

## **OIL ANALYSIS REPORT**

Sample Rating Trend





Machine Id 913054 Component

Fluid

Diesel Engine

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

### 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.

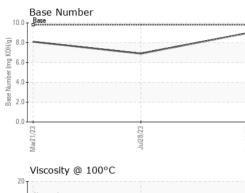
### Fluid Condition

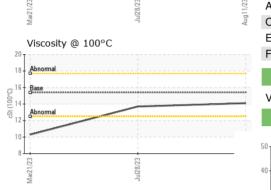
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0089487	GFL0089474	GFL0071466
Sample Date		Client Info		11 Aug 2023	28 Jul 2023	21 Mar 2023
Machine Age	hrs	Client Info		1253	1074	512
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	0.4
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	7	23	49
Chromium	ppm	ASTM D5185m		<1	<1	2
Nickel	ppm	ASTM D5185m	>5	<1	5	15
Titanium	ppm	ASTM D5185m		0	0	<1
Silver		ASTM D5185m	>2	۰ <1	<1	<1
Aluminum	ppm	ASTM D5185m		0	2	6
Lead	ppm	ASTM D5185m	>20	0 <1	2	0
	ppm					
Copper	ppm	ASTM D5185m		41	163	242
Tin	ppm	ASTM D5185m	>15	1	2	5
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES			limit/base			history2
ADDITIVE5		method	iimii/base	current	history1	nistory2
Boron	ppm	ASTM D5185m	0	4	9	238
	ppm ppm		0			
Boron		ASTM D5185m	0	4	9	238
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	4 0	9 0	238 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 61	9 0 63	238 0 112
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 61 1	9 0 63 1	238 0 112 4
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 61 1 1024	9 0 63 1 1040	238 0 112 4 734
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 61 1 1024 1131	9 0 63 1 1040 1138	238 0 112 4 734 1511
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 61 1 1024 1131 1080	9 0 63 1 1040 1138 1001	238 0 112 4 734 1511 696
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 61 1 1024 1131 1080 1298	9 0 63 1 1040 1138 1001 1310	238 0 112 4 734 1511 696 869
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 61 1 1024 1131 1080 1298 3673	9 0 63 1 1040 1138 1001 1310 3067	238 0 112 4 734 1511 696 869 2697
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	4 0 61 1 1024 1131 1080 1298 3673 current	9 0 63 1 1040 1138 1001 1310 3067 history1	238 0 112 4 734 1511 696 869 2697 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	4 0 61 1 1024 1131 1080 1298 3673 <i>current</i> 4	9 0 63 1 1040 1138 1001 1310 3067 history1 6	238 0 112 4 734 1511 696 869 2697 history2 ▶ 59
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	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	4 0 61 1 1024 1131 1080 1298 3673 <u>current</u> 4 5	9 0 63 1 1040 1138 1001 1310 3067 history1 6 2	238 0 112 4 734 1511 696 869 2697 history2 \$59 2
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 61 1 1024 1131 1080 1298 3673 current 4 5 2	9 0 63 1 1040 1138 1001 1310 3067 history1 6 2 2 <1	238 0 112 4 734 1511 696 869 2697 <b>history2</b> ▲ 59 2 6
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >25 >20 <b>Imit/base</b> >20	4 0 61 1 1024 1131 1080 1298 3673 current 4 5 2 2	9 0 63 1 1040 1138 1001 1310 3067 history1 6 2 <1 4 history1	238 0 112 4 734 1511 696 869 2697 bistory2 59 2 6 6
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 >20	4 0 61 1 1024 1131 1080 1298 3673 <i>current</i> 4 5 2 2 <i>current</i> 0	9 0 63 1 1040 1138 1001 1310 3067 history1 6 2 <1 6 2 <1 history1 0.7	238 0 112 4 734 1511 696 869 2697 history2 59 2 59 2 6 bistory2 0.6
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 TS 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 61 1 1024 1131 1080 1298 3673 <i>current</i> 4 5 2 2 <i>current</i> 0 6.9	9 0 63 1 1040 1138 1001 1310 3067 history1 6 2 <1 6 2 <1 history1 0.7 9.0	238 0 112 4 734 1511 696 869 2697 history2 59 2697 history2 6 0.6 10.1
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 TS ppm ppm ppm ppm ppm ppm Abs/cm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 1imit/base >4 >20 >30 30	4 0 61 1 1024 1131 1080 1298 3673 <i>current</i> 4 5 2 <i>current</i> 0 6.9 22.0	9 0 63 1 1040 1138 1001 1310 3067 history1 6 2 <1 6 2 <1 history1 0.7 9.0 20.6 history1	238 0 112 4 734 1511 696 869 2697 bistory2 59 2697 bistory2 0.6 0.6 10.1 23.8
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 ppm ppm ppm ppm pp	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 /////////////////////////////////	4 0 61 1 1024 1131 1080 1298 3673 <u>current</u> 4 5 2 2 <u>current</u> 0 6.9 22.0	9 0 63 1 1040 1138 1001 1310 3067 history1 6 2 <1 6 2 <1 0.7 9.0 20.6	238 0 112 4 734 1511 696 869 2697 history2 ↓ 59 2 6 0.6 10.1 23.8 ↓



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		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	14.1	13.7	▲ 10.3
GRAPHS						
Ferrous Alloys						
iron						
40 - nickel						
30						
m dd						
20						
10						
10						
0	~	and a stand built of the stand built of the stand				
2	2					
ar21.	128/		g11/23			
Mar21/23	Jul28/23		Aug11/23			
Non-ferrous Meta	-		Aug11/2			
Non-ferrous Meta	-		Aug11/23			
Non-ferrous Meta	-		Aug11/2			
Non-ferrous Metal	-		Aug11/2			
Non-ferrous Metal	-		Aug11/2			
Non-ferrous Metal	-		Aug11/2			
Non-ferrous Metal	-		Aug11/2			
Non-ferrous Metal	-		Aug11/2			
Non-ferrous Metal	s					
Non-ferrous Metal	-					
Non-ferrous Metal	S		Aug11/23 Aug11/23	Raco Number		
Non-ferrous Metal	S		Aug11/23	Base Number		
Non-ferrous Metal	S		10.0	Base Number		
Non-ferrous Metal	S		10.0	Base Number		
Non-ferrous Metal	S		10.0	Base Number		
Non-ferrous Metal	S		10.0	Base Number		
Non-ferrous Metal	S		10.0	Base Number		
Non-ferrous Metal	S		Per (mg K0H(6) 6.0	Base		
Non-ferrous Metal	S		10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	Base		
Non-ferrous Metal	S CC082Inf		10.0 Para Mugalina 10.0 Para Munber 10.0 Para Munber 10.0	Base		
Non-ferrous Metal	S		10.0 (9)HOX Bul Jaquiny See 2.0	Base	eccasion	

VISUAI method limit/base current history1 history2



Test Package : FLEET Certificate L2367 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)

Diagnostician : Wes Davis

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