

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

913151

Component Diesel Engine Fluid

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.

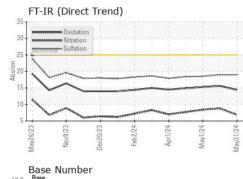
Fluid Condition

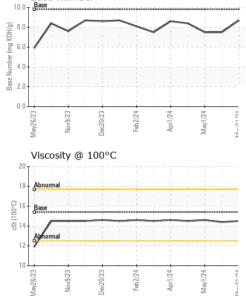
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0093444	GFL0109303	GFL0109418
Sample Date		Client Info		31 May 2024	08 May 2024	01 May 2024
Machine Age	hrs	Client Info		3302	3121	3059
Oil Age	hrs	Client Info		181	575	513
Oil Changed		Client Info		Not Changd	Changed	Not Changd
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	7	4
Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		8	9	10
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	4	2	3
Lead	ppm	ASTM D5185m	>45	0	<1	<1
Copper	ppm	ASTM D5185m	>85	<1	0	<1
Tin	ppm	ASTM D5185m	>4	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	<1	0
Cadmium ADDITIVES	ppm	ASTM D5185m method	limit/base		<1 history1	0 history2
	ppm ppm		limit/base 0	0		-
ADDITIVES		method ASTM D5185m		0 current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 current 6 1 58	history1 4	history2 0 0 58
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm	method ASTM D5185m ASTM D5185m	0 0 60 0	0 current 6 1 58 0	history1 4 0 56 <1	history2 0 0 58 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 current 6 1 58 0 905	history1 4 0 56 <1 943	history2 0 0 58 <1 980
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	0 current 6 1 58 0 905 1144	history1 4 0 56 <1 943 1209	history2 0 0 58 <1 980 1244
ADDITIVES 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	0 current 6 1 58 0 905 1144 1004	history1 4 0 56 <1 943 1209 1084	history2 0 0 58 <1 980 1244 1124
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	0 current 6 1 58 0 905 1144 1004 1235	history1 4 0 56 <1 943 1209 1084 1298	history2 0 0 58 <1 980 1244 1124 1305
ADDITIVES 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	0 current 6 1 58 0 905 1144 1004 1235 3305	history1 4 0 56 <1 943 1209 1084 1298 3640	history2 0 0 58 <1 980 1244 1124 1305 3910
ADDITIVES 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	0 0 60 0 1010 1070 1150 1270	0 current 6 1 58 0 905 1144 1004 1235	history1 4 0 56 <1 943 1209 1084 1298	history2 0 0 58 <1 980 1244 1124 1305 3910 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 current 6 1 58 0 905 1144 1004 1235 3305 current 4	history1 4 0 56 <1 943 1209 1084 1298 3640 history1 3	history2 0 0 58 <1 980 1244 1124 1305 3910 history2 3
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 1010 1070 1150 1270 2060 Limit/base >30	0 current 6 1 58 0 905 1144 1004 1235 3305 current 4 0	history1 4 0 56 <1 943 1209 1084 1298 3640 history1 3 1	history2 0 0 58 <1 980 1244 1124 1305 3910 history2 3 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 Limit/base >30	0 current 6 1 58 0 905 1144 1004 1235 3305 current 4	history1 4 0 56 <1 943 1209 1084 1298 3640 history1 3	history2 0 0 58 <1 980 1244 1124 1305 3910 history2 3
ADDITIVES 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 1010 1070 1150 1270 2060 Limit/base >30	0 current 6 1 58 0 905 1144 1004 1235 3305 current 4 0	history1 4 0 56 <1 943 1209 1084 1298 3640 history1 3 1	history2 0 0 58 <1 980 1244 1124 1305 3910 history2 3 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sidium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30	0 current 6 1 58 0 905 1144 1004 1235 3305 current 4 0 3	history1 4 0 56 <1 943 1209 1084 1298 3640 history1 3 1 3 1 3 0.3	history2 0 0 58 <1 980 1244 1124 1305 3910 history2 3 <1 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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 >20 Imit/base >33	0 current 6 1 58 0 905 1144 1004 1235 3305 current 4 0 3 current	history1 4 0 56 <1 943 1209 1084 1298 3640 history1 3 1 3 1 3 history1	history2 0 0 58 <1 980 1244 1124 1305 3910 history2 3 <1 3 <1 3 <1 3 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 >20 Imit/base >33	0 current 6 1 58 0 905 1144 1004 1235 3305 current 4 0 3 current 0.6	history1 4 0 56 <1 943 1209 1084 1298 3640 history1 3 1 3 1 3 0.3	history2 0 0 58 <1 980 1244 1124 1305 3910 history2 3 <1 3 <1 3 <10 3 <10 3 <10 3 <10.2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >30 200 <i>limit/base</i> >3 >20	0 current 6 1 58 0 905 1144 1004 1235 3305 current 4 0 3 current 0.6 6.9	history1 4 0 56 <1 943 1209 1084 1298 3640 history1 3 1 3 1 3 1 0.3 8.8	history2 0 0 58 <1 980 1244 1305 3910 history2 3 <1 3 <1 3 <10 0.2 8.4
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >3 20	0 current 6 1 58 0 905 1144 1004 1235 3305 current 4 0 3 current 0.6 6.9 19.0	history1 4 0 56 <1 943 1209 1084 1298 3640 history1 3 1 3 1 3 1 0.3 8.8 19.0	history2 0 0 58 <1 980 1244 1305 3910 history2 3 <1 3 <1 3 <10 0.2 8.4 18.5



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	LIGHT	NONE	LIGHT	
Salada California Salada Sa	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE	
May1/24 . May31/24 .	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML	
May1/24 May31/24	Odor	scalar	*Visual	NORML	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG	
www.nnnnnn	Free Water	scalar	*Visual		NEG	NEG	NEG	
\checkmark	FLUID PROPE	ERTIES	method	limit/base	current	history1	history2	
	Visc @ 100°C	cSt	ASTM D445	15.4	14.5	14.4	14.6	
	GRAPHS							
	Ferrous Alloys							
	40 ar							
May1/24	35 - chromium							
Ma	30							
	25							
	15							
	10							
	5 1			~				
	0							
	May26/23 Nov9/23 Dec20/23	Feb2/24	Apr1/24 May1/24	May31/24				
	Mayá Nor Decá	별	Ap	May				
	Non-ferrous Meta	als						
May1/24	12 copper							
Ma	10							
	8-							
	E 6-							
	d							
	4							
	2							
	0		and the second second					
	May26/23 Nov9/23 Dec20/23	Feb2/24	Apr1/24 May1/24	May31/24				
	May No	æ	Ag	May				
	Viscosity @ 100°	С			Base Numbe	r		
	19 18 Abnormal			10.0	Base			
	17-			- 8.0			\sim \prime	
	16 Base			B/HO		\sim	\sim	
	() 015 ()			E 6.0	•			
				6.0 6.0 8388 Winnber (mg KOH/d) 8388 Base Vinnber (mg KOH/d)	1-			
	13 - Abnormal			Se Nr				
	12			⁶⁰ 2.0)			
	10			0.0				
	May26/23 - Nov9/23 - Dec20/23 -	Feb2/24	Apr1/24 . May1/24 .	May31/24	May26/23	Dec20/23 - Feb2/24 -	Apr1/24 - May1/24 - May31/24 -	
	May2 Nov	Feb	Api	May3	May2 Nov	Dec2	Apr May May3	
aboratory	: WearCheck USA - 501 Madiso				GFL Env	GFL Environmental - 891 - Oklahoma City Hauling		
Sample No.	: GFL0093444 : 06201004	Recei Teste		5 Jun 2024 7 Jun 2024			South Rockwell	
ah Number					Oklahoma City, OK			
	: 11063127	Diagn	osed : 07	' Jun 2024 - W	les Davis		US 73128	
Lab Number Unique Number Test Package		Diagr	iosed : 07	' Jun 2024 - W	les Davis	Cont	US 73128 tact: Andy Smith	

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)

Report Id: GFL891 [WUSCAR] 06201004 (Generated: 06/07/2024 00:30:18) Rev: 1

Certificate L2367

Submitted By: Andy Smith

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