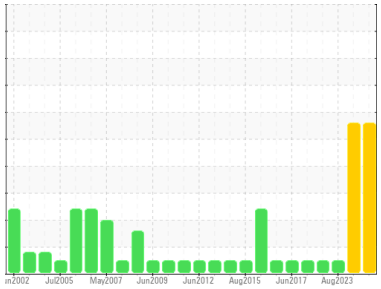
PROBLEM SUMMARY

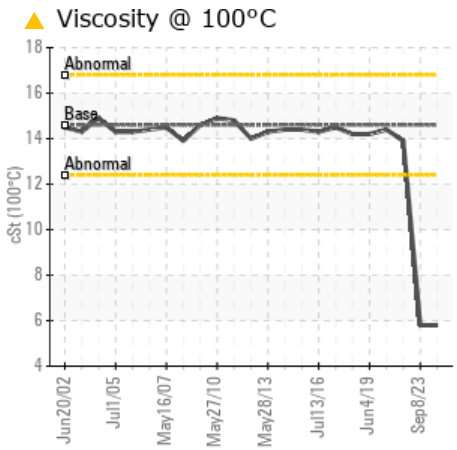
Sample Rating Trend

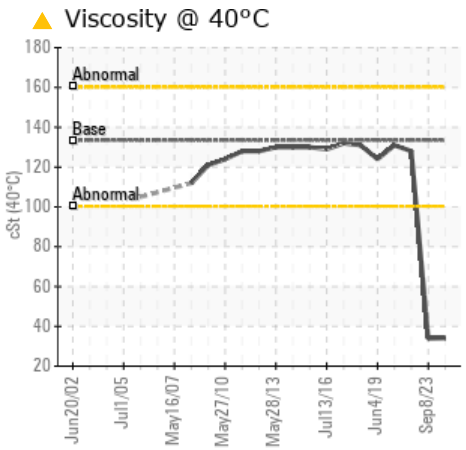


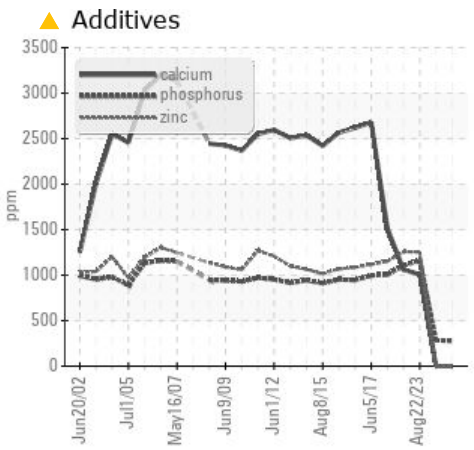
DEGRADATION

Area
Main Power Generation [450204181]
Machine Id
Generator MPG #1 (Stbd) - Starting Engine Crank Case (S/N Sample Tag XX-80101-S2)
Component
Diesel Engine
Fluid
PETRO CANADA DURON MOTOR OIL SAE 40 (37 LTR)

COMPONENT CONDITION SUMMARY







RECOMMENDATION

We advise an early resample to confirm this situation. NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	NORMAL
Calcium	ppm	ASTM D5185(m)	2540	▲ **0**	▲ <1	1008
Phosphorus	ppm	ASTM D5185(m)	1000	▲ **276**	▲ 284	1161
Zinc	ppm	ASTM D5185(m)	1110	▲ **2**	▲ 2	1252
Sulfur	ppm	ASTM D5185(m)	3700	▲ **789**	▲ 644	2731
Base Number (BN)	mg KOH/g	ASTM D2896*	7.9	⬢ **0.09**	⬢ 0.14	8.17
Visc @ 40°C	cSt	ASTM D7279(m)	133.5	▲ **34.1**	▲ 33.9	128
Visc @ 100°C	cSt	ASTM D7279(m)	14.6	▲ **5.8**	▲ 5.8	13.9

Customer Id: TERHAM
Sample No.: PC0011830
Lab Number: 02584592
Test Package: MAR 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Bill Quesnel CLS,OMA II,MLA-III,LLA-I +1 (289)291-4641 x4641
Bill.Quesnel@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We advise an early resample to confirm this situation.
Alert	---	---	?	NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.

HISTORICAL DIAGNOSIS

08 Sep 2023 Diag: Bill Quesnel

DEGRADATION

We advise an early resample to confirm this situation. NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.All component wear rates are normal. Fuel content negligible. There is no indication of any contamination in the oil. The low BN value indicates relatively little reserve alkalinity remaining in this oil. Viscosity of sample indicates oil is within SAE 20 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The oil is no longer serviceable.

view report

22 Aug 2023 Diag: Kevin Marson

NORMAL

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. Please specify the component make and model with your next sample.All component wear rates are normal. There is no indication of any contamination in the oil. Additive levels indicate the addition of a different brand, or type of oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

03 Nov 2019 Diag: Kevin Marson

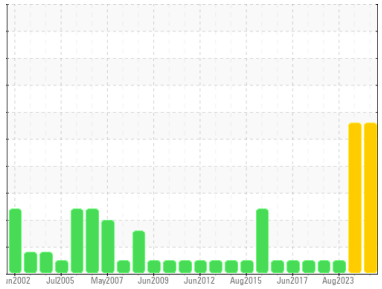
NORMAL

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. Please specify the component make and model with your next sample.All component wear rates are normal. ISO Cleanliness Code (ISO 4406:1999): 23/18/12; Cumulative particle counts >4µm = 57300, >6µm = 2230, >14µm = 37, >21µm = 13, >38µm = 2, >71µm = 0. Additive levels indicate the addition of a different brand, or type of oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Area
Main Power Generation [450204181]
Machine Id
Generator MPG #1 (Stbd) - Starting Engine Crank Case (S/N Sample Tag XX-80101-S2)
Component
Diesel Engine
Fluid
PETRO CANADA DURON MOTOR OIL SAE 40 (37 LTR)

DIAGNOSIS

Recommendation

We advise an early resample to confirm this situation. NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The low BN value indicates relatively little reserve alkalinity remaining in this oil. Viscosity of sample indicates oil is within SAE 20 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The oil is no longer serviceable.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC0011830**	PC0011833	PC0052571
Sample Date		Client Info		**08 Sep 2023**	08 Sep 2023	22 Aug 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				**SEVERE**	SEVERE	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	0.6	<1.0
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)	>100	**1**	1	29
Chromium	ppm	ASTM D5185(m)	>20	**0**	0	1
Nickel	ppm	ASTM D5185(m)	>4	**0**	0	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)	>3	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**<1**	<1	4
Lead	ppm	ASTM D5185(m)	>40	**0**	0	2
Copper	ppm	ASTM D5185(m)	>330	**<1**	<1	7
Tin	ppm	ASTM D5185(m)	>15	**1**	1	3
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

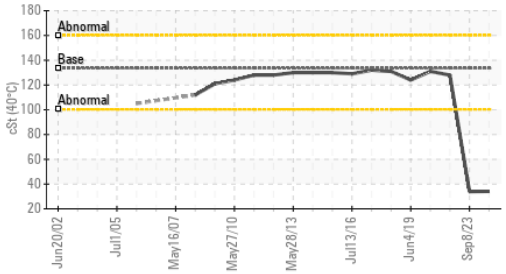
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	1.0	**<1**	<1	<1
Barium	ppm	ASTM D5185(m)	1.0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	1.0	**0**	0	<1
Manganese	ppm	ASTM D5185(m)	1	**0**	0	<1
Magnesium	ppm	ASTM D5185(m)	15	**0**	0	942
Calcium	ppm	ASTM D5185(m)	2540	▲ **0**	▲ <1	1008
Phosphorus	ppm	ASTM D5185(m)	1000	▲ **276**	▲ 284	1161
Zinc	ppm	ASTM D5185(m)	1110	▲ **2**	▲ 2	1252
Sulfur	ppm	ASTM D5185(m)	3700	▲ **789**	▲ 644	2731
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**<1**	<1	14
Sodium	ppm	ASTM D5185(m)		**0**	0	2
Potassium	ppm	ASTM D5185(m)	>20	**0**	0	1

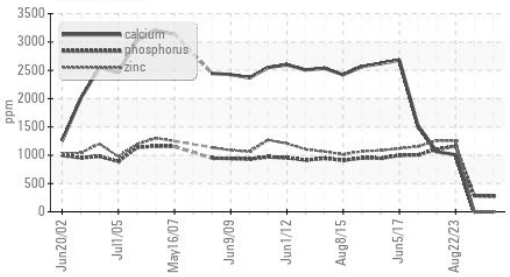
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**0**	0	0
Nitration	Abs/cm	ASTM D7624*	>20	**1.7**	1.6	3.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	**11.7**	11.7	12.3

OIL ANALYSIS REPORT

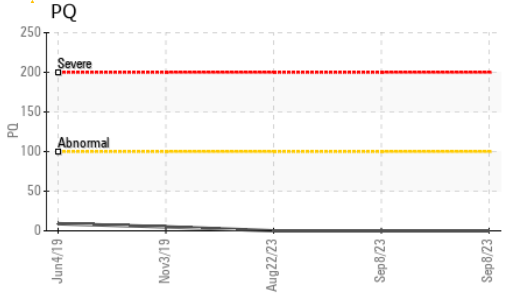
Viscosity @ 40°C



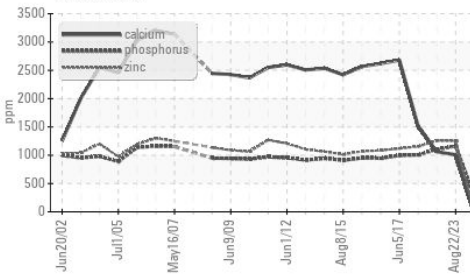
Additives



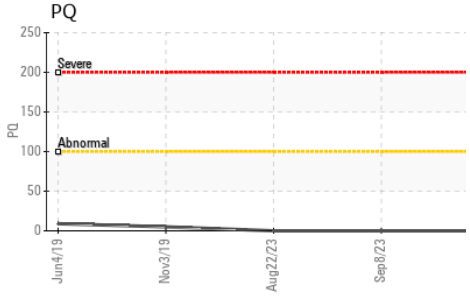
PQ



Additives



PQ



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	---	---	---
Particles >6µm		ASTM D7647	>5000	---	---	---
Particles >14µm		ASTM D7647	>640	---	---	---
Particles >21µm		ASTM D7647	>160	---	---	---
Particles >38µm		ASTM D7647	>40	---	---	---
Particles >71µm		ASTM D7647	>10	---	---	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	---	---	---

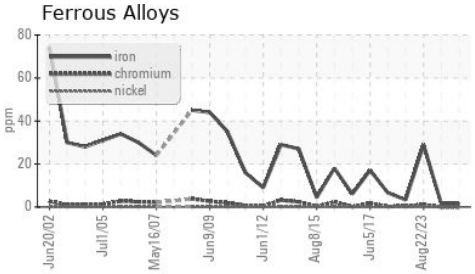
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**2.1**	2.1	6.1
Base Number (BN)	mg KOH/g	ASTM D2896*	7.9	**0.09**	0.14	8.17

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

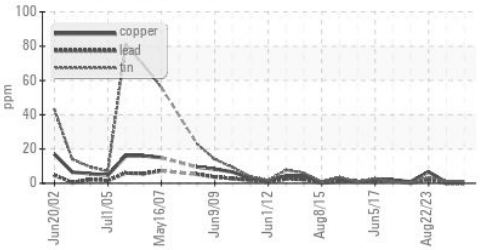
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	133.5	**34.1**	33.9	128
Visc @ 100°C	cSt	ASTM D7279(m)	14.6	**5.8**	5.8	13.9
Viscosity Index (VI)	Scale	ASTM D2270*	109	**111**	112	105

GRAPHS

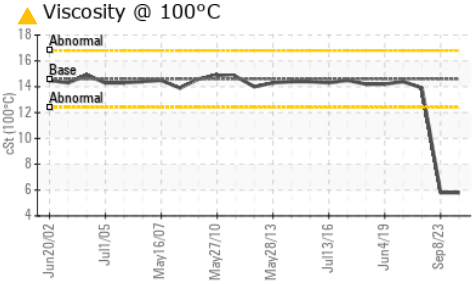
Ferrous Alloys



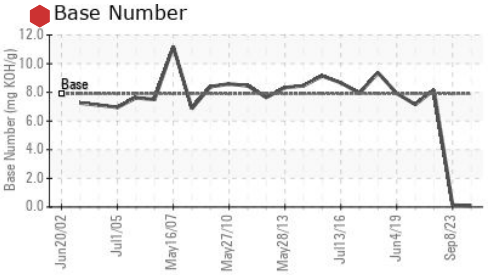
Non-ferrous Metals



Viscosity @ 100°C



Base Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0011830 **Received** : 22 Sep 2023
Lab Number : 02584592 **Diagnosed** : 26 Sep 2023
Unique Number : 5645657 **Diagnostician** : Bill Quesnel
Test Package : MAR 2 (Additional Tests: KV40, PQ, PrtCount, VI)

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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