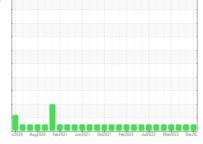


## **OIL ANALYSIS REPORT**

#### Sample Rating Trend







SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0073346	GFL0073280	GFL007330
Sample Date		Client Info		22 Dec 2023	04 Oct 2023	07 Aug 202
Machine Age	hrs	Client Info		600	600	600
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	<b>FION</b>	method	limit/base	current	history1	history
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history
Iron	ppm	ASTM D5185m	>100	8	7	4
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	2	0
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	0	1	0
Tin	ppm	ASTM D5185m	>15	1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history
Boron	ppm	ASTM D5185m	0	12	10	25
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	82	88	76
Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Magnesium	ppm	ASTM D5185m	1010	835	912	864
Calcium	ppm	ASTM D5185m	1070	992	1105	1081
Phosphorus				<u>992</u>	1105	1001
	ppm	ASTM D5185m	1150	939 939	990	940
Zinc	ppm ppm	ASTM D5185m ASTM D5185m	1150 1270			
Zinc Sulfur				939	990	940
	ppm ppm	ASTM D5185m	1270	939 1174	990 1237	940 1150 3577
Sulfur CONTAMINAN Silicon	ppm ppm	ASTM D5185m ASTM D5185m method ASTM D5185m	1270 2060 limit/base	939 1174 2773	990 1237 3060	940 1150 3577 history: 3
Sulfur CONTAMINAN Silicon Sodium	ppm ppm NTS	ASTM D5185m ASTM D5185m method	1270 2060 limit/base	939 1174 2773 current	990 1237 3060 history1 4 7	940 1150 3577 history: 3 2
Sulfur CONTAMINAN Silicon	ppm ppm NTS ppm	ASTM D5185m ASTM D5185m method ASTM D5185m	1270 2060 limit/base >25	939 1174 2773 current 3	990 1237 3060 history1 4	940 1150 3577 history: 3
Sulfur CONTAMINAN Silicon Sodium	ppm ppm NTS ppm ppm	ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	1270 2060 limit/base >25	939 1174 2773 current 3 3	990 1237 3060 history1 4 7	940 1150 3577 history: 3 2 2 2
Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm NTS ppm ppm	ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m ASTM D5185m	1270 2060 limit/base >25 >20 limit/base	939 1174 2773 current 3 3 4	990 1237 3060 <u>history1</u> 4 7 3	940 1150 3577 history: 3 2 2 2
Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm NTS ppm ppm ppm	ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m Method	1270 2060 limit/base >25 >20 limit/base >3	939 1174 2773 current 3 3 4 current	990 1237 3060 history1 4 7 3 3 history1	940 1150 3577 history 3 2 2 history
Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm VTS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844	1270 2060 limit/base >25 >20 limit/base >3	939 1174 2773 current 3 3 4 current 1.1	990 1237 3060 history1 4 7 3 history1 0.7	940 1150 3577 history2 3 2 2 history2 0.4
Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm VTS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624	1270 2060 imit/base >25 >20 imit/base >20	939 1174 2773 current 3 3 4 current 1.1 8.9	990 1237 3060 history1 4 7 3 history1 0.7 8.0	940 1150 3577 history 3 2 2 history 0.4 6.1 16.9
Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm VTS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624	1270 2060 limit/base >25 >20 limit/base >3 >20 >30	939 1174 2773 current 3 3 4 current 1.1 8.9 19.7	990 1237 3060 history1 4 7 3 history1 0.7 8.0 18.9	940 1150 3577 history2 3 2 2 history2 0.4 6.1

## Machine Id 910001

Component Diesel Engine

## PETRO CANADA DURON SHP 15W40 (12 GAL)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

Metal levels are typical for a new component breaking in.

#### Contamination

There is no indication of any contamination in the oil.

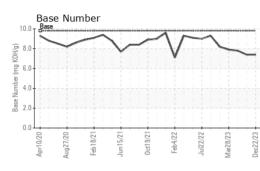
#### Fluid Condition

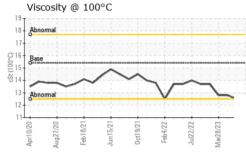
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



# **OIL ANALYSIS REPORT**

Ferrous Alloys





VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.7	12.5	12.8
GRAPHS						

50 40 30 20 10 0 ug27/20 Jun15/21 Dec22/23 Apr10/20 Feb18/21 CC1244 lar28/23 Non-ferrous Metals 10 ead bpm Dec22/23 ch4/7 ug27 Feb1 1 April Viscosity @ 100°C Base Number 19 10.0 18 17 8 (mg KOH/g) ()-16 ()-00 () 15 () 14 Ba 6 ( umber 4 ( Base 13 Abnorma 12 11-0.0 Dec22/23 -Apr10/20 -Jun15/21 0ct19/21 Feb4/22 Aug27/20 0ct19/21 Feb4/22 Dec22/23 Apr10/20 Aug27/20 Feb18/21 Mar28/23 Feb18/21 Mar28/23 Jun15/21 GFL Environmental - 102 - Morristown TN Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : GFL0073346 Recieved : 28 Dec 2023 415 Ryder Lane, PO Box 1894 Lab Number : 06046803 Diagnosed : 28 Dec 2023 Morristown, TN Unique Number : 10807411 Diagnostician : Wes Davis US 37813 Test Package : FLEET Contact: Ricky Dunlap ricky.dunlap@gflenv.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

T: (800)207-6618

F: