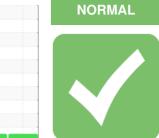


## **OIL ANALYSIS REPORT**

Sample Rating Trend



713065 Component Diesel Engine

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

SAMPLE INFORMATION meth

DIAGNOSIS
Recommendation

Resample at the next service interval to monitor.

Machine Id

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

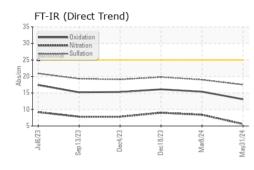
### Fluid Condition

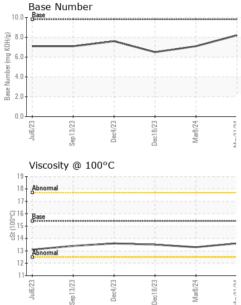
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR		method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0086971	GFL0086982	GFL0086930
Sample Date		Client Info		31 May 2024	08 Mar 2024	18 Dec 2023
Machine Age	hrs	Client Info		2500	2238	2238
Oil Age	hrs	Client Info		262	600	600
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
				Normize		
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	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	3	10	12
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	1
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	<1	<1	1
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	2	12
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 4	history1 2	history2 4
	ppm ppm					
Boron		ASTM D5185m	0	4	2	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	4 0	2 0	4 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 58	2 0 60	4 <1 65
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 58 0	2 0 60 <1	4 <1 65 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	4 0 58 0 906	2 0 60 <1 1010	4 <1 65 <1 1001
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	4 0 58 0 906 1090	2 0 60 <1 1010 1126	4 <1 65 <1 1001 1137
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	4 0 58 0 906 1090 1003	2 0 60 <1 1010 1126 1036	4 <1 65 <1 1001 1137 1131
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	4 0 58 0 906 1090 1003 1186	2 0 60 <1 1010 1126 1036 1276	4 <1 65 <1 1001 1137 1131 1329
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 0 1010 1070 1150 1270 2060	4 0 58 0 906 1090 1003 1186 3455	2 0 60 <1 1010 1126 1036 1276 3584	4 <1 65 <1 1001 1137 1131 1329 2942
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 0 1010 1070 1150 1270 2060	4 0 58 0 906 1090 1003 1186 3455 current	2 0 60 <1 1010 1126 1036 1276 3584 history1	4 <1 65 <1 1001 1137 1131 1329 2942 <b>history2</b>
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 <b>method</b>	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	4 0 58 0 906 1090 1003 1186 3455 current 0	2 0 60 <1 1010 1126 1036 1276 3584 history1 3	4 <1 65 <1 1001 1137 1131 1329 2942 history2 5
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 <b>method</b> ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	4 0 58 0 906 1090 1003 1186 3455 current 0 1	2 0 60 <1 1010 1126 1036 1276 3584 history1 3 2	4 <1 65 <1 1001 1137 1131 1329 2942 history2 5 5 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	4 0 58 0 906 1090 1003 1186 3455 current 0 1 0	2 0 60 <1 1010 1126 1036 1276 3584 history1 3 2 2 <1	4 <1 65 <1 1001 1137 1131 1329 2942 history2 5 5 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	4 0 58 0 906 1090 1003 1186 3455 <u>current</u> 0 1 0 0 2 0 2	2 0 60 <1 1010 1126 1036 1276 3584 history1 3 2 <1 4 history1	4 <1 65 <1 1001 1137 1131 1329 2942 bistory2 5 5 <1 history2
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 2060 225 >25 >20 imit/base >20	4 0 58 0 906 1090 1003 1186 3455 current 0 1 0 0 1 0	2 0 60 <1 1010 1126 1036 1276 3584 history1 3 2 <1 history1 0.4	4 <1 65 <1 1001 1137 1131 1329 2942 history2 5 5 <1 history2 0.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	4 0 58 0 906 1090 1003 1186 3455 <i>current</i> 0 1 0 0 1 0 <i>current</i> 0.2 5.6	2 0 60 <1 1010 1126 1036 1276 3584 history1 3 2 <1 2 <1 history1 0.4 8.4	4 <1 65 <1 1001 1137 1131 1329 2942 history2 5 5 <1 history2 0.5 9.0
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	4 0 58 0 906 1090 1003 1186 3455 <i>current</i> 0 1 0 0 <i>current</i> 0.2 5.6 17.5	2 0 60 <1 1010 1126 1036 1276 3584 history1 3 2 <1 3 2 <1 0.4 8.4 19.0 history1	4 <1 65 <1 1001 1137 1131 1329 2942 bistory2 5 5 <1 history2 0.5 9.0 19.8 bistory2
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 2060 2060 225 20 225 20 20 20 20 20 20 20 20 20 20 20 20 20	4 0 58 0 906 1090 1003 1186 3455 <u>current</u> 0 1 0 0 1 0 0 <u>current</u> 0.2 5.6 17.5	2 0 60 <1 1010 1126 1036 1276 3584 history1 3 2 <1 3 2 <1 0.4 8.4 19.0	4 <1 65 <1 1001 1137 1131 1329 2942 <b>bistory2</b> 5 5 <1 <b>bistory2</b> 0.5 9.0 19.8

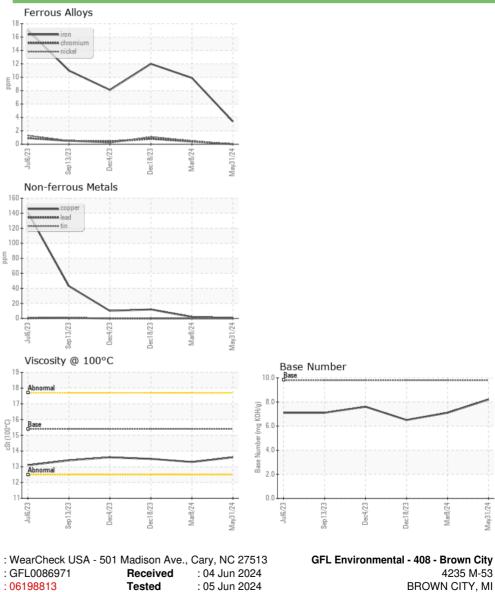


## **OIL ANALYSIS REPORT**





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	13.6	13.3	13.5
GRAPHS						



Lab Number : 06198813 Tested : 05 Jun 2024 Unique Number : 11060936 Diagnosed : 05 Jun 2024 - Wes Davis Test Package : FLEET Contact: WILLIAM DEOLA Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. bdeola@gflenv.com T: (810)238-2836 \* - 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)

Report Id: GFL408 [WUSCAR] 06198813 (Generated: 06/05/2024 04:37:45) Rev: 1

Laboratory

Sample No.

Submitted By: WILLIAM DEOLA

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