



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINANTS	ABNORMAL
OIL CONDITION	ABNORMAL

Area
Emergency Generator Room
Machine Id
Emergency Generator (S/N 40601268)
Component
Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (30 LTR)

RECOMMENDATION

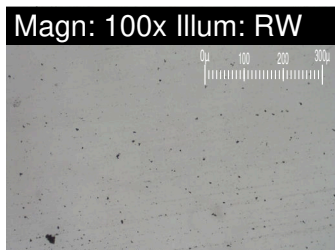
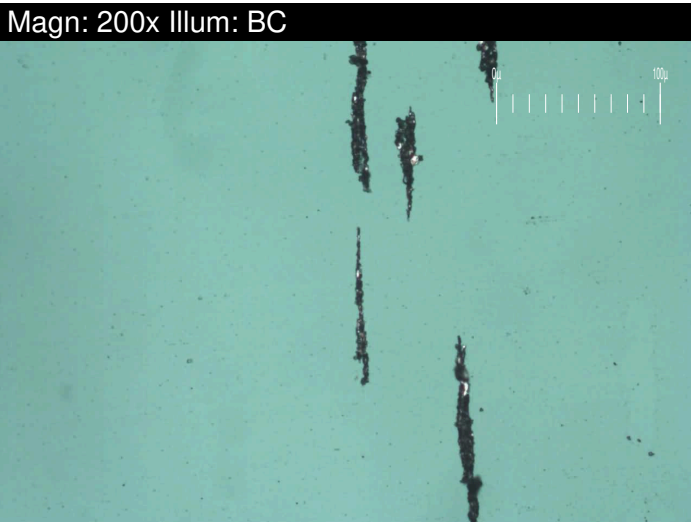
The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

WEAR

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

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0432965	WC0432954	WC0432963
Sample Date		Client Info		05 Nov 2020	17 Jul 2020	16 May 2020
Machine Age	hrs	Client Info		1432	1411	1386
Oil Age	hrs	Client Info		34	13	17
Filter Age	hrs	Client Info		124	103	78
Oil Changed		Client Info		Changed	Not Chngd	Not Chngd
Filter Changed		Client Info		Changed	Not Chngd	Not Chngd
Sample Status				ABNORMAL	NORMAL	NORMAL

PQ		ASTM D8184*		0	0	0
Iron	ppm	ASTM D5185(m)	>80	2	1	1
Chromium	ppm	ASTM D5185(m)	>4	<1	0	<1
Nickel	ppm	ASTM D5185(m)	>4	0	<1	0
Titanium	ppm	ASTM D5185(m)		0	0	<1
Silver	ppm	ASTM D5185(m)		0	0	<1
Aluminum	ppm	ASTM D5185(m)	>10	<1	<1	<1
Lead	ppm	ASTM D5185(m)	>15	<1	0	0
Copper	ppm	ASTM D5185(m)	>230	8	<1	<1
Tin	ppm	ASTM D5185(m)	>4	<1	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Large Particles		DR-Ferr*		77.1	8.9	11.3
Small Particles		DR-Ferr*		15.5	7.1	7.4
Total Particles		DR-Ferr*	>---	92.6	16	18.7
Large Particles Percentage	%	DR-Ferr*		66.5	11.3	20.9
Severity Index		DR-Ferr*		4749	16	44.1
Ferrous Rubbing	Scale 0-10	ASTM D7684*		2	2	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*				
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*				



CONTAMINANTS

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

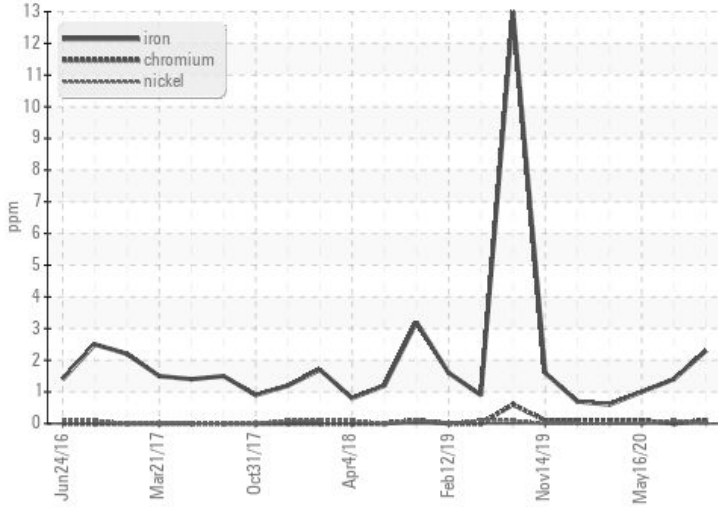
Silicon	ppm	ASTM D5185(m)	>25	2	2	2
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	<1
Fuel	%	ASTM D7593*	>5	▲ 6.1	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	0	0	0
Nitration	Abs/cm	ASTM D7624*	>20	4.9	4.8	5.8
Sulfation	Abs/.1mm	ASTM D7415*	>30	17.2	17.7	22.5
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Carbonaceous Material	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*		2	1	1

OIL CONDITION

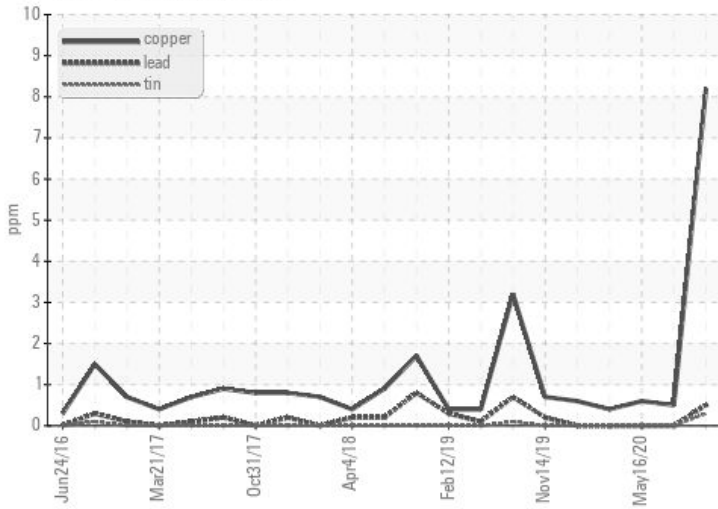
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185(m)		2	<1	<1
Boron	ppm	ASTM D5185(m)	0	2	2	2
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	50	56	58
Manganese	ppm	ASTM D5185(m)	0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	828	953	955
Calcium	ppm	ASTM D5185(m)	1070	889	980	1040
Phosphorus	ppm	ASTM D5185(m)	1150	891	1026	1050
Zinc	ppm	ASTM D5185(m)	1270	1073	1168	1197
Sulfur	ppm	ASTM D5185(m)	2060	2407	2630	2686
Oxidation	Abs/.1mm	ASTM D7414*	>25	12.7	13.3	12.9
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	8.15	8.86	9.17
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	▲ 11.8	14.0	13.5
Lubricant Degradation	Scale 0-10	ASTM D7684*				

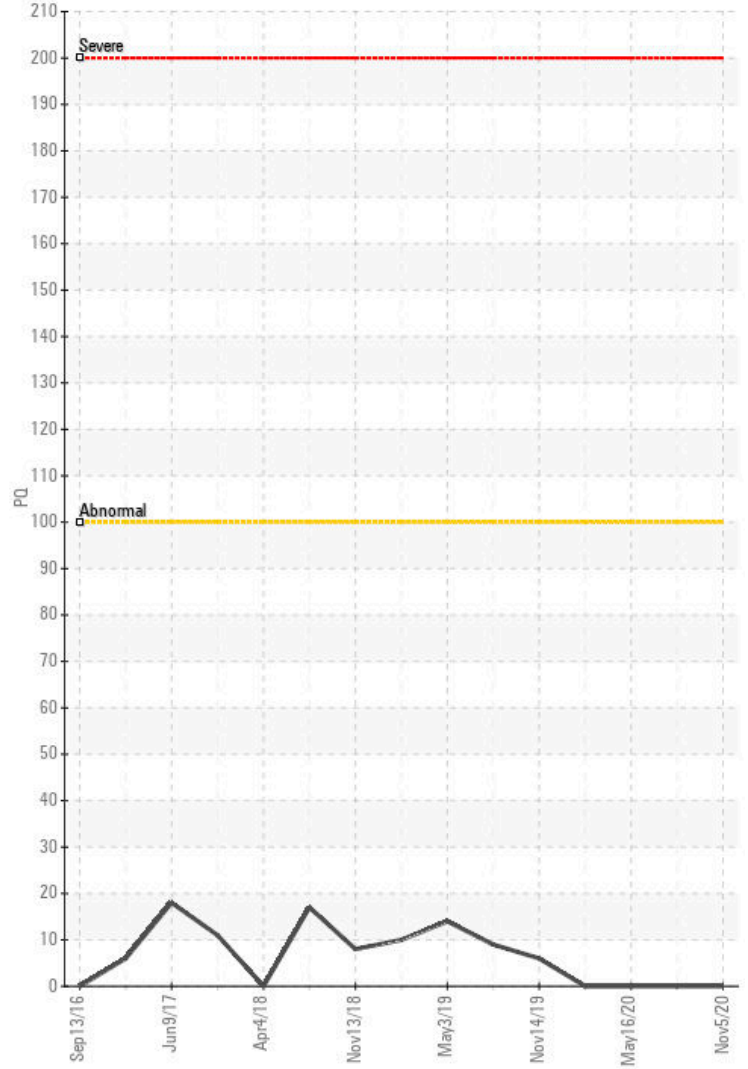
Ferrous Alloys



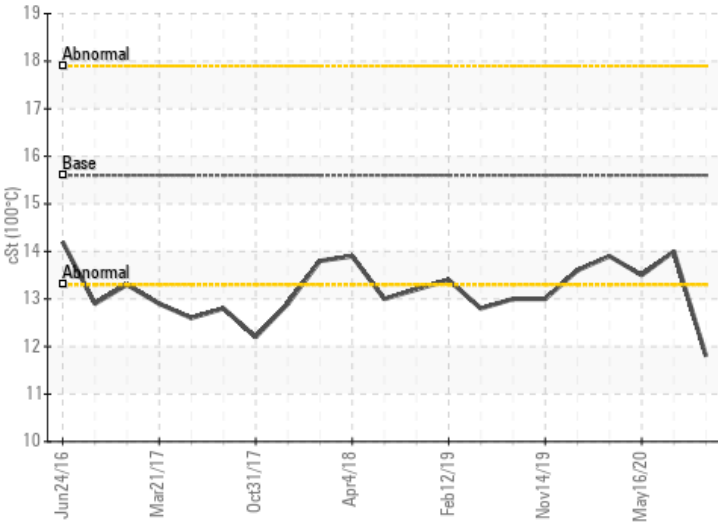
Non-ferrous Metals



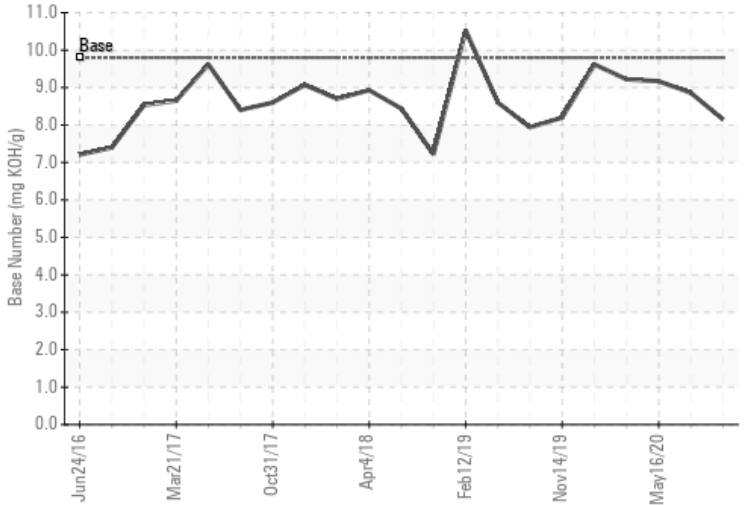
PQ



▲ Viscosity @ 100°C



Base Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0432965
Lab Number : 02389938
Unique Number : 5137395
Test Package : MAR 3 (Additional Tests: FuelDilution, PercentFuel)

CANADIAN COAST GUARD
 CCGS GRIFFON, PO BOX 1000, 401 KING ST.W
 Prescott, ON
 CA K6V 5T3
 Contact: Laurie Bosley
 Laurie.Bosley@dfo-mpo.gc.ca

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.

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