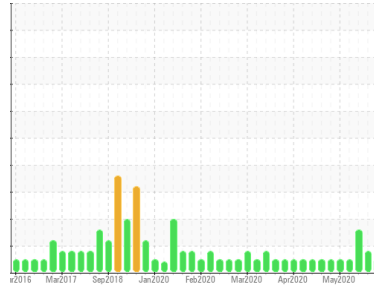


Area  
**Fwd Machinery Space [450204399]**  
 Machine Id  
**Pump - Fire Water (Stbd) - Engine Crank Case (S/N Sample Tag PA-71001B-S1)**  
 Component  
**Starboard Diesel Engine**  
 Fluid  
**PETRO CANADA DURON HP 15W40 (806 LTR)**



**DIAGNOSIS**

**Recommendation**  
 No corrective action is recommended at this time. Resample at the next service interval to monitor.

**Wear**  
 All component wear rates are normal.

**Contamination**  
 Light fuel dilution occurring. No other contaminants were detected in the oil.

**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.

**SAMPLE INFORMATION**

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>PC0052569</b>	PC	PC0035710
Sample Date	Client Info	<b>30 Aug 2023</b>	26 Feb 2023	13 Nov 2020
Machine Age	hrs	<b>0</b>	0	0
Oil Age	hrs	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>NORMAL</b>	MARGINAL	ABNORMAL

**CONTAMINATION**

method	limit/base	current	history1	history2
Glycol	WC Method	<b>NEG</b>	NEG	NEG

**WEAR METALS**

method	limit/base	current	history1	history2
PQ	ASTM D8184*	<b>0</b>	0	0
Iron	ppm ASTM D5185(m) >100	<b>4</b>	4	3
Chromium	ppm ASTM D5185(m) >20	<b>&lt;1</b>	0	<1
Nickel	ppm ASTM D5185(m) >2	<b>0</b>	<1	0
Titanium	ppm ASTM D5185(m) >2	<b>0</b>	<1	0
Silver	ppm ASTM D5185(m) >2	<b>0</b>	0	0
Aluminum	ppm ASTM D5185(m) >25	<b>&lt;1</b>	1	1
Lead	ppm ASTM D5185(m) >40	<b>1</b>	1	2
Copper	ppm ASTM D5185(m) >330	<b>9</b>	5	18
Tin	ppm ASTM D5185(m) >15	<b>&lt;1</b>	<1	<1
Antimony	ppm ASTM D5185(m)	<b>0</b>	<1	<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>1</b>	1	2
Barium	ppm ASTM D5185(m) 0	<b>0</b>	0	0
Molybdenum	ppm ASTM D5185(m) 60	<b>55</b>	54	55
Manganese	ppm ASTM D5185(m) 0	<b>&lt;1</b>	<1	<1
Magnesium	ppm ASTM D5185(m) 1010	<b>916</b>	909	838
Calcium	ppm ASTM D5185(m) 1070	<b>968</b>	1023	1105
Phosphorus	ppm ASTM D5185(m) 1150	<b>1031</b>	1025	961
Zinc	ppm ASTM D5185(m) 1270	<b>1120</b>	1112	1205
Sulfur	ppm ASTM D5185(m) 2060	<b>2517</b>	2545	2859
Lithium	ppm ASTM D5185(m)	<b>&lt;1</b>	<1	<1

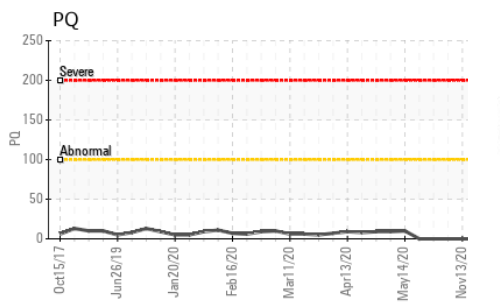
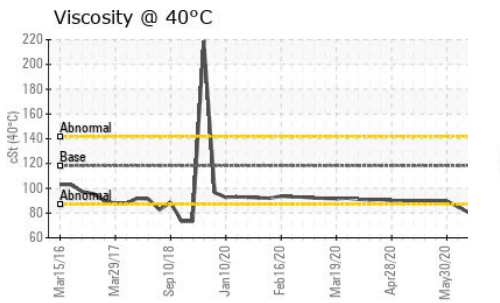
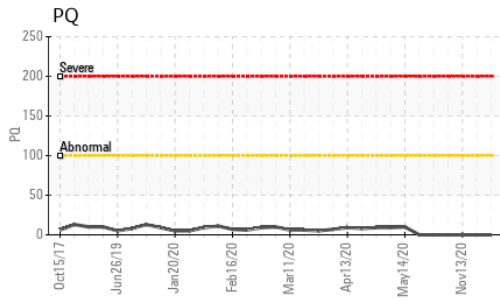
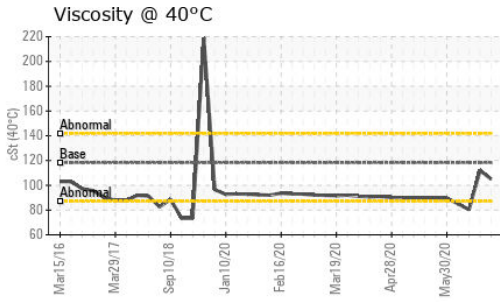
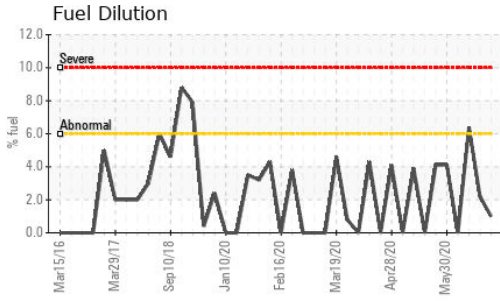
**CONTAMINANTS**

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >25	<b>4</b>	4	3
Sodium	ppm ASTM D5185(m)	<b>2</b>	2	2
Potassium	ppm ASTM D5185(m) >20	<b>&lt;1</b>	0	<1
Fuel	% ASTM D7593* >6	<b>1</b>	▲ 2.2	▲ 6.4

**INFRA-RED**

method	limit/base	current	history1	history2
Soot %	% ASTM D7844* >3	<b>0</b>	0	0
Nitration	Abs/cm ASTM D7624* >20	<b>4.5</b>	3.6	5.8
Sulfation	Abs/.1mm ASTM D7415* >30	<b>17.4</b>	16.8	18.4

# OIL ANALYSIS REPORT



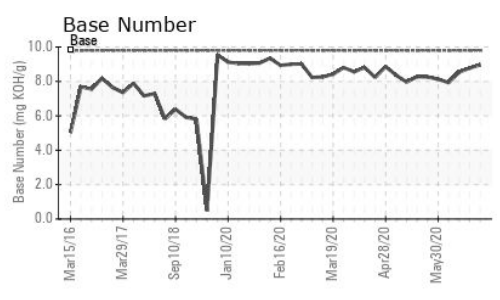
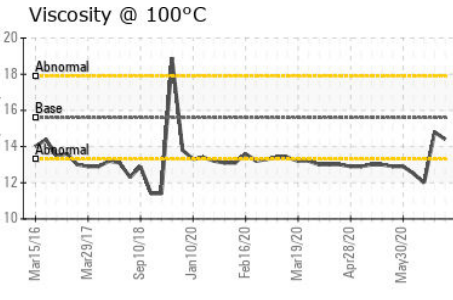
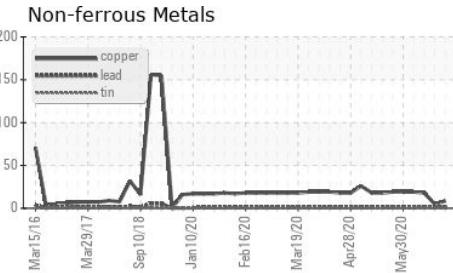
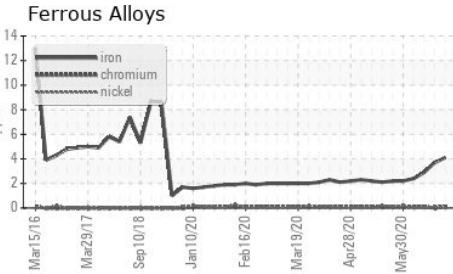
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2560000	---	---	---	
Particles >6µm	ASTM D7647	>2560000	---	---	---	
Particles >14µm	ASTM D7647	>2560000	---	---	---	
Particles >21µm	ASTM D7647	>640000	---	---	---	
Particles >38µm	ASTM D7647	>160000	---	---	---	
Particles >71µm	ASTM D7647	>40000	---	---	---	
Oil Cleanliness	ISO 4406 (c)	>28/28/28	---	---	---	

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>12.6</b>	8.5	13.6
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	<b>8.96</b>	8.78	8.54

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 @ 40°C	cSt	ASTM D7279(m)	118.2	<b>105</b>	112	▲ 80.3
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	<b>14.4</b>	14.8	▲ 12.0
Viscosity Index (VI)	Scale	ASTM D2270*	139	<b>140</b>	136	144

## GRAPHS



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0052569  
**Lab Number** : **02581997**  
**Unique Number** : 5643062  
**Test Package** : MAR 2 ( Additional Tests: FUEL DILUTION, KV40, PercentFuel, PQ, PRTCount, VI )

**Received** : 13 Sep 2023  
**Diagnosed** : 18 Sep 2023  
**Diagnostician** : Bill Quesnel

**Suncor - Terra Nova Projects**  
 Scotia Centre, 235 Water Street  
 St. John's, NL  
 CA A1C 1B6  
 Contact: Josh Hynes  
 joshhynes@suncor.com  
 T: (709)778-3575  
 F: (709)724-2835

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.