

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

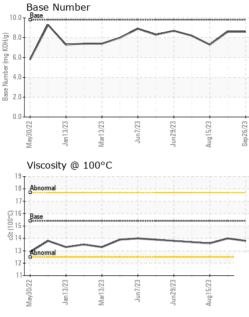
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM		method	limit/base	current	history1	history2
		Client Info		GFL0090953	GFL0090943	GFL0082632
Sample Number		Client Info				
Sample Date	lava			26 Sep 2023 5182	06 Sep 2023	15 Aug 2023
Machine Age	hrs	Client Info			5042	4869
Oil Age	hrs	Client Info		140 Observed	0	4869
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
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	8	5	18
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m		<1	<1	8
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	1	<1	2
Tin	ppm	ASTM D5185m		<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
oddinidini	ppm	No III Borooiii		•	0	0
		mathad	limit/bass	ourropt	biotoput	biotors ()
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	2	5	7
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	2 0	5 <1	7 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 65	5 <1 66	7 0 76
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 65 <1	5 <1 66 <1	7 0 76 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 0 65 <1 983	5 <1 66 <1 980	7 0 76 <1 966
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	2 0 65 <1 983 1030	5 <1 66 <1 980 1077	7 0 76 <1 966 1080
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	2 0 65 <1 983 1030 1011	5 <1 66 <1 980 1077 1064	7 0 76 <1 966 1080 960
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	2 0 65 <1 983 1030	5 <1 66 <1 980 1077 1064 1278	7 0 76 <1 966 1080 960 1222
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	2 0 65 <1 983 1030 1011	5 <1 66 <1 980 1077 1064	7 0 76 <1 966 1080 960
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	2 0 65 <1 983 1030 1011 1260	5 <1 66 <1 980 1077 1064 1278	7 0 76 <1 966 1080 960 1222
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	2 0 65 <1 983 1030 1011 1260 3157	5 <1 66 <1 980 1077 1064 1278 3769	7 0 76 <1 966 1080 960 1222 3394
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	2 0 65 <1 983 1030 1011 1260 3157 current	5 <1 66 <1 980 1077 1064 1278 3769 history1	7 0 76 <1 966 1080 960 1222 3394 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	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 Limit/base	2 0 65 <1 983 1030 1011 1260 3157 current 5	5 <1 66 <1 980 1077 1064 1278 3769 history1 4	7 0 76 <1 966 1080 960 1222 3394 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 Limit/base	2 0 65 <1 983 1030 1011 1260 3157 current 5 1	5 <1 66 <1 980 1077 1064 1278 3769 history1 4 2	7 0 76 <1 966 1080 960 1222 3394 history2 5 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	2 0 65 <1 983 1030 1011 1260 3157 current 5 1 6	5 <1 66 <1 980 1077 1064 1278 3769 history1 4 2 5	7 0 76 <1 966 1080 960 1222 3394 history2 5 2 20
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 20 imit/base >20	2 0 65 <1 983 1030 1011 1260 3157 current 5 1 6 current 0.3	5 <1 66 <1 980 1077 1064 1278 3769 history1 4 2 5 5 history1 0.2	7 0 76 <1 966 1080 960 1222 3394 history2 5 2 20 history2 0.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 20 imit/base >20	2 0 65 <1 983 1030 1011 1260 3157 current 5 1 6 current	5 <1 66 <1 980 1077 1064 1278 3769 history1 4 2 5 5	7 0 76 3 966 1080 960 1222 3394 history2 5 2 20 history2
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 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	2 0 65 <1 983 1030 1011 1260 3157 <i>current</i> 5 1 6 <i>current</i> 0.3 6.7	5 <1 66 <1 980 1077 1064 1278 3769 history1 4 2 5 <u>history1</u> 0.2 5.6	7 0 76 <1 966 1080 960 1222 3394 history2 5 2 20 history2 0.6 8.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 20 20 3 20 20 3 3 20 20 20 20 20 20 20 20 20 20 20 20 20	2 0 65 <1 983 1030 1011 1260 3157 <i>current</i> 5 1 6 <i>current</i> 0.3 6.7 18.3	5 <1 66 <1 980 1077 1064 1278 3769 history1 4 2 5 history1 0.2 5.6 17.4 history1	7 0 76 <1 966 1080 960 1222 3394 history2 5 2 20 history2 0.6 8.4 18.9 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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 20 20 33 20 20 30 20 30 20 20 20 20 20 20 20 20 20 20 20 20 20	2 0 65 <1 983 1030 1011 1260 3157 <i>current</i> 5 1 6 <i>current</i> 0.3 6.7 18.3	5 <1 66 <1 980 1077 1064 1278 3769 history1 4 2 5 5 history1 0.2 5.6 17.4	7 0 76 <1 966 1080 960 1222 3394 history2 5 2 20 history2 0.6 8.4 18.9



OIL ANALYSIS REPORT

VISUAL



$\overline{}$	White Metal	1 +1					
~	winte metal	scalar *	Visual	NONE	NONE	NONE	NONE
	Yellow Metal		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
Aug 15/23 Sep 26/23	Appearance	scalar *	Visual	NORML	NORML	NORML	NORML
Aug 1 Sep 2	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		STM D445		13.8	14.0	13.6
	GRAPHS					1 110	
	Ferrous Alloys						
	45 T						
Aug15/23	40 - iron						
Aug	35 nickel						
	E 25-						
	15		1				
	10			ing in			
	5	\checkmark					
		53 53	3	53			
	May30/22 Jan 13/23 Mar 13/23	Jun7/23	Aug15/23	Sep26/23			
	B		Au	ŏ			
	Non-ferrous Meta	als					
	copper						
	8 - second lead						
	6						
	6- E						
	6- 4-						
	4-						
	₽ 4 2						
		17/23		59/33 #			
	₽ 4 2	Jun2973		Sep.26.23			
	udd 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4			Smp26/23	Base Number		
	udd 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4			E2097cms	Base Number		
	Uid 4 4 4 4 4 4 4 4 4 4 4 4 4			10.0-	Base Number		
	Udd 4 0 0 0 0 0 0 0 0 0 0 0 0 0			10.0-	Base Number		
	Udd 4 0 0 0 0 0 0 0 0 0 0 0 0 0			10.0-	Base Number		~~
	Udd 4 0 0 0 0 0 0 0 0 0 0 0 0 0			10.0-	Base Number		
	udd 4 2 0 C27E1 uer C27E1 uer Viscosity @ 100°C			10.0-	Base Number		
	Udd 4 0 0 0 0 0 0 0 0 0 0 0 0 0			10.0- (6)HOX Buy) aduum 10,0- (0)HOX Buy) aduum 10,0- (0)HOX Buy aduum 10,0- (0)HOX BUX aduum 10,0- (0)HOX Aduum 10,0- (0)HOX BUX aduum 1	Base Number		
	udd 4 2 0 CZ2ELIner Viscosity @ 100° 19 Abnormal 17 Base 116 15 14 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			10.0-	Base Number		
	Uid 4 2 0 CZCELINE Viscosity @ 100°C 19 Abnormal 17 16 Base 114 13 Abnormal 12 11		Aug15/23	10.0- (B)HOX But But But But But But But But But But	Base		
	Uid 4 2 0 CZCELUER Viscosity @ 100°C 19 Abnormal 17 16 Base 114 13 Abnormal 12 11		Aug15/23	10.0- (B)HOX But But But But But But But But But But	Base		15/23
	Ud 4 2 0 CZZELIE Viscosity @ 100° 10 10 10 10 10 10 10 10 10 10		Aug15/23	10.0- (B)HOX But But But But But But But But But But	Base		Aug 15/23 Aug 15/23
	udd 4 2 0 CZE LINE W Viscosity @ 100°C 19 6 100°C 100	C	Aug15/23 Aug15/23	10.0 8.0 0.0 0.0 8 9 0.0 1 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	May 30/22	Mar13/23	
oratory	Uid 4 4 4 4 4 4 4 4 4 4 4 4 4 4	C EZ/Lunr 501 Madisor	EZISI ^{DIN} Y	10.0 (0)HOX But 30 (0)HOX BUT	May 30/22	EZICLUNG ECILUNG Fronmental - 814 - I	Little Rock Haulin
oratory ple No.	Uiscosity @ 100°	C EZELUNT 501 Madisor Received	EZ/SI ^{Dny} EZ/SI ^{Dny} n Ave., Ca : 02 (10.0- 10	May 30/22	EZICLUNG ECILUNG Fronmental - 814 - I	Little Rock Haulin 005 Hwy 161 N
oratory	Uiscosity @ 100° 19 10 10 10 10 10 10 10 10 10 10	C EZ/Lunr 501 Madisor	EZ/SI ^{Dhy} EZ/SI ^{Dhy} n Ave., Ca : 02 (: 03 (10.0 (0)HOX But 30 (0)HOX BUT	May 30/22	EZICLUNG ECILUNG Fronmental - 814 - I	



 Certificate 12307
 Test Package
 : FLEET

 To discuss this sample report, contact Customer Service at 1-800-237-1369.
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 * - 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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