

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend



## Area (WEL942) 11252 Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (16 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.

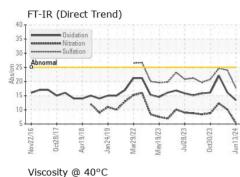
## Fluid Condition

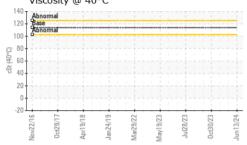
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

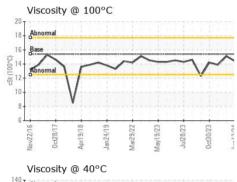
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0111528	GFL0111523	GFL0111546
Sample Date		Client Info		13 Jun 2024	18 Apr 2024	12 Feb 2024
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	14	54	52
Chromium	ppm	ASTM D5185m	>20	<1	3	4
Nickel	ppm	ASTM D5185m	>4	<1	0	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>20	5	4	5
Lead	ppm	ASTM D5185m	>40	<1	0	4
Copper	ppm	ASTM D5185m	>330	1	5	68
Tin	ppm	ASTM D5185m	>15	<1	<1	2
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		<1	0	0
	1-1-				0	
ADDITIVES	1-1-	method	limit/base	current	history1	history2
		method ASTM D5185m	limit/base			history2
ADDITIVES	ppm ppm			current	history1	
ADDITIVES Boron Barium	ppm	ASTM D5185m	0	current 2	history1 3	15
ADDITIVES Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0	current 2 <1	history1 3 0	15 2
ADDITIVES Boron Barium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 2 <1 64	history1 3 0 67	15 2 68
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 2 <1 64 <1	history1 3 0 67 <1	15 2 68 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 2 <1 64 <1 941	history1 3 0 67 <1 1018	15 2 68 2 823
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current           2           <1           64           <1           941           1096	history1 3 0 67 <1 1018 1192	15 2 68 2 823 1404
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm 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	current           2           <1           64           <1           941           1096           1029	history1 3 0 67 <1 1018 1192 1073	15 2 68 2 823 1404 886
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm 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	current           2           <1           64           <1           941           1096           1029           1213	history1 3 0 67 <1 1018 1192 1073 1325	15 2 68 2 823 1404 886 1148
ADDITIVES 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	Current 2 <1 64 <1 941 1096 1029 1213 2842	history1         3         0         67         <1         1018         1192         1073         325         3276	15 2 68 2 823 1404 886 1148 2437
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm 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	current         2         <1         64         <1         941         1096         1029         1213         2842         current	history1         3         0         67         <1         1018         1192         1073         1325         3276         history1	15 2 68 2 823 1404 886 1148 2437 <b>history2</b>
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current           2           <1           64           <1           941           1096           1029           1213           2842           current           5	history1         3         0         67         <1         1018         1192         1073         1325         3276         history1         8	15 2 68 2 823 1404 886 1148 2437 history2 17
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm 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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	current         2         <1         64         <1         941         1096         1029         1213         2842         current         5         <1	history1         3         0         67         <1         1018         1192         1073         3276         history1         8         4	15 2 68 2 823 1404 886 1148 2437 history2 17 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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	current         2         <1         64         <1         941         1096         1029         1213         2842         current         5         <1         5         <1         5	history1         3         0         67         <1         1018         1192         1073         1325         3276         history1         8         4         0	15 2 68 2 823 1404 886 1148 2437 history2 17 2 3
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 20	current         2         <1         64         <1         941         1096         1029         1213         2842         current         5         <1         5         <1         5         <1         5         <1         5         <1         5         <1         5 <urrent< td=""></urrent<>	history1         3         0         67         <1         1018         1192         1073         1325         3276         history1         8         4         0         history1	15 2 68 2 823 1404 886 1148 2437 <b>history2</b> 17 2 3 3 <b>history2</b>
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 >20 <b>imit/base</b> >3	current         2         <1         64         <1         941         1096         1029         1213         2842         current         5         <1         5         <1         0.2	history1         3         0         67         <1         1018         1192         1073         3276         history1         8         4         0         history1         2.8	15 2 68 2 823 1404 886 1148 2437 history2 17 2 3 3 history2 1.3
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 2060 225 225 220 1000 225 220 200 200 200 200 200 200 200	current         2         <1         64         <1         941         1096         1029         1213         2842         current         5         <1         5         <1         5         <1.5         0.2         5.3	history1         3         0         67         <1         1018         1192         1073         3276         history1         8         4         0         history1         2.8         10.1	15 2 68 2 823 1404 886 1148 2437 history2 17 2 3 3 history2 1.3 1.3 12.3
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 20 3 20 20 3 3 20 20 20 20 20 20 20 20 20 20 20 20 20	current         2         <1         64         <1         941         1096         1029         1213         2842         current         5         <1         5         <1         5         <1         5         <1         5         <1         5         <1               0.2         5.3         17.7	history1         3         0         67         <1         1018         1192         1073         3276         history1         8         4         0         history1         2.8         10.1         24.0	15 2 68 2 823 1404 886 1148 2437 <b>history2</b> 17 2 3 <b>history2</b> 1.3 1.3 12.3 24.6

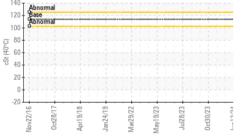


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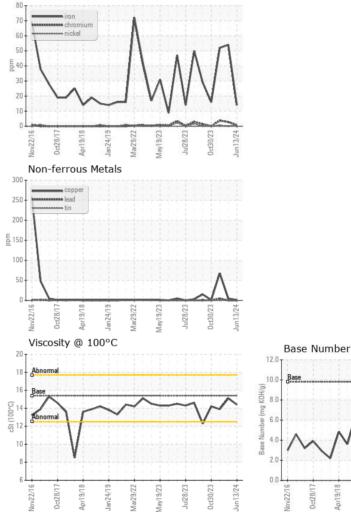


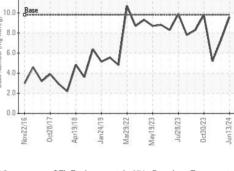




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	14.4	15.1	13.9
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 074 - Douglas - Transwaste Sample No. : GFL0111528 Received : 02 Jul 2024 1219 Landfill Road Lab Number : 06226007 Tested : 05 Jul 2024 Douglas, GA Unique Number : 11109500 Diagnosed : 05 Jul 2024 - Jonathan Hester US 31533 Test Package : FLEET ( Additional Tests: KV40 ) Contact: CURTIS JACOBS Certificate 12367 CURTIS.JACOBS@GFLENV.COM To discuss this sample report, contact Customer Service at 1-800-237-1369. T: (912)384-6001 \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. E:

 Elements
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

 Report Id: GFL074 [WUSCAR] 06226007 (Generated: 07/09/2024 20:21:56) Rev: 1
 Submitter

Submitted By: CURTIS JACOBS

Page 2 of 2