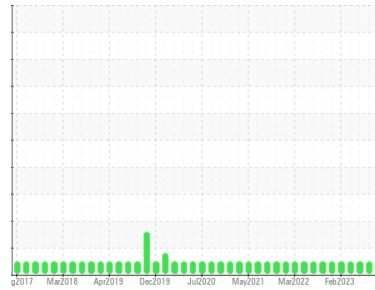




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**Engine room**  
 Machine Id  
**SSG #1 (S/N 1SS01190)**  
 Component  
**1 Diesel Engine**  
 Fluid  
**PETRO CANADA DURON HP 15W40 (62 LTR)**

## DIAGNOSIS

### 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.

### Contaminants

There is no indication of any contamination in the oil.

### 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.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0772123</b>	WC0772121	WC0772117
Sample Date	Client Info		<b>23 Nov 2023</b>	19 Oct 2023	17 May 2023
Machine Age	hrs	Client Info	<b>56076</b>	55551	54960
Oil Age	hrs	Client Info	<b>525</b>	505	518
Oil Changed	Client Info		<b>Changed</b>	Changed	Changed
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	WC Method		<b>NEG</b>	0.0	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		<b>0</b>	0	0
Iron	ppm	ASTM D5185(m) >80	<b>16</b>	19	20
Chromium	ppm	ASTM D5185(m) >4	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185(m) >4	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185(m) >2	<b>0</b>	0	<1
Silver	ppm	ASTM D5185(m) >2	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185(m) >10	<b>1</b>	1	1
Lead	ppm	ASTM D5185(m) >15	<b>6</b>	17	3
Copper	ppm	ASTM D5185(m) >230	<b>135</b>	581	2
Tin	ppm	ASTM D5185(m) >4	<b>&lt;1</b>	<1	<1
Antimony	ppm	ASTM D5185(m)	<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 0	<b>7</b>	3	2
Barium	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	<1	0
Molybdenum	ppm	ASTM D5185(m) 60	<b>68</b>	67	60
Manganese	ppm	ASTM D5185(m) 0	<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185(m) 1010	<b>1060</b>	1056	987
Calcium	ppm	ASTM D5185(m) 1070	<b>1143</b>	1149	1108
Phosphorus	ppm	ASTM D5185(m) 1150	<b>1020</b>	1046	1049
Zinc	ppm	ASTM D5185(m) 1270	<b>1307</b>	1295	1205
Sulfur	ppm	ASTM D5185(m) 2060	<b>2290</b>	2446	2526
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	<1

## CONTAMINANTS

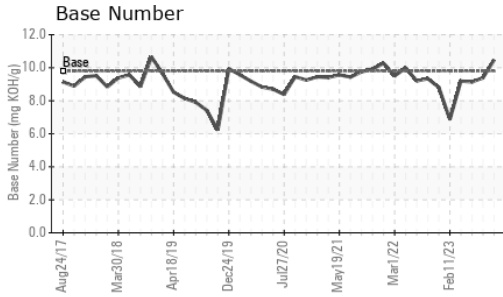
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >25	<b>4</b>	12	2
Sodium	ppm	ASTM D5185(m)	<b>3</b>	4	2
Potassium	ppm	ASTM D5185(m) >20	<b>0</b>	<1	<1

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844* >3	<b>0</b>	0	0.2
Nitration	Abs/cm	ASTM D7624* >20	<b>9.2</b>	8.7	7.0
Sulfation	Abs./1mm	ASTM D7415* >30	<b>22.5</b>	21.7	20.2



# OIL ANALYSIS REPORT

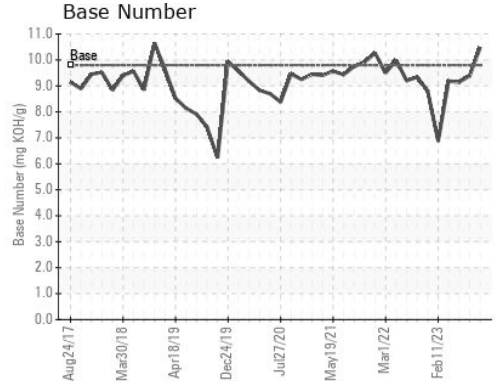
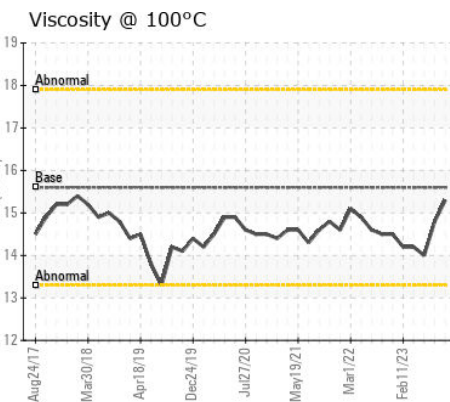
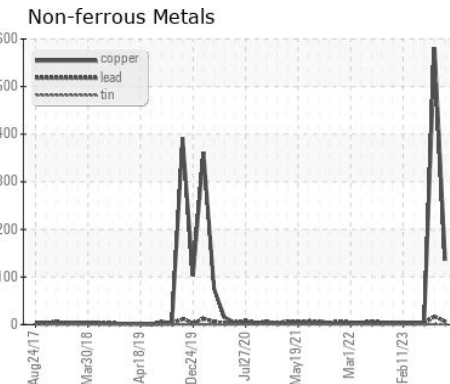
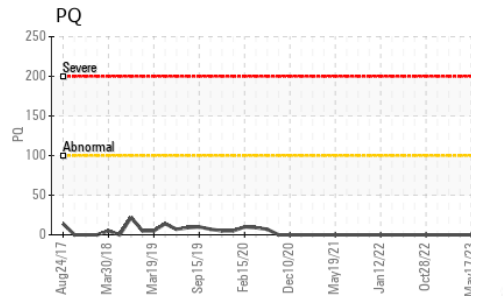
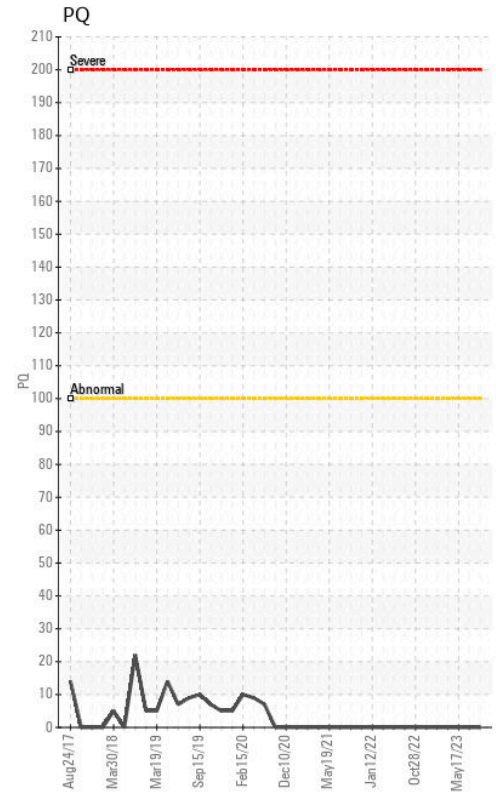
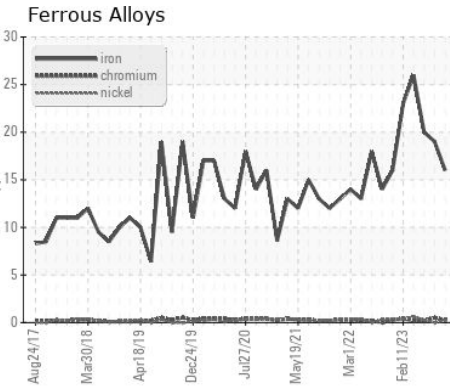
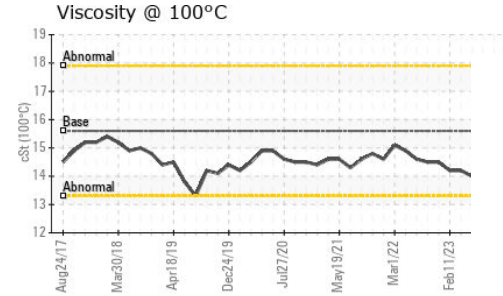


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>21.8</b>	19.8	16.1
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	<b>10.48</b>	9.39	9.14

VISUAL	method	limit/base	current	history1	history2	
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG
Free Water	scalar	Visual*		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	<b>15.3</b>	14.8	14.0

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0772123  
**Lab Number** : **02603058**  
**Unique Number** : 5696143  
**Test Package** : MAR 3

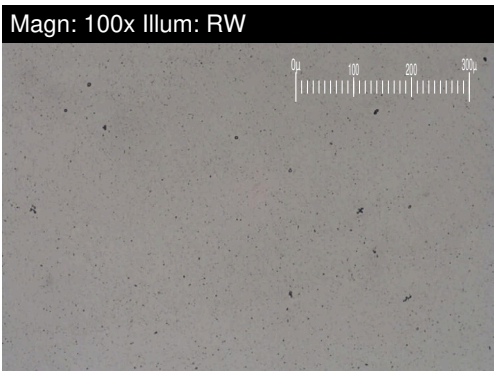
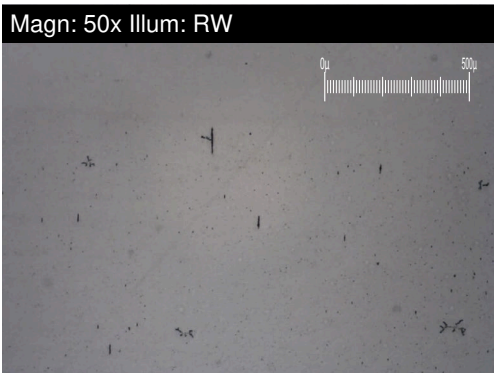
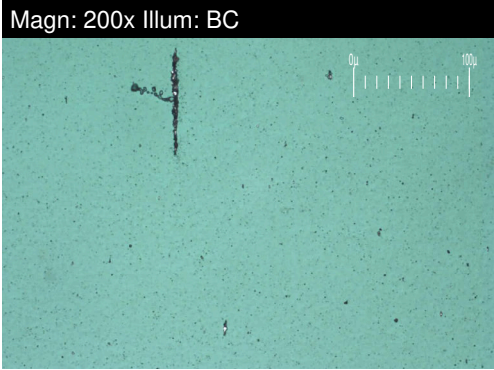
**CANADIAN COAST GUARD**  
 CCGS GRIFFON, PO BOX 1000, 401 KING ST.W  
 Prescott, ON  
 CA K6V 5T3  
 Contact: Laurie Bosley  
 Laurie.Bosley@dfo-mpo.gc.ca  
 T:  
 F: (519)383-1994

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.



# FERROGRAPHY REPORT

Area  
**Engine room**  
 Machine Id  
**SSG #1 (S/N 1SS01190)**  
 Component  
**1 Diesel Engine**  
 Fluid  
**PETRO CANADA DURON HP 15W40 (62 LTR)**

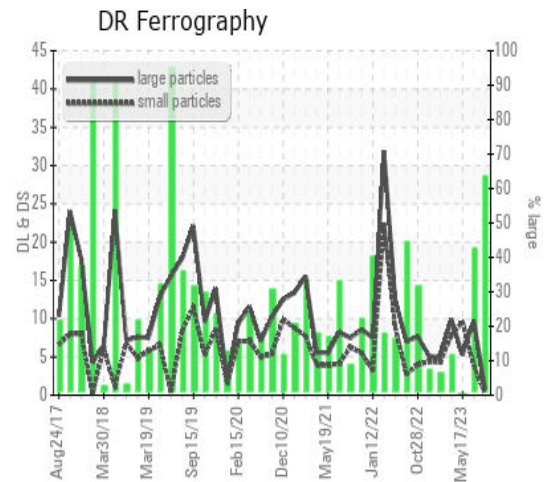


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		<b>0.9</b>	9.7	5.3
Small Particles		DR-Ferr*		<b>0.2</b>	3.9	9.6
Total Particles		DR-Ferr*	>---	<b>1.1</b>	13.6	14.9
Large Particles Percentage	%	DR-Ferr*		<b>63.6</b>	42.6	0
Severity Index		DR-Ferr*		<b>1</b>	56	23

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		1	3	2
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		1	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	1	
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				1
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*				
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		1	1	1
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		2	1	1

### WEAR

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



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