

OIL ANALYSIS REPORT

Sample Rating Trend





Component

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

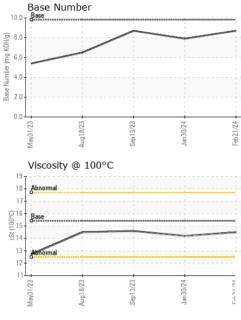
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0114411	GFL0103923	GFL0093237
Sample Date		Client Info		21 Feb 2024	30 Jan 2024	13 Sep 2023
Machine Age	hrs	Client Info		2980	2799	1750
Oil Age	hrs	Client Info		181	1	1750
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	3	8	4
Chromium	ppm	ASTM D5185m		0	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm		>25	1	3	<1
Lead	ppm	ASTM D5185m	>45	<1	0	0
Copper	ppm		>85	<1	<1	<1
Tin	ppm		>4	0	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
				•	0	0
ADDITIVES	1-1-	method	limit/base	current	history1	history2
ADDITIVES Boron			limit/base	current	history1	history2
	ppm	method				
Boron Barium	ppm ppm	method ASTM D5185m	0	current 6	history1 <1	history2 3
Boron	ppm ppm ppm	method ASTM D5185m ASTM D5185m	0	current 6 0	history1 <1 0	history2 3 0
Boron Barium Molybdenum	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 6 0 57	history1 <1 0 60	history2 3 0 57
Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 6 0 57 0	history1 <1 0 60 0	history2 3 0 57 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	Current 6 0 57 0 998	history1 <1 0 60 0 1053	history2 3 0 57 <1 943
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	Current 6 0 57 0 998 1185	history1 <1 0 60 0 1053 1150	history2 3 0 57 <1 943 1223
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	Current 6 0 57 0 998 1185 1087	history1 <1 0 60 0 1053 1150 1111	history2 3 0 57 <1 943 1223 991
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	Current 6 0 57 0 998 1185 1087 1318	<1 0 60 0 1053 1150 1111 1339	history2 3 0 57 <1 943 1223 991 1239
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method 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 6 0 57 0 998 1185 1087 1318 3828	<1 0 60 0 1053 1150 1111 1339 3197	history2 3 0 57 <1 943 1223 991 1239 3488
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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 6 0 57 0 998 1185 1087 1318 3828 Current	history1 <1 0 60 0 1053 1150 1111 1339 3197 history1	history2 3 0 57 <1 943 1223 991 1239 3488 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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 limit/base	Current 6 0 57 0 998 1185 1087 1318 3828 Current 3	<1 0 60 0 1053 1150 1111 1339 3197 history1 4	history2 3 0 57 <1 943 1223 991 1239 3488 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current 6 0 57 0 998 1185 1087 1318 3828 current 3 <1	<1 0 60 0 1053 1150 1111 1339 3197 history1 4 1	history2 3 0 57 <1 943 1223 991 1239 3488 history2 3 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >30	Current 6 0 57 0 998 1185 1087 1318 3828 Current 3 3 <1 2	<1 0 60 0 1053 1150 1111 1339 3197 history1 4 1 2	history2 3 0 57 <1 943 1223 991 1239 3488 history2 3 <1 3
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 0 1010 1070 1150 1270 2060 Imit/base >30 -20	Current 6 0 57 0 998 1185 1087 1318 3828 Current 3 2 <1 2 Current	<1 0 60 0 1053 1150 1111 1339 3197 history1 4 1 2 history1	history2 3 0 57 <1 943 1223 991 1239 3488 history2 3 <1 3 <1 3 <1 3 <1 3 <1 3 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 ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30 200 limit/base	Current 6 0 57 0 998 1185 1087 1318 3828 Current 3 2 <1 2 Current 0.2	<1 0 60 0 1053 1150 1111 1339 3197 history1 4 1 2 history1 0.4	history2 3 0 57 <1 943 1223 991 1239 3488 history2 3 <1 3 <1 3 <1 3 <10 3 <10 3 0.2
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 TS ppm ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 220 imit/base >3 >20	Current 6 0 57 0 998 1185 1087 1318 3828 current 3 <1 2 current 0.2 6.5	history1 <1 0 60 0 1053 1150 1111 1339 3197 history1 4 1 2 history1 0.4 8.3	history2 3 0 57 <1 943 1223 991 1239 3488 history2 3 <1 3 <1 3 <10 0.2 6.9
Boron 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 ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 2060 2060 200 200 200 200 20	Current 6 0 57 0 998 1185 1087 1318 3828 Current 3 <1 2 Current 0.2 6.5 18.5 Current	history1 <1 0 60 0 1053 1150 1111 1339 3197 history1 4 1 2 history1 0.4 8.3 19.7	3 0 57 <1 943 1223 991 1239 3488 history2 3 <1 3 <10 1239 3488 history2 0 0.2 6.9 18.4 history2
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 TS ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415 method	0 0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >3 20	Current 6 0 57 0 998 1185 1087 1318 3828 Current 3 3 <1 2 Current 0.2 6.5 18.5	<1 0 60 0 1053 1150 1111 1339 3197 history1 4 1 2 history1 0.4 8.3 19.7	history2 3 0 57 <1 943 1223 991 1239 3488 history2 3 <1 3 <10 0.2 6.9 18.4



OIL ANALYSIS REPORT

VISUAL



	Unique Number	. 10000010		10sed :12	Mar 2024 - V	Nee Deste		US 7705
Laboratory Sample No. Lab Number	: WearCheck USA - 50 : GFL0114411 : 06114985	Rece Teste	ived : 11 ed : 12	Mar 2024 Mar 2024	72	onmental - 865 - E 213 East Moun		
		May31/23	Sep13/23	Jan30/24 +	Feb21/24	May31/23	Sep13/23	Jan 30,24
		13 Attnormal			Base 2.			
		6 16 Base 00 15 5 14			Base Number (mg KOH/g)			
		17- 			KOH/g)			
		19 18 Abnormal			10.	Base Number	-	
		Viscosity @ 100°C		Jan	Feb	Base Number		
		May31/23	Sep13/23	Jan30/24	Feb21/24			
		5						
		<u>ة</u> 10						
		15 - The second						
		copper lead						
		≅ Non-ferrous Metal		7	LC			
		0 May31/23	Sep13/23	Jan30/24	Feb21/24			
		10	-					
		<u>특</u> 30- 20-						
Sep	Jan	40						
Sep 13/23	Jan30/24	50						
		Ferrous Alloys						
		Visc @ 100°C GRAPHS	cSt	ASTM D445	15.4	14.5	14.2	14.6
		FLUID PROPE	RTIES	method	limit/base	current	history1	history2
1	1 1	Free Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Sep	Jan Feb	Odor Emulsified Water	scalar scalar	*Visual *Visual	NORML >0.2	NORML NEG	NORML NEG	NORML NEG
Sep 13/23	Jan30/24 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
	Sand/Dirt	scalar scalar	*Visual	NONE	NONE	NONE	NONE	
	Silt Debris	scalar	*Visual *Visual	NONE NONE	NONE NONE	NONE NONE	NONE NONE	
		Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
		VISUAL White Metal	scalar	method *Visual	limit/base	current NONE	history1 NONE	history2 NONE



Submitted By: TECHNICIAN ACCOUNT