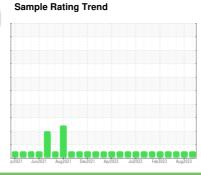


# **OIL ANALYSIS REPORT**

# {UNASSIGNED} 411025

Component **Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (10 GAL)





### DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

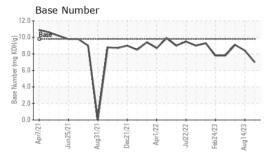
### **Fluid Condition**

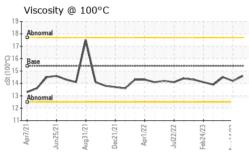
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MAT <u>ION</u>	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0080567	GFL0080587	GFL0066865
Sample Date		Client Info		23 Aug 2023	14 Aug 2023	04 Jul 2023
Machine Age	hrs	Client Info		1328	1328	1328
Oil Age	hrs	Client Info		1328	1328	1328
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	22	7	7
Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	9	6	3
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	0	2
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
• • •	10 10 100	ACTM DE10Em		^	0	0
Cadmium	ppm	ASTM D5185m		0	0	U
ADDITIVES	ррпп	method	limit/base	current	0 history1	history2
	ppm		limit/base			
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 2	history1	history2
ADDITIVES Boron Barium	ppm	method ASTM D5185m ASTM D5185m	0	current 2 0	history1 5 0	history2 2 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 2 0 65	history1 5 0 60	history2 2 0 62
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m	0 0 60 0	current 2 0 65 <1	history1  5  0  60  <1	history2 2 0 62 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method  ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 2 0 65 <1 1012	history1  5  0 60 <1 974	history2 2 0 62 <1 988
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc	ppm ppm ppm ppm ppm	method  ASTM D5185m	0 0 60 0 1010 1070	current 2 0 65 <1 1012 1145	history1  5  0  60  <1  974  1113	history2  2  0 62 <1 988 1084 1078 1319
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus	ppm ppm ppm ppm ppm ppm	method  ASTM D5185m	0 0 60 0 1010 1070 1150	current 2 0 65 <1 1012 1145 1063	history1  5  0 60 <1 974 1113 1058	history2  2  0 62 <1 988 1084 1078
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 2 0 65 <1 1012 1145 1063 1344	history1  5  0 60 <1 974 1113 1058 1300 3793 history1	history2  2  0 62 <1 988 1084 1078 1319 3851 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 2 0 65 <1 1012 1145 1063 1344 3620	history1  5  0  60  <1  974  1113  1058  1300  3793  history1  2	history2 2 0 62 <1 988 1084 1078 1319 3851
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current  2  0  65  <1  1012  1145  1063  1344  3620  current	history1  5 0 60 <1 974 1113 1058 1300 3793 history1 2 3	history2  2  0 62 <1 988 1084 1078 1319 3851 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current  2  0  65  <1  1012  1145  1063  1344  3620  current  4	history1  5  0  60  <1  974  1113  1058  1300  3793  history1  2	history2  2  0 62 <1 988 1084 1078 1319 3851 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current 2 0 65 <1 1012 1145 1063 1344 3620 current 4 5	history1  5 0 60 <1 974 1113 1058 1300 3793 history1 2 3	history2  2  0 62 <1 988 1084 1078 1319 3851 history2 2 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current  2  0  65  <1  1012  1145  1063  1344  3620  current  4  5  20	history1  5  0 60 <1 974 1113 1058 1300 3793 history1 2 3 12	history2  2  0 62 <1 988 1084 1078 1319 3851 history2 2 3 9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current  2  0 65 <1 1012 1145 1063 1344 3620  current  4 5 20  current	history1  5  0 60 <1 974 1113 1058 1300 3793 history1 2 3 12 history1	history2  2  0 62 <1 988 1084 1078 1319 3851 history2 2 3 9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m  method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current 2 0 65 <1 1012 1145 1063 1344 3620 current 4 5 20 current 1.2	history1  5  0 60 <1 974 1113 1058 1300 3793 history1 2 3 12 history1 0.6	history2  2  0 62 <1 988 1084 1078 1319 3851 history2 2 3 9 history2 0.6
ADDITIVES 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	method  ASTM D5185m  method  ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current  2  0  65  <1  1012  1145  1063  1344  3620  current  4  5  20  current  1.2  10.8	history1  5  0 60 <1 974 1113 1058 1300 3793 history1 2 3 12 history1 0.6 7.3	history2 2 0 62 <1 988 1084 1078 1319 3851 history2 2 3 9 history2 0.6 8.0
ADDITIVES 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	method  ASTM D5185m  method  *ASTM D5185m ASTM D7844  *ASTM D7624  *ASTM D7415	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30	current  2  0  65  <1  1012  1145  1063  1344  3620  current  4  5  20  current  1.2  10.8  23.2	history1  5  0 60 <1 974 1113 1058 1300 3793 history1 2 3 12 history1 0.6 7.3 18.7	history2  2  0 62 <1 988 1084 1078 1319 3851 history2  2  3 9 history2 0.6 8.0 20.3



## **OIL ANALYSIS REPORT**

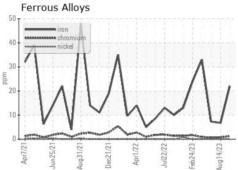


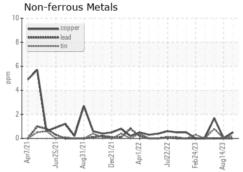


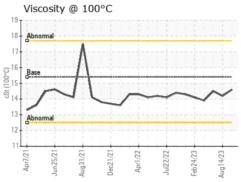
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

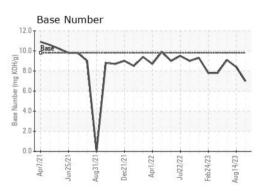
FLUID PROPERTIES		method				history2	
Visc @ 100°C	cSt	ASTM D445	15.4	14.6	14.2	14.5	

### **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number Test Package : FLEET

Unique Number : 10619330

: GFL0080567 : 05934059

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 24 Aug 2023 Diagnosed : 25 Aug 2023 Diagnostician : Wes Davis

GFL Environmental - 018 - Fayetteville

4621 Marracco Drive Hope Mills, NC US 28348

Contact: Robert Carter robert.carter@gflenv.com T: (910)596-1170

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)