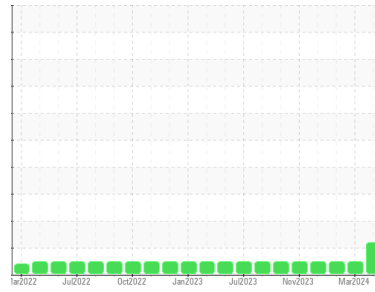


OIL ANALYSIS REPORT

Area
Plymouth & Brockton
 Machine Id
11443
 Component
Diesel Engine
 Fluid
PETRO CANADA 15W40 (36 QTS)

Sample Rating Trend



VISUAL METAL



DIAGNOSIS

Recommendation
 Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
 Moderate concentration of visible metal present. 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		PCA0104605	PCA0104432	PCA0110051
Sample Date	Client Info		05 Jun 2024	05 Mar 2024	30 Jan 2024
Machine Age	mls	Client Info	250957	227125	215366
Oil Age	mls	Client Info	24000	24000	12000
Oil Changed	Client Info		Changed	Changed	Not Changed
Sample Status			ABNORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	<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
Iron	ppm	ASTM D5185m >165	15	16	10
Chromium	ppm	ASTM D5185m >5	2	<1	<1
Nickel	ppm	ASTM D5185m >4	0	0	0
Titanium	ppm	ASTM D5185m >2	<1	<1	<1
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >20	2	3	1
Lead	ppm	ASTM D5185m >150	0	0	0
Copper	ppm	ASTM D5185m >90	<1	2	<1
Tin	ppm	ASTM D5185m >5	0	0	0
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	3	6	8
Barium	ppm	ASTM D5185m	0	0	3
Molybdenum	ppm	ASTM D5185m	60	55	61
Manganese	ppm	ASTM D5185m	<1	<1	0
Magnesium	ppm	ASTM D5185m	995	890	890
Calcium	ppm	ASTM D5185m	1201	1024	1072
Phosphorus	ppm	ASTM D5185m	1042	869	988
Zinc	ppm	ASTM D5185m	1279	1123	1174
Sulfur	ppm	ASTM D5185m	3466	3166	3378

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >35	4	3	3
Sodium	ppm	ASTM D5185m	4	3	0
Potassium	ppm	ASTM D5185m >20	1	0	2

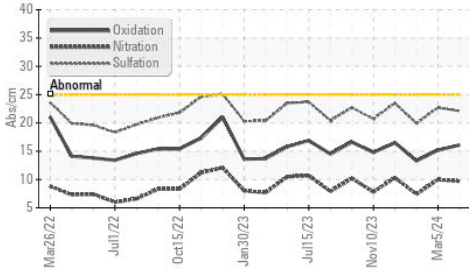
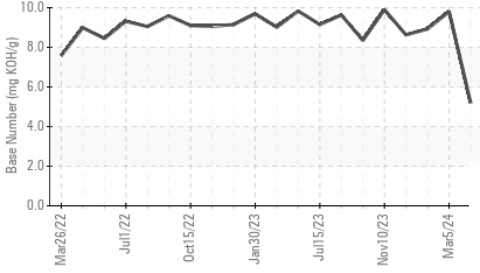
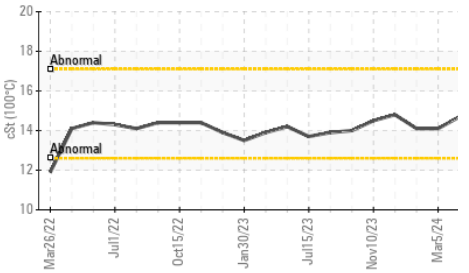
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >7.5	1.8	2.5	1.4
Nitration	Abs/cm	*ASTM D7624 >20	9.7	10.0	7.4
Sulfation	Abs/.1mm	*ASTM D7415 >30	22.1	22.7	19.9

FLUID DEGRADATION

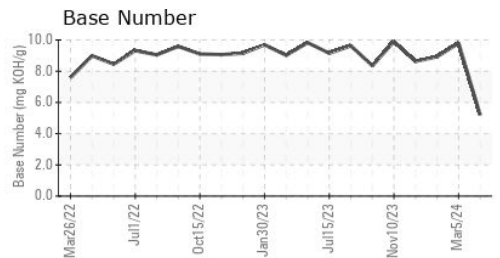
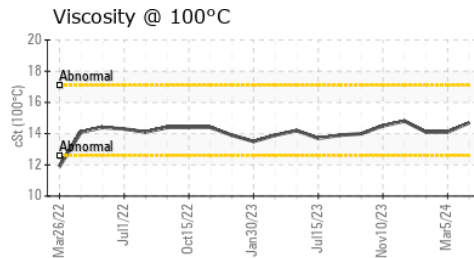
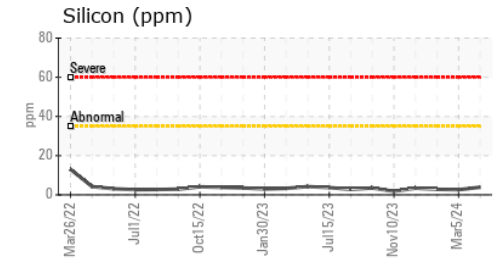
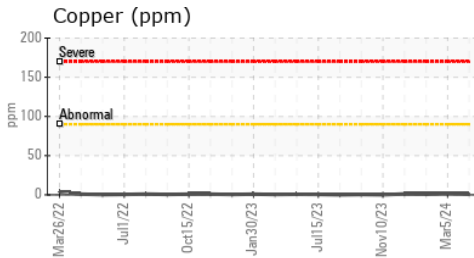
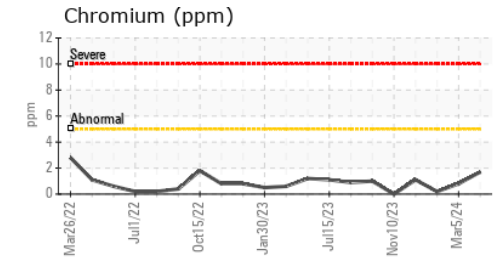
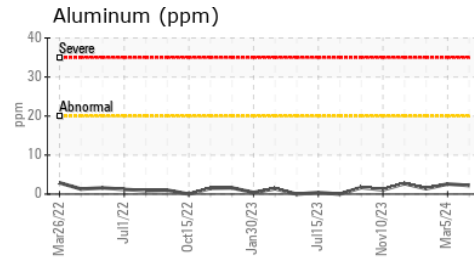
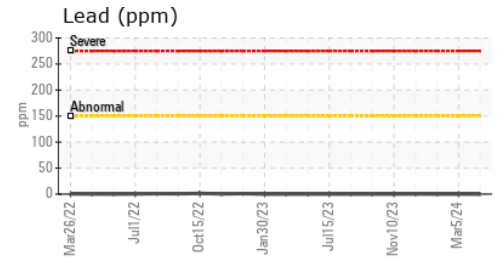
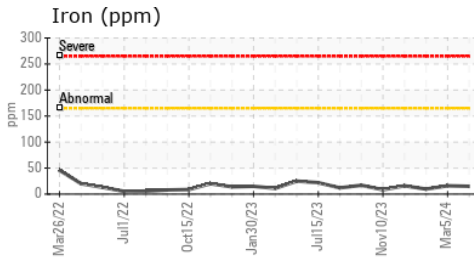
	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	16.1	15.2	13.3
Base Number (BN)	mg KOH/g	ASTM D2896	5.20	9.80	8.93

OIL ANALYSIS REPORT

FT-IR (Direct Trend)

Base Number

Viscosity @ 100°C


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	▲ MODER	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.7	14.1	14.1

GRAPHS


Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0104605 **Received** : 19 Jun 2024
Lab Number : 06214938 **Tested** : 20 Jun 2024
Unique Number : 11087802 **Diagnosed** : 21 Jun 2024 - Sean Felton
Test Package : MOB 2

PLYMOUTH & BROCKTON
 8 INDUSTRIAL PARK RD
 PLYMOUTH, MA
 US 02360
 Contact: Donald Pelquin
 Dpelquin@P-B.com
 T: (508)732-6039
 F: (508)732-6091

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)