



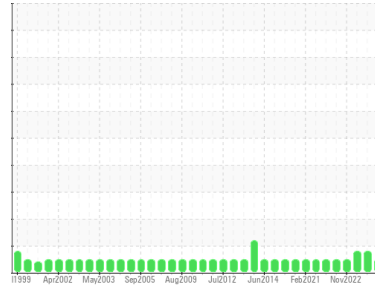
OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
PH652.010.10 (S/N 2WB17760)
 Component
Port Auxiliary Engine
 Fluid
PETRO CANADA DURON HP 15W40 (68 LTR)



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal. The direct-reading & analytical ferrographic 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		WC0797078	WC0797086	WC0797089
Sample Date	Client Info		15 Sep 2023	16 Apr 2023	23 Mar 2023
Machine Age	hrs	Client Info	23211	22918	22881
Oil Age	hrs	Client Info	300	407	370
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			NORMAL	MARGINAL	MARGINAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<1.0	▲ 3.2	▲ 2.9
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) >85	2	6	6
Chromium	ppm	ASTM D5185(m) >4	0	0	0
Nickel	ppm	ASTM D5185(m) >4	0	0	0
Titanium	ppm	ASTM D5185(m) >2	0	0	0
Silver	ppm	ASTM D5185(m) >2	<1	0	0
Aluminum	ppm	ASTM D5185(m) >15	<1	1	1
Lead	ppm	ASTM D5185(m) >15	<1	3	3
Copper	ppm	ASTM D5185(m) >250	2	3	2
Tin	ppm	ASTM D5185(m) >4	0	<1	<1
Antimony	ppm	ASTM D5185(m)	0	<1	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	2	1	1
Barium	ppm	ASTM D5185(m) 0	<1	0	0
Molybdenum	ppm	ASTM D5185(m) 60	60	58	57
Manganese	ppm	ASTM D5185(m) 0	0	<1	<1
Magnesium	ppm	ASTM D5185(m) 1010	980	955	994
Calcium	ppm	ASTM D5185(m) 1070	1050	1126	1129
Phosphorus	ppm	ASTM D5185(m) 1150	1035	1092	1108
Zinc	ppm	ASTM D5185(m) 1270	1183	1223	1216
Sulfur	ppm	ASTM D5185(m) 2060	2598	2629	2675
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

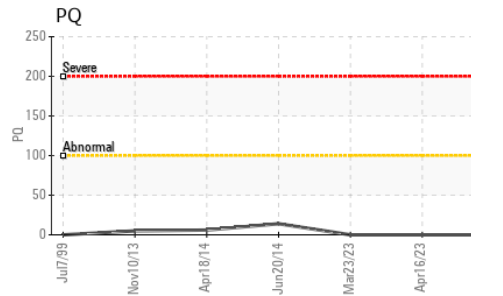
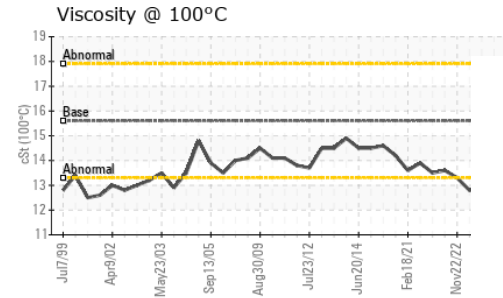
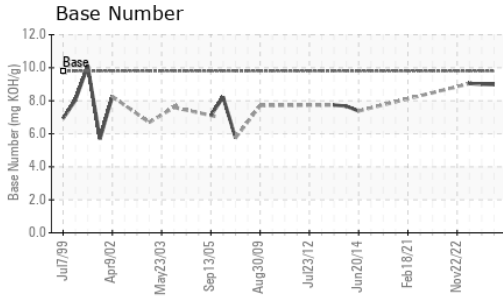
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >35	2	2	2
Sodium	ppm	ASTM D5185(m)	1	2	2
Potassium	ppm	ASTM D5185(m) >20	0	<1	0

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	0	0	0
Nitration	Abs/cm	ASTM D7624* >20	5.5	6.4	6.9
Sulfation	Abs./1mm	ASTM D7415* >30	18.3	19.1	22.2



OIL ANALYSIS REPORT

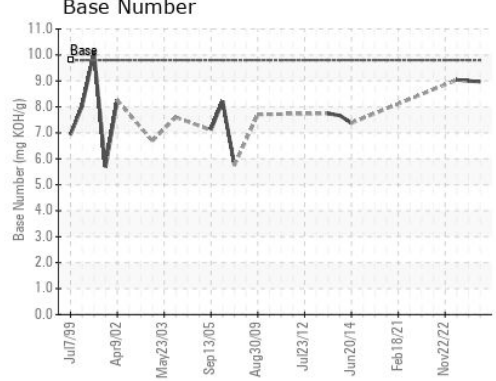
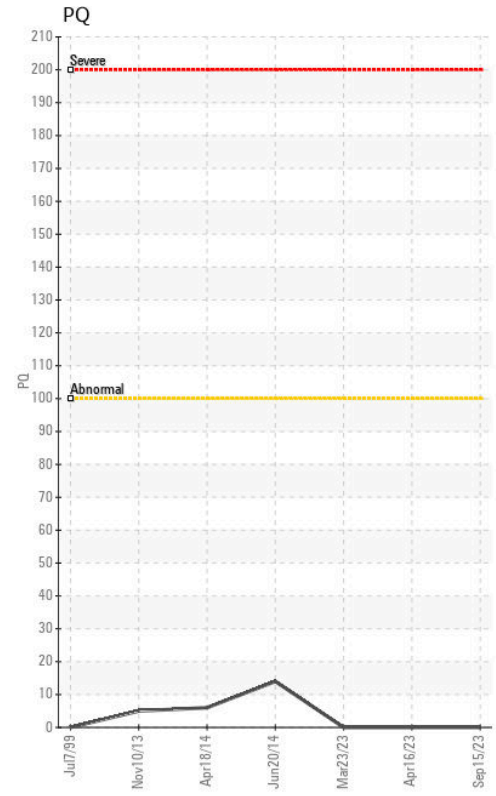
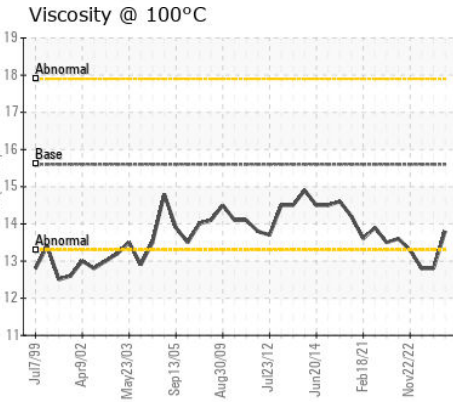
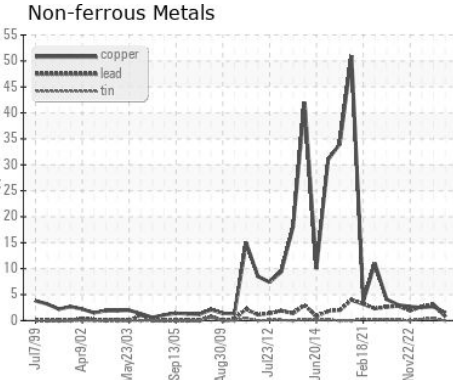
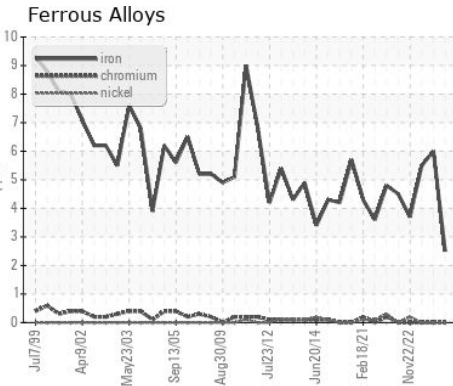


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	13.6	14.9	15.6
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	8.97	9.00	9.04

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)	15.6	13.8	12.8	12.8

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0797078
Lab Number : **02587517**
Unique Number : 5656583
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
PH652.010.10 (S/N 2WB17760)
 Component
Port Auxiliary Engine
 Fluid
PETRO CANADA DURON HP 15W40 (68 LTR)

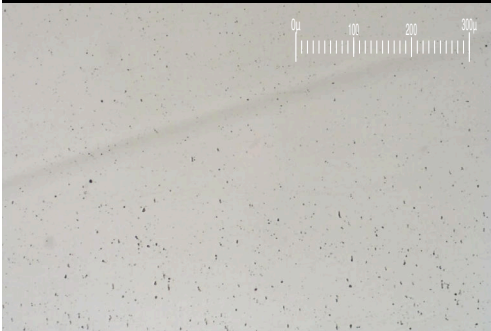
Magn: 200x Illum: BC



Magn: 50x Illum: RW



Magn: 100x Illum: RW



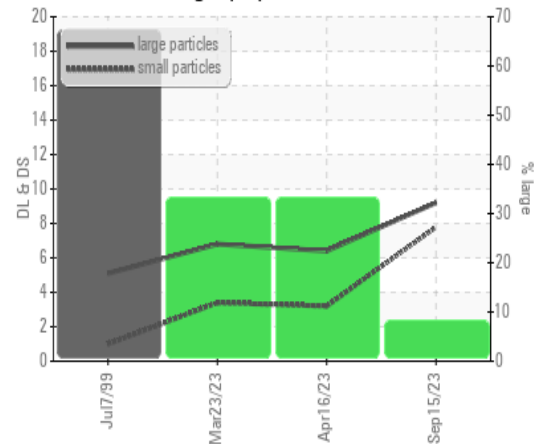
DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		9.2	6.4	6.8
Small Particles		DR-Ferr*		7.8	3.2	3.4
Total Particles		DR-Ferr*	>---	17	9.6	10.2
Large Particles Percentage	%	DR-Ferr*		8.2	33.3	33.3
Severity Index		DR-Ferr*		13	20	23

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

WEAR

All component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system.

DR Ferrography



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