Particles		DR-Ferr*		<b>1.8</b>	2.9	6.2
Total Particles		DR-Ferr*	>---	<b>4.7</b>	6.6	14.4
Large Particles Percentage	%	DR-Ferr*		<b>23.4</b>	12.1	13.9
Severity Index		DR-Ferr*		<b>3</b>	3	16
Ferrous Rubbing	Scale 0-10	ASTM D7684*		<b>2</b>	1	3
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		<b>1</b>	1	1
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*				1
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				

## CONTAMINANTS

There is no indication of any contamination in the oil.

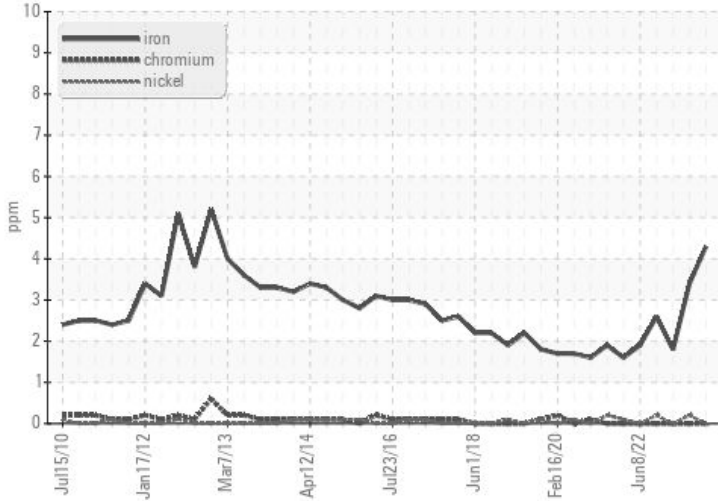
Silicon	ppm	ASTM D5185(m)	>20	<b>2</b>	4	6
Potassium	ppm	ASTM D5185(m)	>20	<b>7</b>	7	6
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	ASTM D7844*		<b>0.1</b>	0	0
Nitration	Abs/cm	ASTM D7624*	>20	<b>7.6</b>	6.6	5.3
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>21.0</b>	20.1	20.3
Emulsified Water	scalar	Visual*	>0.1	<b>NEG</b>	NEG	NEG
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		<b>1</b>	1	1
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		<b>1</b>	1	1

## OIL CONDITION

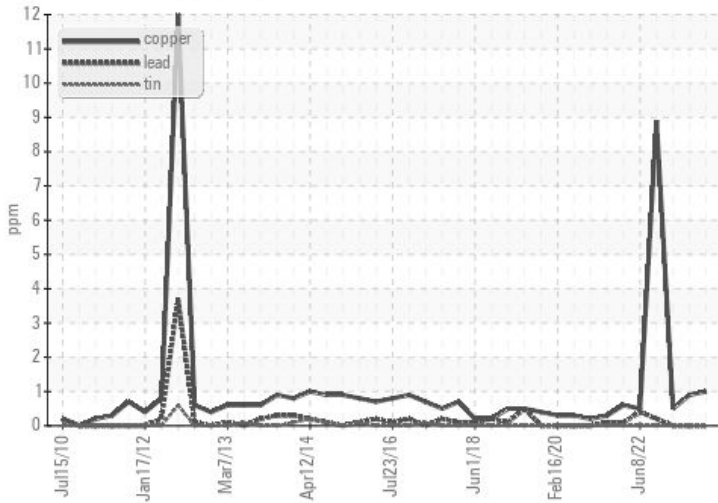
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185(m)	>75	<b>6</b>	5	3
Boron	ppm	ASTM D5185(m)	35	<b>144</b>	156	168
Barium	ppm	ASTM D5185(m)	0	<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	1	1
Manganese	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)	10	<b>16</b>	15	15
Calcium	ppm	ASTM D5185(m)	2340	<b>2196</b>	2226	2186
Phosphorus	ppm	ASTM D5185(m)	1110	<b>963</b>	996	1018
Zinc	ppm	ASTM D5185(m)	1210	<b>1121</b>	1143	1076
Sulfur	ppm	ASTM D5185(m)	3890	<b>2876</b>	2956	2956
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>16.9</b>	15.6	15.8
Base Number (BN)	mg KOH/g	ASTM D2896*	10.1	<b>8.20</b>	7.96	8.10
Visc @ 100°C	cSt	ASTM D7279(m)	15.7	<b>13.4</b>	13.5	13.9
Lubricant Degradation	Scale 0-10	ASTM D7684*				

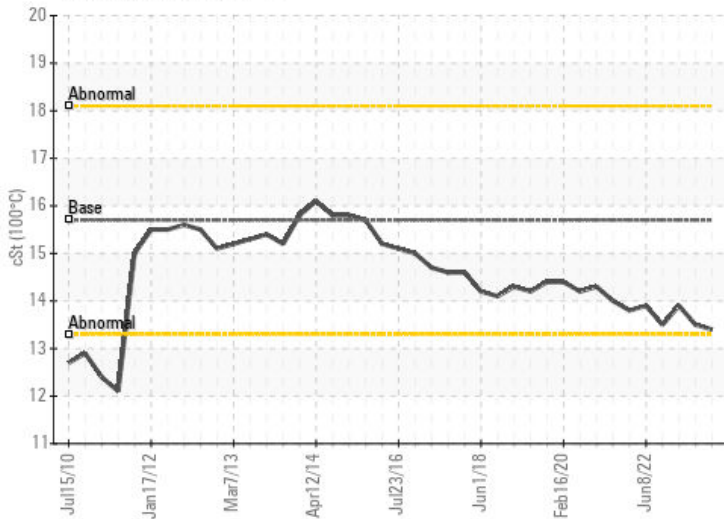
### Ferrous Alloys



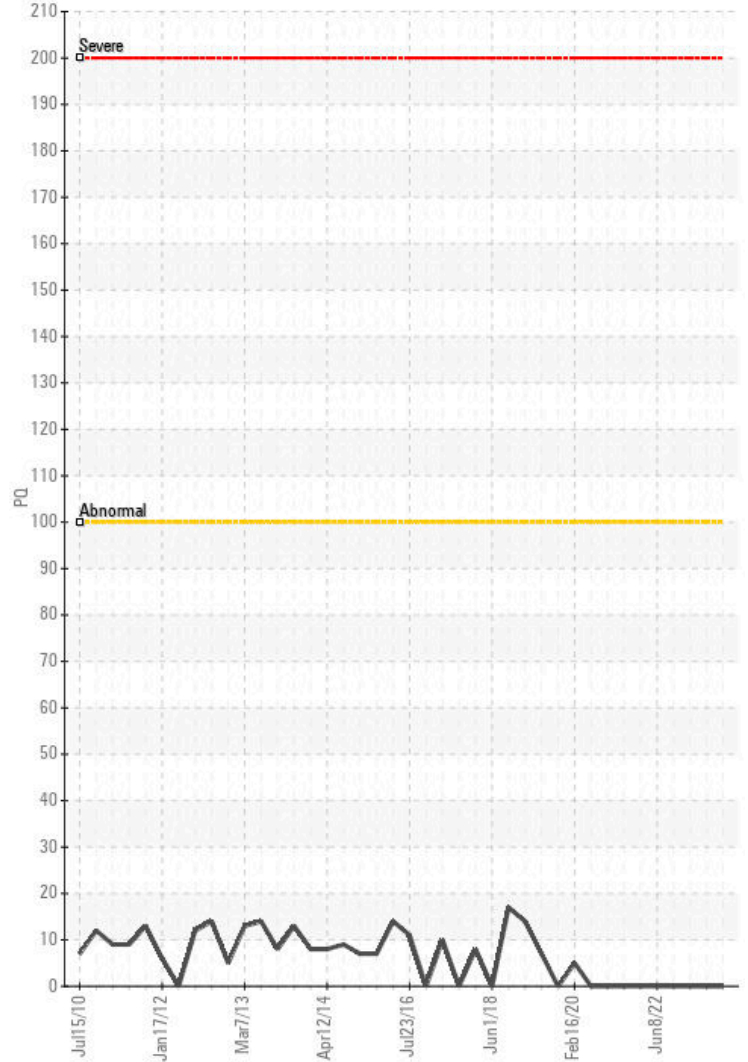
### Non-ferrous Metals



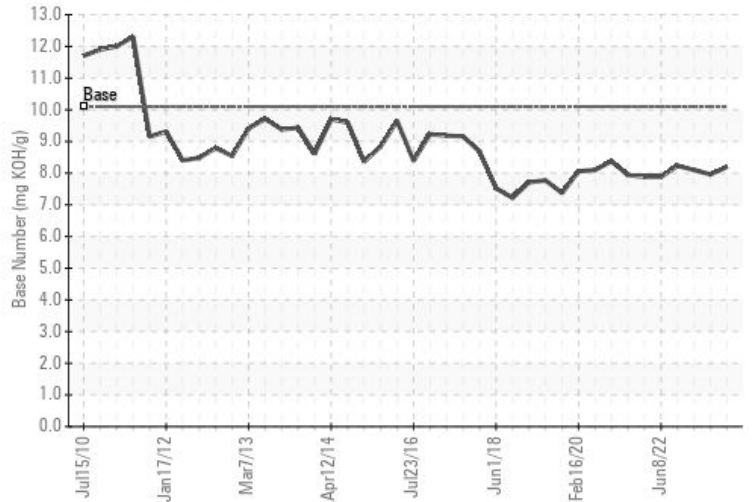
### Viscosity @ 100°C



### PQ



### Base Number



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9

**Sample No.** : WC0910233

**Lab Number** : 02626902

**Unique Number** : 5760034

**Test Package** : MAR 3

**Received** : 05 Apr 2024

**Tested** : 09 Apr 2024

**Diagnosed** : 09 Apr 2024 - Kevin Marson

**DFO, CCGS EARL GREY**

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To discuss this sample report, contact Customer Service at 1-800-268-2131.

Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.

Validity of results and interpretation are based on the sample and information as supplied.

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