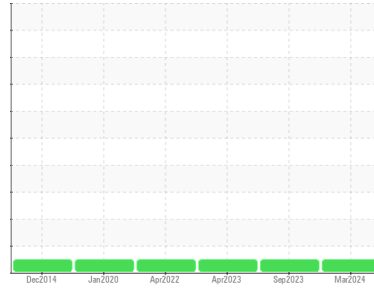




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
PH60205213 (S/N 7915)

Component
Port Main Engine

Fluid
PETRO CANADA BP ENERGOL DS3 154 (810 LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

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			WC0873827	WC0797079	WC0797085
Sample Date	Client Info			09 Mar 2024	15 Sep 2023	16 Apr 2023
Machine Age	hrs	Client Info		39119	38440	37920
Oil Age	hrs	Client Info		8901	0	19207
Oil Changed	Client Info			Not Changed	N/A	Not Changed
Sample Status				NORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>4.0		<1.0	<1.0	<1.0
Water	WC Method	>0.1		NEG	NEG	NEG
Glycol	WC Method			NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		0	0	0
Iron	ppm	ASTM D5185(m)	>75	5	6	5
Chromium	ppm	ASTM D5185(m)	>8	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	0	0	0
Titanium	ppm	ASTM D5185(m)	>3	0	0	<1
Silver	ppm	ASTM D5185(m)	>2	0	<1	0
Aluminum	ppm	ASTM D5185(m)	>15	1	2	1
Lead	ppm	ASTM D5185(m)	>18	0	<1	<1
Copper	ppm	ASTM D5185(m)	>80	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>14	0	0	0
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

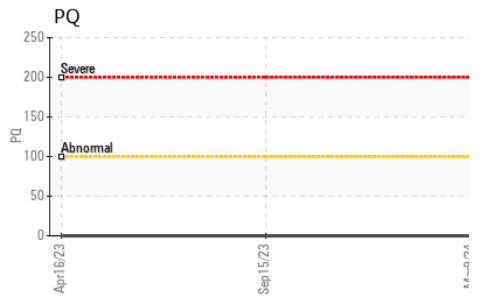
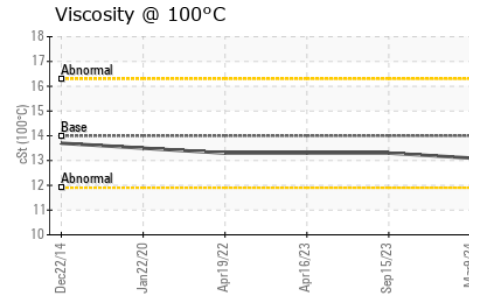
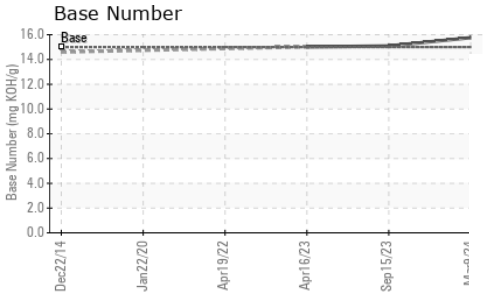
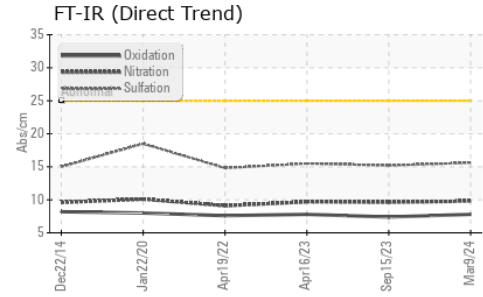
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	3	4	3
Barium	ppm	ASTM D5185(m)	0	0	<1	0
Molybdenum	ppm	ASTM D5185(m)	0	1	2	2
Manganese	ppm	ASTM D5185(m)		0	0	<1
Magnesium	ppm	ASTM D5185(m)	15	41	39	39
Calcium	ppm	ASTM D5185(m)	5500	5182	5364	5562
Phosphorus	ppm	ASTM D5185(m)	580	890	955	1006
Zinc	ppm	ASTM D5185(m)	650	975	1024	1030
Sulfur	ppm	ASTM D5185(m)	8500	9533	9941	10012
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	7	8	7
Sodium	ppm	ASTM D5185(m)	>75	1	1	<1
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	<1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		0.3	0.3	0.2
Nitration	Abs/cm	ASTM D7624*	>20	9.8	9.6	9.7
Sulfation	Abs.1mm	ASTM D7415*	>30	15.6	15.2	15.5



OIL ANALYSIS REPORT

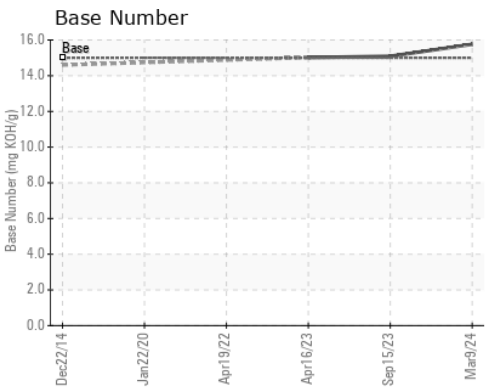
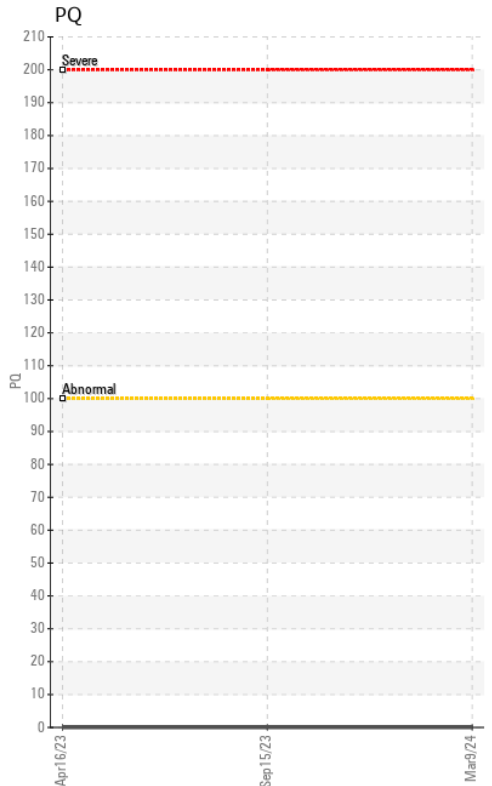
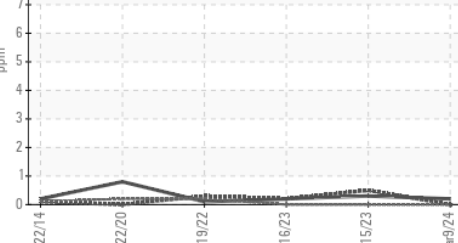
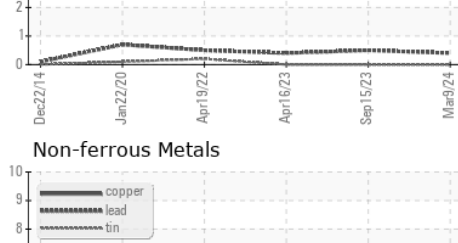
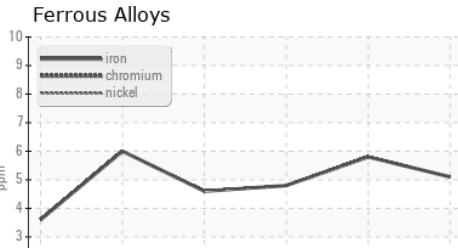


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	7.8	7.4	7.8
Base Number (BN)	mg KOH/g	ASTM D2896*	15	15.76	15.09	15.02

VISUAL	method	limit/base	current	history1	history2	
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D7279(m)	14.0	13.1	13.3	13.3

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0873827
Lab Number : 02626900
Unique Number : 5760032
Test Package : MAR 3

CANSHIP UGLAND LTD.
 PLACENTIA HOPE, P.O. BOX 8274, STN. A
 ST. JOHN'S, NL
 CA A1B 3N4
 Contact: Brian Bishop
 bbishop@canship.com
 T: (709)782-7341
 F: (709)782-0225

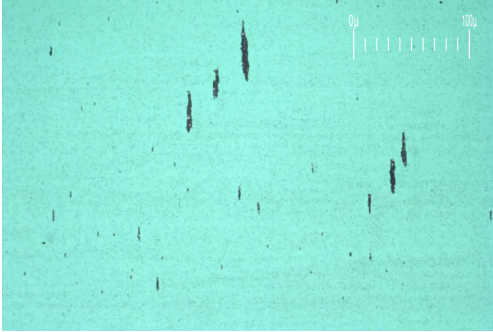
To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.



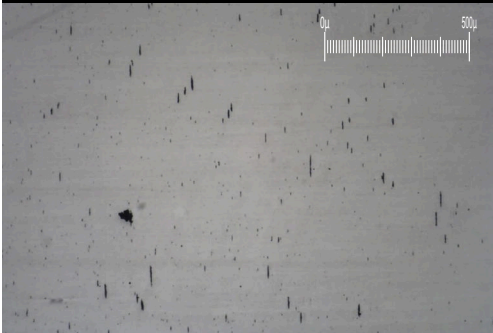
FERROGRAPHY REPORT

Machine Id
PH60205213 (S/N 7915)
 Component
Port Main Engine
 Fluid
PETRO CANADA BP ENERGOL DS3 154 (810 LTR)

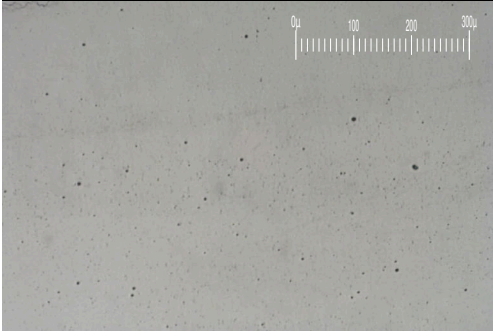
Magn: 200x Illum: BC



Magn: 50x Illum: RW



Magn: 100x Illum: RW

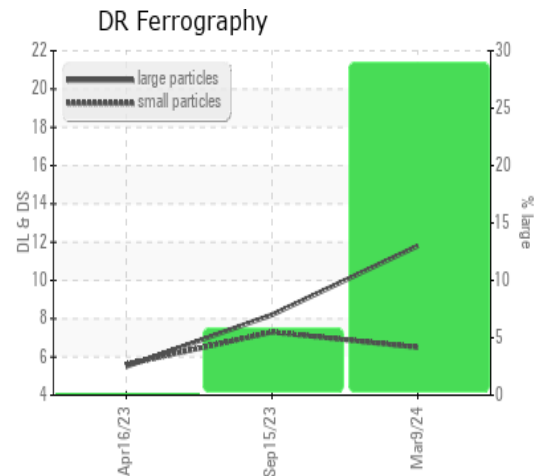


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		11.8	8.2	5.5
Small Particles		DR-Ferr*		6.5	7.3	5.6
Total Particles		DR-Ferr*	>---	18.3	15.5	11.1
Large Particles Percentage	%	DR-Ferr*		29	5.8	0
Severity Index		DR-Ferr*		63	7	1

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		2	2	3
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*				
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*		1	1	2

WEAR

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



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