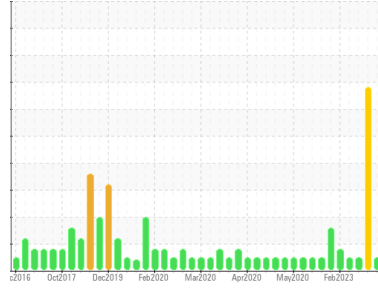


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area

Fwd Machinery Space [450328074]

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

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination 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		PC0076343	PC	PC
Sample Date	Client Info		20 Mar 2024	13 Mar 2024	06 Dec 2023
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	ABNORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>6	<1.0	<1.0	<1.0
Water	WC Method	>0.2	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		0	0	---
Iron	ppm	ASTM D5185(m) >100	5	0	4
Chromium	ppm	ASTM D5185(m) >20	0	0	0
Nickel	ppm	ASTM D5185(m) >2	0	0	<1
Titanium	ppm	ASTM D5185(m) >2	0	0	0
Silver	ppm	ASTM D5185(m) >2	0	0	0
Aluminum	ppm	ASTM D5185(m) >25	1	0	1
Lead	ppm	ASTM D5185(m) >40	1	0	2
Copper	ppm	ASTM D5185(m) >330	12	0	10
Tin	ppm	ASTM D5185(m) >15	0	0	<1
Antimony	ppm	ASTM D5185(m)	0	0	0
Vanadium	ppm	ASTM D5185(m)	0	0	0
Beryllium	ppm	ASTM D5185(m)	0	0	0
Cadmium	ppm	ASTM D5185(m)	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 0	<1	<1	<1
Barium	ppm	ASTM D5185(m) 0	<1	0	0
Molybdenum	ppm	ASTM D5185(m) 60	54	0	53
Manganese	ppm	ASTM D5185(m) 0	0	0	0
Magnesium	ppm	ASTM D5185(m) 1010	911	<1	872
Calcium	ppm	ASTM D5185(m) 1070	980	2	955
Phosphorus	ppm	ASTM D5185(m) 1150	933	11	949
Zinc	ppm	ASTM D5185(m) 1270	1093	2	1058
Sulfur	ppm	ASTM D5185(m) 2060	2383	1538	2556
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

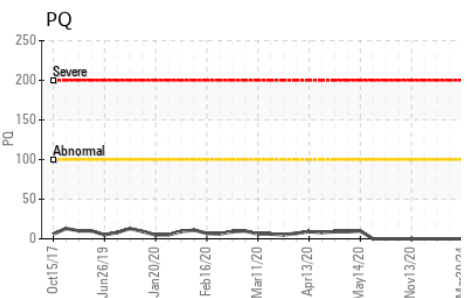
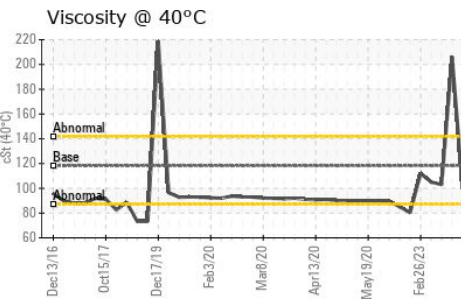
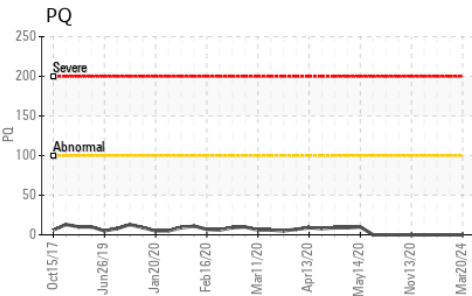
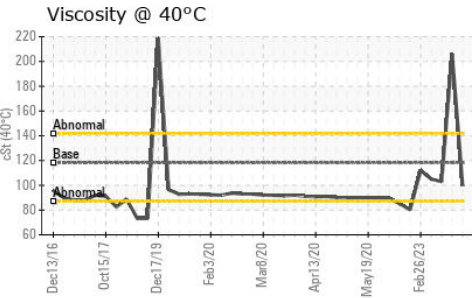
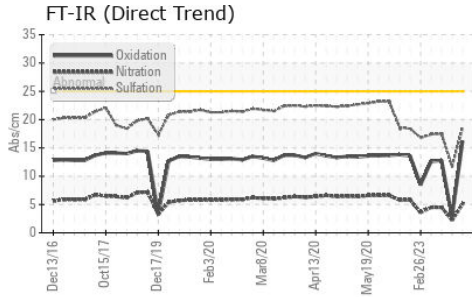
CONTAMINANTS

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

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844* >3	0	0	0
Nitration	Abs/cm	ASTM D7624* >20	5.1	2.2	4.5
Sulfation	Abs./1mm	ASTM D7415* >30	18.5	11.7	17.5

OIL ANALYSIS REPORT

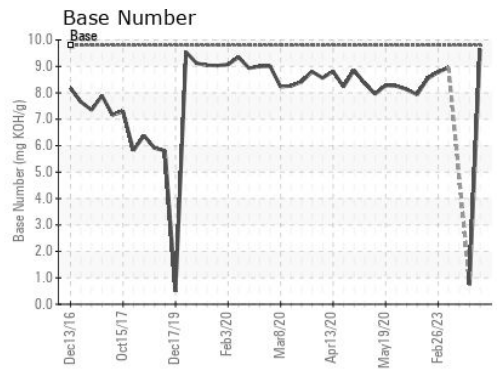
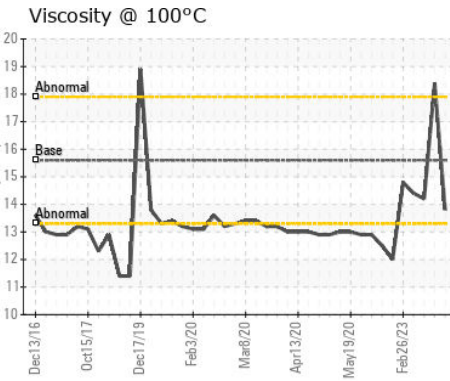
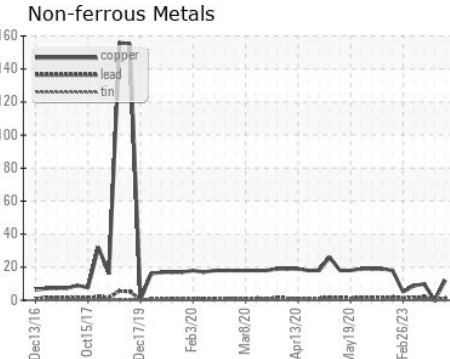
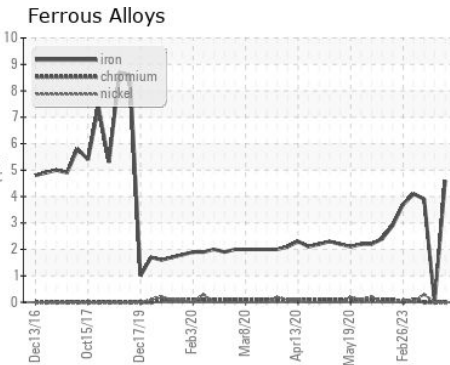


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	16.2	2.8	12.8
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	9.64	▲ 0.75	---

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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	118.2	99.6	▲ 206	103
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	13.8	▲ 18.4	14.2
Viscosity Index (VI)	Scale	ASTM D2270*	139	139	▲ 98	140

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0076343
Lab Number : **02625948**
Unique Number : 5759080
Test Package : MAR 2 (Additional Tests: KV40, PQ, PrtCount, VI)

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.*