

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id 103M

Component Diesel Engine PETRO CANADA DURON SHP 15W40 (--- 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.

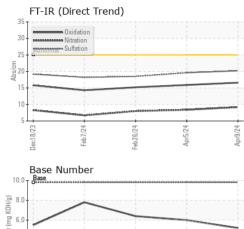
### Fluid Condition

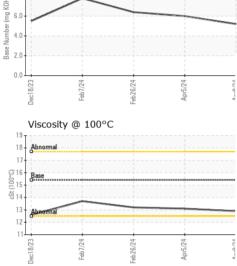
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		method	IIIIII/Dase	current	TIIStOLA	nistory2
Sample Number		Client Info		GFL0114326	GFL0114332	GFL0114390
Sample Date		Client Info		09 Apr 2024	05 Apr 2024	26 Feb 2024
Machine Age	hrs	Client Info		18063	18061	17891
Oil Age	hrs	Client Info		17794	17792	17891
Oil Changed		Client Info		Changed	Not Changd	Not Changd
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	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	8	7	6
Chromium	ppm	ASTM D5185m		0	<1	0
Nickel		ASTM D5185m	>5	۰ <1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm		>2		0	0
	ppm	ASTM D5185m		0	2	1
Aluminum	ppm	ASTM D5185m		_	_	
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m		1	<1	<1
Tin	ppm		>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		<1	<1	0
ADDITIVES		method	limit/base	current	history1	history2
Boron		ASTM D5185m	0	0	2	3
DOIOII	ppm	ASTIVI DUTOJITI	0	U	2	0
Barium	ppm ppm		0	0	0	0
Barium	ppm	ASTM D5185m	0 60	0	0	0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0 60	0 57	0 56	0 58
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	0 57 <1	0 56 <1	0 58 0
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	0 57 <1 940	0 56 <1 926	0 58 0 1110
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 57 <1 940 1075	0 56 <1 926 1094	0 58 0 1110 1216
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	0 57 <1 940 1075 995	0 56 <1 926 1094 1014	0 58 0 1110 1216 1068
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 60 0 1010 1070 1150 1270 2060	0 57 <1 940 1075 995 1228 3301	0 56 <1 926 1094 1014 1243 3403	0 58 0 1110 1216 1068 1475 3452
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 60 0 1010 1070 1150 1270 2060	0 57 <1 940 1075 995 1228 3301 current	0 56 <1 926 1094 1014 1243 3403 history1	0 58 0 1110 1216 1068 1475 3452 history2
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 60 0 1010 1070 1150 1270 2060	0 57 <1 940 1075 995 1228 3301 current 5	0 56 <1 926 1094 1014 1243 3403 <u>history1</u> 3	0 58 0 1110 1216 1068 1475 3452 history2 3
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 60 0 1010 1070 1150 1270 2060 Imit/base >25	0 57 <1 940 1075 995 1228 3301 <u>current</u> 5 3	0 56 <1 926 1094 1014 1243 3403 history1 3 3 3	0 58 0 1110 1216 1068 1475 3452 history2 3 2
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	0 57 <1 940 1075 995 1228 3301 current 5	0 56 <1 926 1094 1014 1243 3403 <u>history1</u> 3	0 58 0 1110 1216 1068 1475 3452 history2 3 2 2 <1
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 60 0 1010 1070 1150 1270 2060 Imit/base >25	0 57 <1 940 1075 995 1228 3301 <u>current</u> 5 3	0 56 <1 926 1094 1014 1243 3403 history1 3 3 3	0 58 0 1110 1216 1068 1475 3452 history2 3 2
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 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	0 57 <1 940 1075 995 1228 3301 <u>current</u> 5 3 3 <1	0 56 <1 926 1094 1014 1243 3403 <u>history1</u> 3 3 3 <1	0 58 0 1110 1216 1068 1475 3452 history2 3 2 2 <1
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 60 0 1010 1070 1150 1270 2060 imit/base >25 >20	0 57 <1 940 1075 995 1228 3301 <u>current</u> 5 3 <1 <u>current</u>	0 56 <1 926 1094 1014 1243 3403 history1 3 3 <1 history1	0 58 0 1110 1216 1068 1475 3452 history2 3 2 <1 history2
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 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i>	0 57 <1 940 1075 995 1228 3301 <u>current</u> 5 3 3 <1 <u>current</u> 0.1	0 56 <1 926 1094 1014 1243 3403 history1 3 3 3 3 <1 history1 0.1	0 58 0 1110 1216 1068 1475 3452 history2 3 2 <1 kistory2 0.1
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 60 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >20 imit/base >4 >20 >30	0 57 <1 940 1075 995 1228 3301 <u>current</u> 5 3 <1 <u>current</u> 0.1 9.2 20.2	0 56 <1 926 1094 1014 1243 3403 history1 3 3 3 <1 0.1 8.4 19.6	0 58 0 1110 1216 1068 1475 3452 history2 3 2 <1 kistory2 0.1 8.0 18.5
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 60 1010 1070 1150 1270 2060 <b>Imit/base</b> >25 -20 <b>Imit/base</b> >20 >30 	0 57 <1 940 1075 995 1228 3301 current 5 3 <1 5 3 <1 0.1 9.2 20.2 current	0 56 <1 926 1094 1014 1243 3403 history1 3 3 3 <1 0.1 8.4 19.6 history1	0 58 0 1110 1216 1068 1475 3452 history2 3 2 <1 history2 0.1 8.0 18.5 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 60 1010 1070 1150 1270 2060 <b>Imit/base</b> >25 20 <b>Imit/base</b> >4 >20 30 <b>Imit/base</b>	0 57 <1 940 1075 995 1228 3301 current 5 3 <1 5 3 <1 0.1 9.2 20.2 20.2 current 16.6	0 56 <1 926 1094 1014 1243 3403 history1 3 3 3 <1 0.1 8.4 19.6 history1 15.9	0 58 0 1110 1216 1068 1475 3452 history2 3 2 <1 history2 0.1 8.0 18.5 history2 15.2
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 60 1010 1070 1150 1270 2060 <b>Imit/base</b> >25 -20 <b>Imit/base</b> >20 >30 	0 57 <1 940 1075 995 1228 3301 current 5 3 <1 5 3 <1 0.1 9.2 20.2 current	0 56 <1 926 1094 1014 1243 3403 history1 3 3 3 <1 0.1 8.4 19.6 history1	0 58 0 1110 1216 1068 1475 3452 history2 3 2 <1 history2 0.1 8.0 18.5 history2

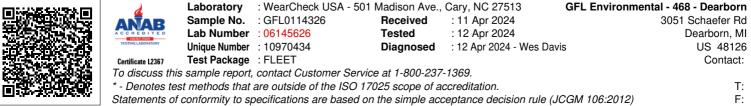


# **OIL ANALYSIS REPORT**





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	ERTIES	method	limit/base	current	history1	history2
∕isc @ 100°C	cSt	ASTM D445	15.4	12.9	13.1	13.2
GRAPHS						
Ferrous Alloys						
iron						
chromium nickel		· · · · · · · · · · · · · · · · · · ·				
and the second sec						
-						
-			Research of the second s			
-	26/24		47610			
	Feb26/24	Apr5/24	Apr9/24			
Dec18122 Pec18123 Pec19123 Non-ferrous Meta			Apr9/24			
Dec18122 Pec18123 Pec19123 Non-ferrous Meta			April/24			
E2200000000000000000000000000000000000			Apr9.24			
EE2131 Deer Teacher			Apr9/24			
E2200000000000000000000000000000000000			Apr8/24			
E2200000000000000000000000000000000000			Apri3/24			
E2200000000000000000000000000000000000			Ap/3/24			
Non-ferrous Meta			Api5/24			
Non-ferrous Meta		Apr5/24	Apr3/24			
Non-ferrous Meta	als	Apr5/24				
EZCALLANCE COPPER	als		Apr6/24			
E278139 Non-ferrous Meta	als	Apr5/24		Bace Numbe	r	
Non-ferrous Meta	als	Apr5/24		Base Numbe	:Г	
Non-ferrous Meta	als	Apr5/24	404024 404024		IT	
Non-ferrous Meta	als	Apr5/24	404024 404024		ır	
Non-ferrous Meta	als	Apr5/24	404024 404024		r	
Non-ferrous Meta	als	Apr5/24	404024 404024		IT	
Non-ferrous Meta	als	Apr5/24	404024 404024		ır	
Non-ferrous Meta	als	Apr5/24	0.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0		ır	
Viscosity @ 100°	als	Apr5/24	404024 404024		IT	
Non-ferrous Meta	als <sup>\$2,92</sup> .92 C	Apr5/24	10.0 40/9/24 10.0 10.	Base		
Viscosity @ 100°	als	Apr5/24	10.0 (0,HOX Bu) Jaquiny Bu) Jaquiny Bu Jang Bu Jang Bu Jang Bu Jan		Teb/26/24	Apr5/24



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Submitted By: "Billy" see also GFL468 - Belal Dgheish