

## **OIL ANALYSIS REPORT**

Sample Rating Trend





DIAGNOSIS

913024 Component Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (--- GAL)

I SHP 15W40 (--- GAL) SAMPLE INFORMATION method limit/base current his



## Recommendation No corrective action is recommended at this time. Resample at the next service interval to monitor. Wear An increase in the iron level is noted. Contamination

There is no indication of any contamination in the oil.

Machine Id

## Fluid Condition

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

Sample Number		Client Info		GFL0111456	GFL0068906	GFL0068871
Sample Date		Client Info		29 Mar 2024	01 Mar 2024	08 Feb 2024
Machine Age	hrs	Client Info		4793	4644	4520
Oil Age	hrs	Client Info		149	563	439
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				ATTENTION	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S .	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	<b>e</b> 108	12	8
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	4	3
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	1	1
Lead	ppm	ASTM D5185m	>40	17	0	0
Copper	ppm	ASTM D5185m	>330	29	<1	<1
Tin	ppm	ASTM D5185m	>15	3	<1	<1
Antimony	ppm	ASTM D5185m		0		
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	2	2	5
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	<1	60	59
Manganese	ppm	ASTM D5185m	0	2	<1	<1
Magnesium						
magnoolam	ppm	ASTM D5185m	1010	83	960	929
Calcium	ppm ppm	ASTM D5185m ASTM D5185m	1010 1070	83 3375	960 1072	929 1021
Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150	83 3375 985	960 1072 974	929 1021 1042
Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270	83 3375 985 1153	960 1072 974 1162	929 1021 1042 1216
Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060	83 3375 985 1153 3135	960 1072 974 1162 2905	929 1021 1042 1216 2842
Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1010 1070 1150 1270 2060 limit/base	83 3375 985 1153 3135 current	960 1072 974 1162 2905 history1	929 1021 1042 1216 2842 history2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25	83 3375 985 1153 3135 current 4	960 1072 974 1162 2905 history1 3	929 1021 1042 1216 2842 history2 4
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25	83 3375 985 1153 3135 current 4 6	960 1072 974 1162 2905 history1 3 3 3	929 1021 1042 1216 2842 history2 4 22
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 2060 <i>limit/base</i> >25 >20	83 3375 985 1153 3135 current 4 6 1	960 1072 974 1162 2905 history1 3 3 <	929 1021 1042 1216 2842 history2 4 22 2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 2060 limit/base >25 >20 limit/base	83 3375 985 1153 3135 current 4 6 1 2 current	960 1072 974 1162 2905 history1 3 3 <1 history1	929 1021 1042 1216 2842 history2 4 22 2 history2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844	1010 1070 1150 2060 imit/base >25 >20 imit/base >4	83 3375 985 1153 3135 current 4 6 1 1 current 0.3	960 1072 974 1162 2905 history1 3 3 <1 history1 0.6	929 1021 1042 1216 2842 history2 4 22 2 history2 0.5
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7824	1010 1070 1150 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	83 3375 985 1153 3135 current 4 6 1 1 current 0.3 6.8	960 1072 974 1162 2905 <u>history1</u> 3 3 3 <1 <u>history1</u> 0.6 9.0	929 1021 1042 1216 2842 <u>history2</u> 4 22 2 <u>history2</u> 0.5 8.1
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624	1010 1070 1150 2060 <b>limit/base</b> >25 >20 <b>limit/base</b> >4 >20 >30	83 3375 985 1153 3135 <u>current</u> 4 6 1 1 <u>current</u> 0.3 6.8 18.6	960 1072 974 1162 2905 history1 3 3 3 <1 history1 0.6 9.0 20.4	929 1021 1042 1216 2842 history2 4 22 2 history2 0.5 8.1 19.6
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm TS ppm ppm ppm ppm ppm % Abs/cm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7844	1010 1070 1150 1270 2060 <b>imit/base</b> >25 >20 <b>imit/base</b> >4 >20 >30 <b>imit/base</b>	83 3375 985 1153 3135 current 4 6 1 current 0.3 6.8 18.6 current	960 1072 974 1162 2905 history1 3 3 <1 3 <1 history1 0.6 9.0 20.4 history1	929 1021 1042 1216 2842 history2 4 22 2 history2 0.5 8.1 19.6 history2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm TS ppm ppm ppm ppm ppm % Abs/cm Abs/.1mm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D7415	1010 1070 1150 2060 <b>imit/base</b> >20 <b>imit/base</b> >20 >30 <b>imit/base</b> >25	83 3375 985 1153 3135 current 4 6 1 1 current 0.3 6.8 18.6 current 14.8	960 1072 974 1162 2905 history1 3 3 <1 0.6 9.0 20.4 history1 16.3	929 1021 1042 1216 2842 4 22 2 history2 0.5 8.1 19.6 history2 15.4
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation Base Number (BN)	ppm ppm ppm ppm TS ppm ppm ppm ppm ppm % Abs/cm Abs/.1mm gKOH/g	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7415 method ASTM D7414 ASTM D2896	1010 1070 1150 2060 <b>limit/base</b> >20 <b>limit/base</b> >4 >20 >30 <b>limit/base</b> >25 9.8	83 3375 985 1153 3135 <b>current</b> 4 6 1 1 <b>current</b> 0.3 6.8 18.6 <b>current</b> 14.8 7.8	960 1072 974 1162 2905 history1 3 3 3 <1 history1 0.6 9.0 20.4 history1 16.3 7.0	929 1021 1042 1216 2842 <b>history2</b> 4 22 2 <b>history2</b> 0.5 8.1 19.6 <b>history2</b> 15.4 7.5

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Submitted By: JOSH MALONEY



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## **OIL ANALYSIS REPORT**









1001 IL						
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
		and the set	line it de le le le		Internet and	Is to to use O
FLUID PROPE	RHES	method	limit/base	current	history i	nistory2
Visc @ 100°C	cSt	ASTM D445	15.4	13.4	13.4	13.4

GRAPHS



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Dec5/23. Feb8/24. Nov14/22 Aug17/23 Sep27/23 Sep27/23 Feb6/23 Mar30/23 Jun 19/23 Nov14/22 Feb6/23 Mar30/73 Aug17/23 Mav10/23 Mav10/23 Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 073 - Warner Robins - Transwaste Sample No. : GFL0111456 Received 155 Story Road : 02 Apr 2024 Lab Number : 06136031 Tested Warner Robins, GA : 02 Apr 2024 Unique Number : 10955496 Diagnosed : 04 Apr 2024 - Don Baldridge US 31093 Test Package : FLEET Contact: JOSH MALONEY Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jmaloney@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F:

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

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