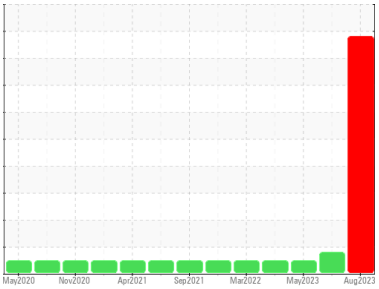
PROBLEM SUMMARY

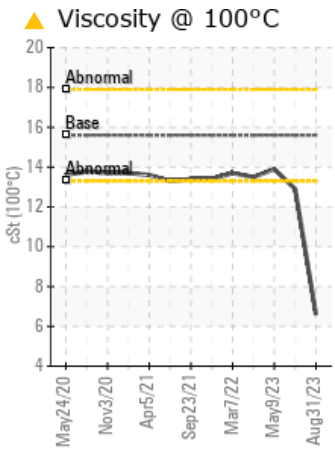
Sample Rating Trend

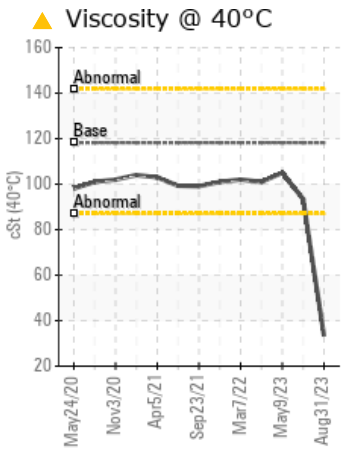


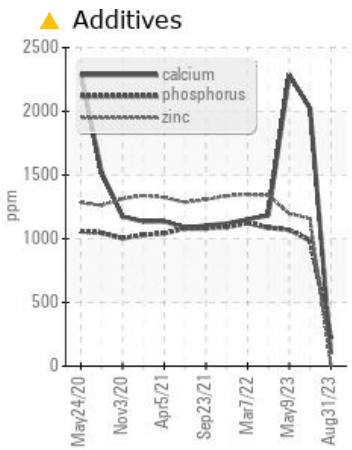
DEGRADATION

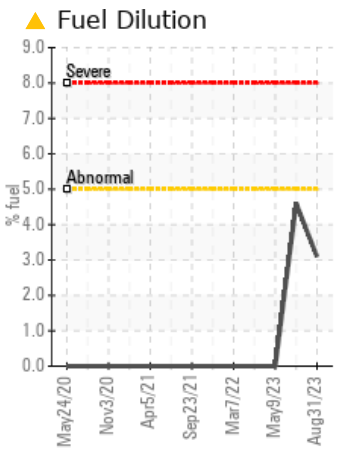
Machine Id
1419
Component
Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY









RECOMMENDATION

We advise that you check for faulty combustion and a possible overheat condition. The oil change at the time of sampling has been noted.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	MARGINAL	NORMAL
Boron	ppm	ASTM D5185(m)	0	▲ **63**	46	69
Molybdenum	ppm	ASTM D5185(m)	60	▲ **<1**	9	4
Magnesium	ppm	ASTM D5185(m)	1010	▲ **3**	118	34
Calcium	ppm	ASTM D5185(m)	1070	▲ **102**	2021	2287
Phosphorus	ppm	ASTM D5185(m)	1150	▲ **229**	987	1069
Zinc	ppm	ASTM D5185(m)	1270	▲ **8**	1157	1196
Fuel	%	ASTM D7593*	>5	▲ **3.1**	▲ 4.6	<1.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	▲ **30.3**	24.1	25.6
Oxidation	Abs/.1mm	ASTM D7414*	>25	▲ **40.2**	19.0	21.2
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	⬢ **2.11**	---	5.08
Visc @ 40°C	cSt	ASTM D7279(m)	118.2	▲ **33.4**	93.4	105
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	▲ **6.6**	12.9	13.9

Customer Id: STJNEW
Sample No.: PC0062042
Lab Number: 02582792
Test Package: IND 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
Check Combustion	---	---	?	We advise that you check for faulty combustion and a possible overheat condition.
Check For Overheating	---	---	?	We advise that you check for faulty combustion and a possible overheat condition.

HISTORICAL DIAGNOSIS

18 Jul 2023 Diag: Wes Davis

FUEL

The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. No other corrective action is recommended at this time.All component wear rates are normal. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Light fuel dilution occurring. No other contaminants were detected in the oil. Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.

view report

09 May 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. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. 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

26 Jul 2022 Diag: Kevin Marson

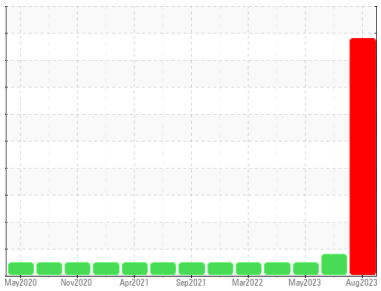
NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Machine Id
1419
Component
Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check for faulty combustion and a possible overheat condition. The oil change at the time of sampling has been noted.

Wear
All component wear rates are normal.

Contamination
There is an abnormal level of sulfation indicated. Light fuel dilution occurring.

Fluid Condition
A small degree of oil oxidation was indicated. The low BN value indicates relatively little reserve alkalinity remaining in this oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC0062042**	PC0018598	PC0061541
Sample Date		Client Info		**31 Aug 2023**	18 Jul 2023	09 May 2023
Machine Age	kms	Client Info		**604207**	597069	548463
Oil Age	kms	Client Info		**604207**	12148	15252
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	MARGINAL	NORMAL

CONTAMINATION	method	limit/base	current	history1	history2
Glycol	WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	**30**	30	24
Chromium	ppm	ASTM D5185(m)	>20	**0**	1	<1
Nickel	ppm	ASTM D5185(m)	>4	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)	>3	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**5**	3	3
Lead	ppm	ASTM D5185(m)	>40	**<1**	1	<1
Copper	ppm	ASTM D5185(m)	>330	**5**	5	6
Tin	ppm	ASTM D5185(m)	>15	**<1**	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

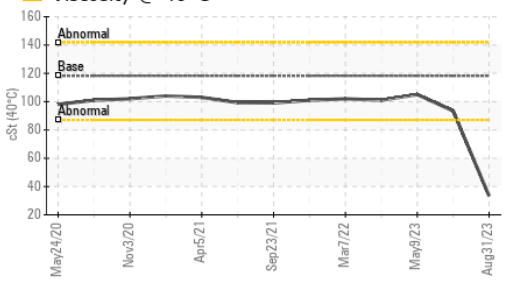
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	▲ **63**	46	69
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	▲ **<1**	9	4
Manganese	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	▲ **3**	118	34
Calcium	ppm	ASTM D5185(m)	1070	▲ **102**	2021	2287
Phosphorus	ppm	ASTM D5185(m)	1150	▲ **229**	987	1069
Zinc	ppm	ASTM D5185(m)	1270	▲ **8**	1157	1196
Sulfur	ppm	ASTM D5185(m)	2060	**1811**	2682	2857
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**4**	11	19
Sodium	ppm	ASTM D5185(m)		**5**	10	8
Potassium	ppm	ASTM D5185(m)	>20	**1**	7	8
Fuel	%	ASTM D7593*	>5	▲ **3.1**	▲ 4.6	<1.0

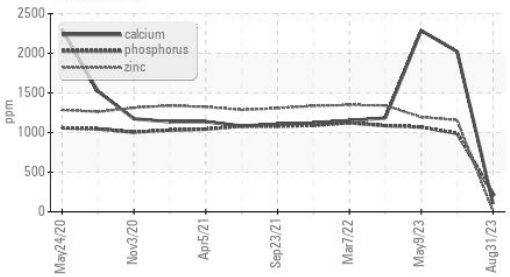
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**0**	0.7	0.6
Nitration	Abs/cm	ASTM D7624*	>20	**5.7**	10.1	10.2
Sulfation	Abs/.1mm	ASTM D7415*	>30	▲ **30.3**	24.1	25.6

OIL ANALYSIS REPORT

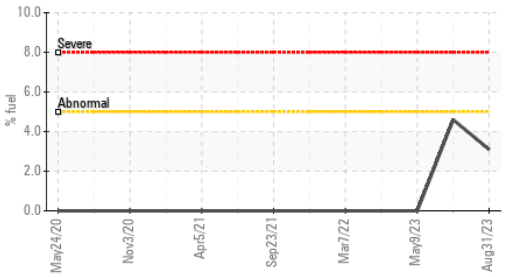
Viscosity @ 40°C



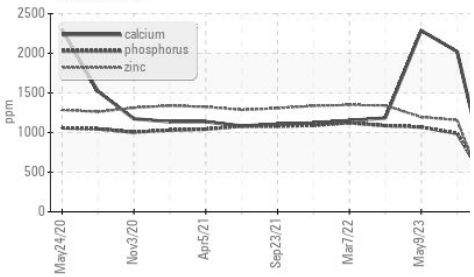
Additives



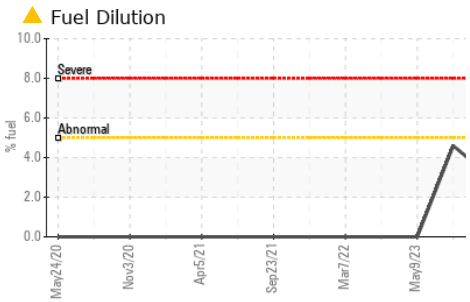
Fuel Dilution



Additives



Fuel Dilution



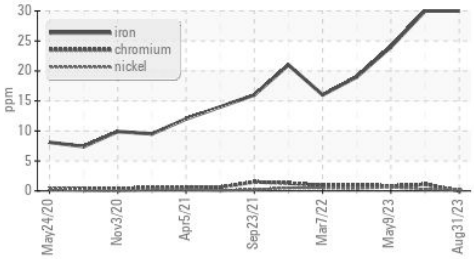
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	▲ **40.2**	19.0	21.2
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	⬢ **2.11**	---	5.08

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	---	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	NORML
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

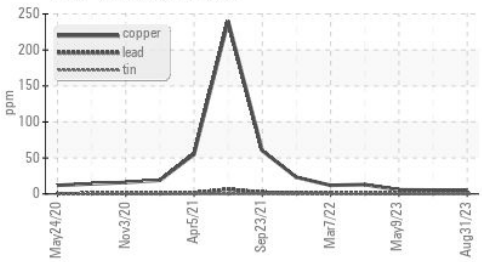
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	118.2	▲ **33.4**	93.4	105
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	▲ **6.6**	12.9	13.9
Viscosity Index (VI)	Scale	ASTM D2270*	139	**157**	135	133

GRAPHS

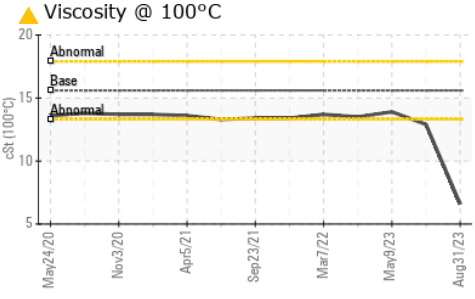
Ferrous Alloys



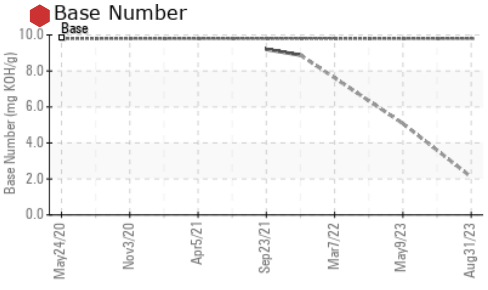
Non-ferrous Metals



Viscosity @ 100°C



Base Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0062042 **Received** : 15 Sep 2023
Lab Number : 02582792 **Diagnosed** : 18 Sep 2023
Unique Number : 5643857 **Diagnostician** : Bill Quesnel
Test Package : IND 2 (Additional Tests: FuelDilution, KV40, PercentFuel, 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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