

OIL ANALYSIS REPORT

FUEL

Machine Id 227068-9

Component Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (12 GAL)

DIAGNOSIS

A Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring.

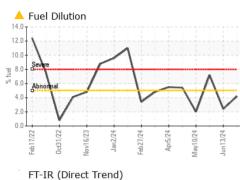
Fluid Condition

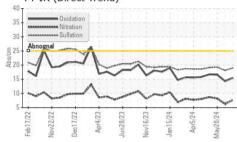
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.

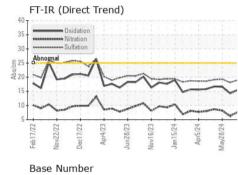
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0125841	GFL0125857	GFL0118694
Sample Date		Client Info		02 Jul 2024	13 Jun 2024	28 May 2024
Machine Age	hrs	Client Info		20512	20293	20293
Oil Age	hrs	Client Info		252	150	400
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ABNORMAL	MARGINAL	ABNORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
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	>80	10	6	17
Chromium	ppm	ASTM D5185m	>5	<1	<1	2
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>30	2	<1	2
Lead	ppm	ASTM D5185m	>30	<1	<1	<1
Copper	ppm	ASTM D5185m	>150	2	<1	2
Tin	ppm	ASTM D5185m	>5	0	0	<1
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	0	0	0
Barium	ppm	ASTM D5185m	0	0	0	<1
Molybdenum	1-1-		60	61	60	01
	mag	ASTM D5185m		01	60	61
	ppm ppm	ASTM D5185m ASTM D5185m		<1		61 <1
Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	0 1010	<1 944	<1 1049	<1 952
Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070	<1 944 1059	<1 1049 1164	<1 952 1062
Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150	<1 944 1059 1157	<1 1049 1164 1140	<1 952 1062 1046
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070	<1 944 1059	<1 1049 1164	<1 952 1062
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270	<1 944 1059 1157 1273	<1 1049 1164 1140 1399	<1 952 1062 1046 1205
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 1010 1070 1150 1270 2060	<1 944 1059 1157 1273 3802	<1 1049 1164 1140 1399 3969	<1 952 1062 1046 1205 3121
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 1010 1070 1150 1270 2060 limit/base	<1 944 1059 1157 1273 3802 current	<1 1049 1164 1140 1399 3969 history1	<1 952 1062 1046 1205 3121 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base	<1 944 1059 1157 1273 3802 current 5	<1 1049 1164 1140 1399 3969 history1 4	<1 952 1062 1046 1205 3121 history2 14
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >20	<1 944 1059 1157 1273 3802 <u>current</u> 5 2	<1 1049 1164 1140 1399 3969 history1 4 2	<1 952 1062 1046 1205 3121 history2 14 3
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >20	<1 944 1059 1157 1273 3802 <u>current</u> 5 2 2 <1	<1 1049 1164 1140 1399 3969 history1 4 2 2	<1 952 1062 1046 1205 3121 history2 14 3 2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >20 >20 >5	<1 944 1059 1157 1273 3802 <u>current</u> 5 2 <1 ▲ 4.2 <u>current</u>	<1 1049 1164 1140 1399 3969 history1 4 2 2 2 ▲ 2.4	<1 952 1062 1046 1205 3121 history2 14 3 2 2 * 7.2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >20 >20 >5 limit/base >3	<1 944 1059 1157 1273 3802 current 5 2 <1 ▲ 4.2 current 0.2	<1 1049 1164 1140 1399 3969 history1 4 2 2 2 ▲ 2.4 history1 0.1	<1 952 1062 1046 1205 3121 history2 14 3 2 ▲ 7.2 history2 0.3
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >20 >20 >5 limit/base	<1 944 1059 1157 1273 3802 <u>current</u> 5 2 <1 ▲ 4.2 <u>current</u>	<1 1049 1164 1140 1399 3969 history1 4 2 2 2 ▲ 2.4 history1	<1 952 1062 1046 1205 3121 history2 14 3 2 ▲ 7.2 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D3524 method *ASTM D7844	0 1010 1070 1150 1270 2060 limit/base >20 >20 >5 limit/base >3 >20	<1 944 1059 1157 1273 3802 current 5 2 <1 4.2 current 0.2 7.7	<1 1049 1164 1140 1399 3969 history1 4 2 2 2 ▲ 2.4 history1 0.1 6.3	<1 952 1062 1046 1205 3121 history2 14 3 2 ▲ 7.2 history2 0.3 8.2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 *ASTM D7844 *ASTM D7824	0 1010 1070 1150 1270 2060 limit/base >20 >20 >5 limit/base >3 >20 >3 >20	<1 944 1059 1157 1273 3802 current 5 2 <1 ▲ 4.2 current 0.2 7.7 19.0	<1 1049 1164 1140 1399 3969 history1 4 2 2 2 ▲ 2.4 history1 0.1 6.3 18.1	<1 952 1062 1046 1205 3121 history2 14 3 2 14 3 2 7.2 history2 0.3 8.2 19.3

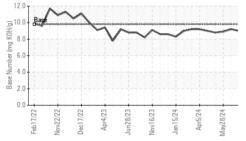


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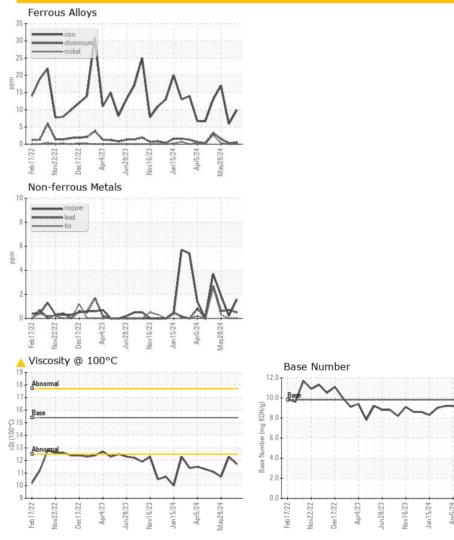








VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	11.7	12.3	1 0.7
GRAPHS						



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 166 - Phenix City Sample No. : GFL0125841 Received : 09 Jul 2024 18 Old Brickyard Rd Lab Number : 06231191 Tested : 11 Jul 2024 Phenix City, AL Unique Number : 11114684 Diagnosed : 11 Jul 2024 - Wes Davis US 36869 Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel) Contact: DEAN PEACE JR Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. dean.peace@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Report Id: GFL166 [WUSCAR] 06231191 (Generated: 07/11/2024 09:30:27) Rev: 1

Submitted By: DEAN PEACE JR Page 2 of 2

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