

# **OIL ANALYSIS REPORT**

Sample Rating Trend



(ECE744) 12048 Component Diesel Engine Fluid

Area

## PETRO CANADA DURON SHP 15W40 (8 GAL)

SAMPLE INFORMATION method

DIAGNOSIS	

Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

#### 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.

		method	iimi/base	current	nistory i	nistoryz
Sample Number		Client Info		GFL0111531	GFL0111527	GFL0111575
Sample Date		Client Info		01 Jul 2024	13 Jun 2024	01 May 2024
Machine Age	mls	Client Info		0	0	0
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
-						
CONTAMINAT	ION	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 METAL	c	method	limit/base	current	history1	history2
	3					
Iron	ppm	ASTM D5185m	>120	41	38	24
Chromium	ppm		>20	2	2	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m		0	<1	0
Aluminum	ppm	ASTM D5185m		11	10	6
Lead	ppm	ASTM D5185m	>40	3	2	<1
Copper	ppm	ASTM D5185m	>330	3	2	2
Tin	ppm	ASTM D5185m	>15	1	1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 8	history1 4	history2 3
	ppm ppm		0			
Boron Barium		ASTM D5185m	0	8	4	3
Boron	ppm	ASTM D5185m ASTM D5185m	0 0 60	8 0	4 <1	3
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	8 0 60	4 <1 64	3 0 55
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	8 0 60 <1	4 <1 64 1	3 0 55 1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	8 0 60 <1 739	4 <1 64 1 795	3 0 55 1 753
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	8 0 60 <1 739 1386	4 <1 64 1 795 1340	3 0 55 1 753 1203
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	8 0 60 <1 739 1386 916	4 <1 64 1 795 1340 931	3 0 55 1 753 1203 866
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	8 0 60 <1 739 1386 916 1124	4 <1 64 1 795 1340 931 1143	3 0 55 1 753 1203 866 1066
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	8 0 60 <1 739 1386 916 1124 3005 current	4 <1 64 1 795 1340 931 1143 2491 history1	3 0 55 1 753 1203 866 1066 2889 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	8 0 60 <1 739 1386 916 1124 3005 current 11	4 <1 64 1 795 1340 931 1143 2491	3 0 55 1 753 1203 866 1066 2889
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 0 60 1010 1070 1150 1270 2060	8 0 60 <1 739 1386 916 1124 3005 current	4 <1 64 1 795 1340 931 1143 2491 history1 11	3 0 55 1 753 1203 866 1066 2889 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 <b>limit/base</b>	8 0 60 <1 739 1386 916 1124 3005 <u>current</u> 11 6	4 <1 64 1 795 1340 931 1143 2491 history1 11 4	3 0 55 1 753 1203 866 1066 2889 history2 6 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	8 0 60 <1 739 1386 916 1124 3005 current 11 6 11 current	4 <1 64 1 795 1340 931 1143 2491 history1 11 4 11 history1	3 0 55 1 753 1203 866 1066 2889 <b>history2</b> 6 4 8 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	8 0 60 <1 739 1386 916 1124 3005 <u>current</u> 11 6 11 6 11 .4	4 <1 64 1 795 1340 931 1143 2491 history1 11 4 11 history1 1.3	3 0 55 1 753 1203 866 1066 2889 history2 6 4 8 8 history2 1.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 >20 <b>imit/base</b> >4 >20	8 0 60 <1 739 1386 916 1124 3005 <i>current</i> 11 6 11 6 11 <i>current</i> 1.4 1.4	4 <1 64 1 795 1340 931 1143 2491 history1 11 4 11 history1 1.3 11.7	3 0 55 1 753 1203 866 1066 2889 history2 6 4 8 8 history2 1.1 1.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 >20 <b>imit/base</b> >4 >20	8 0 60 <1 739 1386 916 1124 3005 <u>current</u> 11 6 11 6 11 .4 1.4 12.6 25.5	4 <1 64 1 795 1340 931 1143 2491 history1 11 4 11 history1 1.3 11.7 24.5	3 0 55 1 753 1203 866 1066 2889 <b>history2</b> 6 4 8 <b>history2</b> 1.1 1.1 11.1 24.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 220 220 230 20 20 20 20 20 20 20 20 20 20 20 20 20	8 0 60 <1 739 1386 916 1124 3005 <i>current</i> 11 6 11 6 11 <i>current</i> 1.4 12.6 25.5 <i>current</i>	4 <1 64 1 795 1340 931 1143 2491 history1 11 4 11 4 11 history1 1.3 11.7 24.5 history1	3 0 55 1 753 1203 866 1066 2889 history2 6 4 8 history2 1.1 1.1 11.1 24.0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414	0 0 0 1010 1070 1150 1270 2060 imit/base >25 20 imit/base >4 >20 imit/base >30	8 0 60 <1 739 1386 916 1124 3005 <i>current</i> 11 6 11 <i>current</i> 1.4 12.6 25.5 <i>current</i> 20.8	4 <1 64 1 795 1340 931 1143 2491 history1 11 4 11 history1 1.3 11.7 24.5 history1 19.5	3 0 55 1 753 1203 866 1066 2889 history2 6 4 8 history2 1.1 11.1 24.0 history2 1.8 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 220 220 230 20 20 20 20 20 20 20 20 20 20 20 20 20	8 0 60 <1 739 1386 916 1124 3005 <i>current</i> 11 6 11 6 11 <i>current</i> 1.4 12.6 25.5 <i>current</i>	4 <1 64 1 795 1340 931 1143 2491 history1 11 4 11 4 11 history1 1.3 11.7 24.5 history1	3 0 55 1 753 1203 866 1066 2889 history2 6 4 8 history2 1.1 1.1 11.1 24.0 history2



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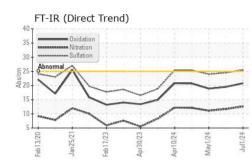
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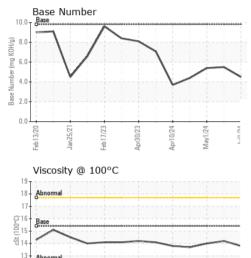
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# **OIL ANALYSIS REPORT**



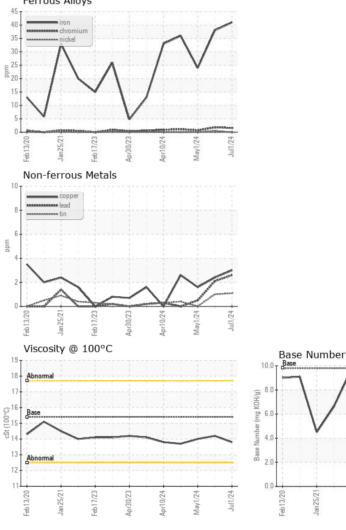


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	13.8	14.2	14.0
GRAPHS						







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 073 - Warner Robins - Transwaste Sample No. : GFL0111531 Received : 08 Jul 2024 155 Story Road Lab Number : 06229843 Tested : 09 Jul 2024 Warner Robins, GA Unique Number : 11113336 Diagnosed : 09 Jul 2024 - Wes Davis US 31093 Test Package : FLEET Contact: JOSH MALONEY Certificate 12367 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: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

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Submitted By: CURTIS JACOBS Page 2 of 2