

OIL ANALYSIS REPORT

Sample Rating Trend



Area (TB6838) 812037

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.

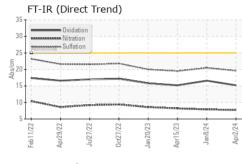
Fluid Condition

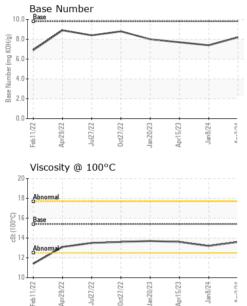
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0116166	GFL0104546	GFL0082538
Sample Date		Client Info		02 Apr 2024	08 Jan 2024	15 Apr 2023
Machine Age	hrs	Client Info		5597	5018	4112
Oil Age	hrs	Client Info		540	906	604
Oil Changed		Client Info		Changed	Not Changd	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	>100	10	11	16
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	2	5
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	1	1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ouumen	ppm	AOTIVI DOTODITI		U	0	0
ADDITIVES	ppm	method	limit/base	current	history1	history2
	ppm		limit/base	-	-	-
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 8 0 63	history1 2	history2 0
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0	current 8 0	history1 2 0	history2 0 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 8 0 63 0 997	history1 2 0 55 <1 892	history2 0 0 64 <1 1062
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	methodASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185m	0 0 60 0 1010 1070	current 8 0 63 0 997 1086	history1 2 0 55 <1 892 981	history2 0 0 64 <1 1062 1146
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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 8 0 63 0 997 1086 926	history1 2 0 55 <1 892 981 964	history2 0 0 64 <1 1062 1146 1059
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	current 8 0 63 0 997 1086 926 1232	history1 2 0 55 <1 892 981 964 1142	history2 0 0 64 <1 1062 1146 1059 1333
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	0 0 60 0 1010 1070 1150	current 8 0 63 0 997 1086 926	history1 2 0 55 <1 892 981 964	history2 0 0 64 <1 1062 1146 1059
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	current 8 0 63 0 997 1086 926 1232	history1 2 0 55 <1 892 981 964 1142	history2 0 0 64 <1 1062 11146 1059 1333
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 8 0 63 0 997 1086 926 1232 3240 current 2	history1 2 0 55 <1 892 981 964 1142 2964 history1 3	history2 0 0 64 <1 1062 1146 1059 1333 3368 history2 6
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 0 1010 1070 1150 1270 2060 limit/base	current 8 0 63 0 997 1086 926 1232 3240 current 2 <1	history1 2 0 55 <1 892 981 964 1142 2964 history1 3 0	history2 0 0 64 <1 1062 1146 1059 1333 3368 history2 6 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 8 0 63 0 997 1086 926 1232 3240 current 2	history1 2 0 55 <1 892 981 964 1142 2964 history1 3	history2 0 0 64 <1 1062 1146 1059 1333 3368 history2 6
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 TS	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	current 8 0 63 0 997 1086 926 1232 3240 current 2 <1 2 current 2 current	history1 2 0 55 <1 892 981 964 1142 2964 history1 3 0 3 history1	history2 0 0 64 <1 1062 1146 1059 1333 3368 history2 6 2 1 4 1 1059 1333 3368
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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	current 8 0 63 0 997 1086 926 1232 3240 current 2 <1 2 <1 2 <0.6	history1 2 0 55 <1 892 981 964 1142 2964 history1 3 0 3 0 3 0.6	history2 0 0 64 <1 1062 1146 1059 1333 3368 history2 6 2 1 history2 6 2 1 history2 0.7
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 TS ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	current 8 0 63 0 997 1086 926 1232 3240 current 2 <1 2 <1 2 <1 2 <17	history1 2 0 55 <1 892 981 964 1142 2964 history1 3 0 3 0 3 0.6 7.9	history2 0 0 64 <1 1062 1146 1059 1333 3368 history2 6 2 1 history2 6 2 1 history2 0.7 8.2
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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	current 8 0 63 0 997 1086 926 1232 3240 current 2 <1 2 <1 2 <0.6	history1 2 0 55 <1 892 981 964 1142 2964 history1 3 0 3 0 3 0.6	history2 0 0 64 <1 1062 1146 1059 1333 3368 history2 6 2 1 history2 6 2 1 history2 0.7
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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	current 8 0 63 0 997 1086 926 1232 3240 current 2 <1 2 <1 2 <1 2 <17	history1 2 0 55 <1 892 981 964 1142 2964 history1 3 0 3 0 3 0.6 7.9	history2 0 0 64 <1 1062 1146 1059 1333 3368 history2 6 2 1 history2 6 2 1 history2 0.7 8.2
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 2060 225 20 225 20 20 320 33 20 20 20	current 8 0 63 0 997 1086 926 1232 3240 current 2 <1 2 <1 2 <1 9 0.6 7.7 19.6	history1 2 0 55 <1 892 981 964 1142 2964 history1 3 0 3 0.6 7.9 20.5	history2 0 0 64 <1 1062 1146 1059 1333 3368 history2 6 2 1 history2 0.7 8.2 19.5



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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
adaa 2 a ³⁰ aa jaasa walay ka a	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
\sim	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Jan 8/24 Apr 2/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
n A	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		method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	13.6	13.2	13.6
	GRAPHS						
	Ferrous Alloys						
Jan 8/24 -	70 - iron chromium						
Jan	60 - mickel						
	50						
	₽.40						
	30						
	10						
	0						
	Feb11/22 Apr29/22 Jul27/22	0ct27/22 Jan20/23	Apr15/23 Jan8/24	Apr2/24			
	Feb Apri Jul	Jan	Apr Ja	Ap			
5. 5	Non-ferrous Meta	ls					
Jan 8/24	16 14						
	12						
	10						
	튭 8-						
	6						
	4						
	2						
		1/22	\pr15/23 Jan8/24	Apr2/24			
	Feb11/22 Apr29/22 Jul27/22	0ct27/22 Jan20/23	Apr15/23 - Jan8/24 -	Apri			
	Viscosity @ 100°C	2			Base Number		
	19			10.0	Base		
	18 Abnormal						
	16 Base			(B/HO			~
	0.15 0.001 3.14			E 6.0	• • • • • • • • • • • • • • • • • • • •		
	र्च 14						
	13 Abnormat			ase N			
	11			^{co} 2.0			
	10						
		1/22	Apr15/23 Jan8/24	Apr2/24	Feb11/22 Apr29/22 Jul27/22	0ct27/22 Jan 20/23	Apr15/23 Jan8/24
	611/22 r29/22 I27/22	12(
	Feb 11/22 Apr29/22 Jul27/22	0ct27/22 Jan20/23	Apr Ja	Ă	Ar Fe	ō P	φA Γ
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To discuss this sample repo * - 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)

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Certificate L2367

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Submitted By: Seel also GFL947 - Tim Kieffer

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