

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 827062-257 Component Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (38 QTS)

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.

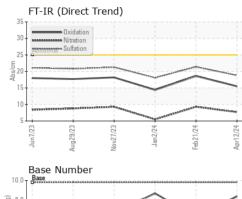
Fluid Condition

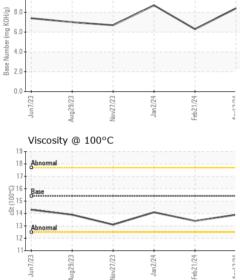
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0108466	GFL0108563	GFL0103386
Sample Date		Client Info		12 Apr 2024	21 Feb 2024	02 Jan 2024
Machine Age	hrs	Client Info		0	11936	0
Oil Age	hrs	Client Info		0	600	0
Oil Changed		Client Info		N/A	Changed	N/A
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	39	11	2
Chromium	ppm	ASTM D5185m	>20	2	0	0
Nickel	ppm	ASTM D5185m	>5	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	3	2	1
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	2	2	0
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
	ppm	ASTIN DSTOSIII		<1	0	0
ADDITIVES	ppm	method	limit/base	current	history1	history2
	ppm		limit/base		-	-
ADDITIVES		method ASTM D5185m		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 4	history1 2	history2 4
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0 0 60	current 4 0	history1 2 0	history2 4 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 4 0 62	history1 2 0 58	history2 4 0 57
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 4 0 62 <1	history1 2 0 58 0	history2 4 0 57 <1
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 4 0 62 <1 950	history1 2 0 58 0 931	history2 4 0 57 <1 941
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	Current 4 0 62 <1 950 1111	history1 2 0 58 0 931 1091	history2 4 0 57 <1 941 1068
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	Current 4 0 62 <1 950 1111 1003	history1 2 0 58 0 931 1091 985	history2 4 0 57 <1 941 1068 1085
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270	Current 4 0 62 <1 950 11111 1003 1225	history1 2 0 58 0 931 1091 985 1155	history2 4 0 57 <1 941 1068 1085 1268
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	Current 4 0 62 <1 950 1111 1003 1225 2960	history1 2 0 58 0 931 1091 985 1155 2916	history2 4 0 57 <1 941 1068 1085 1268 3167
ADDITIVES 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	0 0 60 1010 1070 1150 1270 2060	Current 4 0 62 <1 950 11111 1003 1225 2960 Current	history1 2 0 58 0 931 1091 985 1155 2916 history1	history2 4 0 57 <1 941 1068 1085 1268 3167 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	Current 4 0 62 <1 950 11111 1003 1225 2960 Current 8	history1 2 0 58 0 931 1091 985 1155 2916 history1 3	history2 4 0 57 <1 941 1068 1085 1268 3167 history2 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 >25	Current 4 0 62 <1 950 11111 1003 1225 2960 Current 8 2 3 3 Current	history1 2 0 58 0 931 1091 985 1155 2916 history1 3 4 0 history1	history2 4 0 57 <1 941 1068 1085 1268 3167 history2 3 2 2 history2
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 limit/base >25 >20 limit/base	current 4 0 62 <1 950 1111 1003 1225 2960 current 8 2 3 current 0.1	history1 2 0 58 0 931 1091 985 1155 2916 history1 3 4 0 history1 0.4	history2 4 0 57 <1 941 1068 1085 1268 3167 history2 3 2 history2 0 0 0.1
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	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	current 4 0 62 <1 950 1111 1003 1225 2960 current 8 2 3 current 0.1 7.7	history1 2 0 58 0 931 1091 985 1155 2916 history1 3 4 0 history1 0.4 9.3	history2 4 0 57 <1 941 1068 1085 1268 3167 history2 3 2 history2 0 0 10 10 10 10 10 10 3 2 history2 0.1 5.5
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 limit/base >25 >20 limit/base	current 4 0 62 <1 950 1111 1003 1225 2960 current 8 2 3 current 0.1	history1 2 0 58 0 931 1091 985 1155 2916 history1 3 4 0 history1 0.4	history2 4 0 57 <1 941 1068 1085 1268 3167 history2 3 2 history2 0 0 0.1
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	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	current 4 0 62 <1 950 1111 1003 1225 2960 current 8 2 3 current 0.1 7.7	history1 2 0 58 0 931 1091 985 1155 2916 history1 3 4 0 history1 0.4 9.3	history2 4 0 57 <1 941 1068 1085 1268 3167 history2 3 2 history2 0 0 10 10 10 10 10 10 3 2 history2 0.1 5.5
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 >25 imit/base >4 >20	4 0 62 <1 950 1111 1003 1225 2960 current 8 2 3 current 0.1 7.7 18.8	history1 2 0 58 0 931 1091 985 1155 2916 history1 3 4 0 history1 0.4 9.3 21.4	history2 4 0 57 <1 941 1068 1085 1268 3167 history2 3 2 history2 0.1 5.5 18.1



OIL ANALYSIS REPORT





nd)			VISUAL		method	limit/base	current	history1	history2
			White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
<u>.</u>			Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
		A ROAD AND A	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
-			Silt	scalar	*Visual	NONE	NONE	NONE	NONE
			Debris	scalar	*Visual	NONE	NONE	NONE	LIGHT
add a look of a	State of the owner owne	AND DESCRIPTION OF THE PARTY OF	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
N0V21/23	Jan2/24	Feb21/24 Apr12/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
NON	La	Feb	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
			Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
			Free Water	scalar	*Visual		NEG	NEG	NEG
	\frown	\checkmark	FLUID PROP	ERTIES	method	limit/base	current	history1	history2
			Visc @ 100°C	cSt	ASTM D445	15.4	13.9	13.4	14.1
			GRAPHS						
			Ferrous Alloys						
	Jan2/24 -	Feb21/24 -	35 - iron						
1	Jan	Feb2	30						
			25 - Ē 20 -						
			15-		/				
			10-						
			5-						
				2 5 E	illine i	ARRADATION OF			
/			Jun7/23 Aug29/23	Nov27/23 Jan2/24	Feb21/24	Apr12/24			
			√ Non-ferrous Met	2	Ľ.	A			
	2/24 -	- 124 -	¹⁰ T	.ais					
	Jan2/24	Feb21/24	copper						
			8 - unsusseen tin		1				
			6						
			E dd						
			2-		1				
			Jun7/23 Aug29/23	lov27/23 Jan2/24	Feb21/24	Apr12/24			
			viscosity @ 100	2	LL.	4	Base Number		
			19			10.			
			18 - Abnormal	1 1		- 8.	0	\wedge	
						B/HOX			\searrow
			0 ¹⁶ Base 115 3 ¹⁴			0.0 6.1 Base Number (mg KOH(d) 4.1	0		•
			⁴⁵ 14			aquin 4.	0		
			13 Abnormal			ase			
			12			° 2.	0		
			11	m +	4			cn 4	4 *
			Jun7/23 Aug29/23	Nov27/23 Jan2/24	Feb21/24	Apr12/24	Jun7/23 Aug29/23	Nov27/23 Jan2/24	Feb21/24
			L Au	°N r	2	Ap	L Au	NN L	ë ·
		Laboratory	: WearCheck USA - 5				GFL E	nvironmental -	
1		Laboratory							
AN	AB	Sample No.	: GFL0108466	Recei		Apr 2024		11148	85 Tieman Ave
		Sample No. Lab Number	: GFL0108466 : 06153968	Teste	d : 22	2 Apr 2024	les Davis	N148	Thorp, W
C C R E TESTING LA	ABB MORATORY tte L2367	Sample No.	: GFL0108466 : 06153968 : 10989391		d : 22		Ves Davis		

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

Report Id: GFL904A [WUSCAR] 06153968 (Generated: 04/22/2024 13:06:32) Rev: 1

Submitted By: See also GFL904,A,B,C, 927, 938 - Andy Kane

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