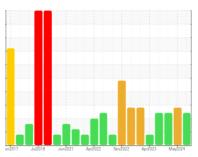


OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id
4783
Component
Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- LTR)

DIAGNOSIS

▲ Recommendation

We advise that you check the fuel injection system. 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.

Contamination

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

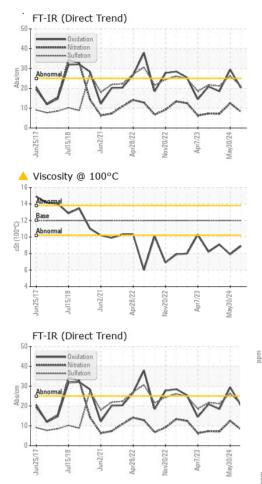
▲ Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

_TR)		un2017 Ji	12018 Jun2021 A	orŽ022 NovŽ022 AprŽ023	May2024	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0119035	GFL0118965	GFL0085928
Sample Date		Client Info		28 Jun 2024	30 May 2024	14 Aug 2023
Machine Age	hrs	Client Info		4971	4851	4281
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	SEVERE	SEVERE
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	.S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	16	69	10
Chromium	ppm	ASTM D5185(m)	>20	2	11	<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	<1
Aluminum	ppm	ASTM D5185(m)	>20	<1	2	<1
Lead	ppm	ASTM D5185(m)	>40	<1	5	<1
Copper	ppm	ASTM D5185(m)	>330	<1	2	<1
Tin	ppm	ASTM D5185(m)	>15	0	<1	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)	2	1	2	2
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	50	45	47	51
Manganese	ppm	ASTM D5185(m)	0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	950	746	709	830
Calcium	ppm	ASTM D5185(m)	1050	830	780	894
Phosphorus	ppm	ASTM D5185(m)	995	808	755	920
Zinc	ppm	ASTM D5185(m)	1180	947	869	1016
Sulfur	ppm	ASTM D5185(m)	2600	2038	1747	2253
Lithium	ppm	ASTM D5185(m)		<1	<1	<1
CONTAMINAN	ITS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	3	8	5
Sodium	ppm	ASTM D5185(m)		10	50	23
Potassium	ppm	ASTM D5185(m)	>20	1	4	1
Fuel	%	ASTM D7593*	>5	12.2	▲ 20.6	4 9.8
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	0.3	1.2	0.2
Nitration	Abs/cm	ASTM D7624*	>20	8.2	12.5	7.1
Sulfation	Abs/.1mm	ASTM D7415*	>30	21.0	26.3	21.2



OIL ANALYSIS REPORT



White Metal scalar Visual* NONE NONE NONE NONE Precipitate scalar Visual* NONE NONE NONE NONE Precipitate scalar Visual* NONE NONE NONE NONE Precipitate scalar Visual* NONE NONE NONE NONE NONE NONE NONE Scalar Visual* NONE NONE NONE NONE NONE Scalar Visual* NONE NONE NONE NONE NONE NONE Scalar Visual* NONE NONE NONE NONE NONE NONE NONE NON	FLUID DEGRA	NOITAG	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 NONE Silt scalar Visual* NONE NONE NONE NONE Debris scalar Visual* NONE NONE NONE NONE Debris scalar Visual* NONE NONE NONE NONE Debris scalar Visual* NONE NONE NONE NONE NONE Debris scalar Visual* NORM NORM NORM NORM NORM NORM NORM NORM	Oxidation	Abs/.1mm	ASTM D7414*	>25	20.3	29.5	18.5
Cellow Metal scalar Visual* NONE NONE NONE Precipitate scalar Visual* NONE NONE NONE District scalar Visual* NONE NONE NONE Sand/Dirt scalar Visual* NONE NONE NONE NONE Debris scalar Visual* NONE NONE NONE NONE Sand/Dirt scalar Visual* NONE NONE NONE NONE Debris scalar Visual* NONE NONE NONE NONE Sand/Dirt scalar Visual* NORML NOR	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar Visual* NONE NONE NONE Sitt scalar Visual* NONE NONE VLITE Debris scalar Visual* NONE NONE NONE NONE Scalar Visual* NONE NONE NONE NONE Spearance scalar Visual* NORML NO	Vhite Metal	scalar	Visual*	NONE	NONE	NONE	
Scalar Visual* NONE NONE NONE NONE NONE NONE Scalar Visual* NONE NONE NONE NONE NONE NONE NONE NON	'ellow Metal	scalar	Visual*	NONE	NONE	NONE	
Debris scalar Visual* NONE NONE NONE NONE NONE NONE NONE NON	recipitate	scalar	Visual*	NONE	NONE	NONE	
And/Dirt scalar Visual* NONE NONE NORML NO	ilt	scalar	Visual*	NONE	NONE	VLITE	
popearance scalar Visual* NORML NORM	Pebris	scalar	Visual*	NONE	NONE	NONE	
dor scalar Visual* NORML NORML NEG	and/Dirt	scalar	Visual*	NONE	NONE	NONE	
mulsified Water scalar Visual* >0.2 NEG NEG NEG NEG ree Water scalar Visual* >0.2 NEG	ppearance	scalar	Visual*	NORML	NORML	NORML	
FLUID PROPERTIES method limit/base current history1 history fisc @ 100°C cSt ASTM D7279(m) 12.00 A 8.9 A 7.9 A 9.1 GRAPHS Iron (ppm) Lead (ppm) Severe Abnormal	Odor	scalar	Visual*	NORML	NORML	NORML	NORML
FLUID PROPERTIES method limit/base current history1 history fisc @ 100°C cSt ASTM D7279(m) 12.00 8.9 7.9 9.1 GRAPHS Iron (ppm) Lead (ppm) Severe Abnormal Aluminum (ppm) Chromium (ppm) Chromium (ppm) Severe Abnormal Abnormal Abnormal Copper (ppm) Severe Abnormal Abnormal Abnormal Abnormal Copper (ppm) Severe Abnormal Abnormal Abnormal Abnormal Abnormal Abnormal Fuel Dilution Fuel Dilution	mulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Section 100°C CSt ASTM D7279(m) 12.00 A 8.9 A 7.9 A 9.1	ree Water	scalar	Visual*		NEG	NEG	NEG
GRAPHS Iron (ppm) Lead (ppm) Abnormal Abnormal Abnormal Abnormal Abnormal Chromium (ppm) Chromium (ppm) Serve Abnormal Abnormal Abnormal Abnormal Abnormal Abnormal Abnormal Chromium (ppm) Solution Chromium (ppm) Solution Chromium (ppm) Solution Solution Chromium (ppm) Solution Fuel Dilution Solution Fuel Dilution Solution Fuel Dilution	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Lead (ppm) Lea	/isc @ 100°C	cSt	ASTM D7279(m)	12.00	8.9	▲ 7.9	9.1
Severe Abnormal	GRAPHS						
Severe Solid Sol	Iron (ppm)			100			
Abnomal Abn	Severe				Course		
20	\wedge						
Aluminum (ppm) Chromium (ppm) Chro	Abnorma	~		E 4	Abnormal		
Aluminum (ppm) Chromium (ppm) Chromium (ppm) Severe Abnormal Aluminum (ppm) Severe April 2202/404 Apri	\sim			20	1		
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Abnormal	Aluminum (ppm)		_	2	Chromium (p	_	2
Abnormal	Severe				Smuoro.	TITITI	
Copper (ppm) Silicon (ppm) Silicon (ppm) Severe Shoromal Silicon (ppm) Severe Shoromal Silicon (ppm) Severe Shoromal Silicon (ppm) Severe Shoromal Shoromal Severe Shoromal Severe Shoromal Severe Shoromal Severe Shoromal	- On the state of				17		
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Copper (ppm) Silicon (ppm) Severe Abnormal Viscosity @ 100°C Fuel Dilution Savere Abnormal Savere Savere Abnormal Savere Abnormal Savere Abnormal Savere Abnormal Savere Abnormal Savere Abnormal	×	2-	3 2			2 2 2	\sim
Copper (ppm) Silicon (ppm) Severe Abnormal Viscosity @ 100°C Fuel Dilution Silicon (ppm) Severe Abnormal	m25/1 ul15/1 Jun2/2	pr28/2	ov20/2	ay30/2	m25/1	Jun2/2 pr28/2 ov20/2	Apr7/23 May30/24
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Viscosity @ 100°C Abnormal Base Base Bhornmal				80			
April Severe Apr)		
Viscosity @ 100°C Abnormal Base Abnormal Abnormal Abnormal Abnormal Abnormal Abnormal Abnormal Abnormal Abnormal				E 40			
Viscosity @ 100°C April 15/18 25/10/22	\			20		\wedge	\wedge
Viscosity @ 100°C Abnormal Base Abnormal Severe Shormal		2	3 2		D	2 2 2	3
Viscosity @ 100°C Abnormal Base Abnormal Severe Shormal	n25/1	0128/2	v20/2 \pr7/2	ry30/2	m25/1	lun2/2 nr28/2. v20/2'	Apr7/23 May30/24
Abnomal 25.0 20.0 20.0 215.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 2	,		N A	Ma	-	J. Ap. No.	Mar
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CALA ISO 17025:2017 Accredited Laboratory

Laboratory

Sample No. : GFL0119035 Lab Number : 02646627 Unique Number : 5812179

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 554 - Edmonton SW Received : 09 Jul 2024 **Tested** : 10 Jul 2024

Diagnosed : 10 Jul 2024 - Wes Davis Test Package : MOB 1 (Additional Tests: PercentFuel, Visual)

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.

8409 -15th Street NW Edmonton, AB **CA T6P 0B8** Contact: Tim Greig tgreig@gflenv.com T: (780)231-0521