

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 712033 Component Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- LTR)

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.

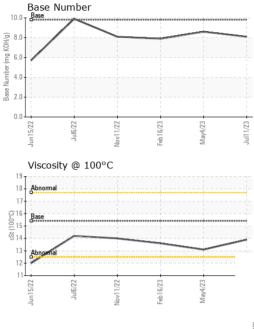
Fluid Condition

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		GFL0082754	GFL0081242	GFL0071197
Sample Date		Client Info		11 Jul 2023	04 May 2023	16 Feb 2023
Machine Age	hrs	Client Info		4808	4183	3615
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		N/A	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		13	3	22
Chromium	ppm	ASTM D5185m		0	<1	<1
Nickel	ppm	ASTM D5185m		0	<1	<1
Titanium	ppm	ASTM D5185m	~_	۰ <1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m		0 <1	3	2
Lead		ASTM D5185m	>30	0	0	0
	ppm	ASTM D5185m		u <1	0	<1
Copper Tin	ppm			0	1	<1
Vanadium	ppm	ASTM D5185m ASTM D5185m	>5	u <1	0	<1
Cadmium	ppm			0	0	0
Caumium	ppm	ASTM D5185m		U	0	0
						history2
ADDITIVES		method	iimii/base	current	history1	TIIStoryz
Boron	ppm	ASTM D5185m	0	<1	5	3
	ppm ppm					
Boron		ASTM D5185m	0	<1	5	3
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	<1 0	5 0	3 2
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 60	5 0 63	3 2 57
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 60 <1	5 0 63 <1	3 2 57 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<1 0 60 <1 922	5 0 63 <1 1002	3 2 57 <1 877
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	<1 0 60 <1 922 1225	5 0 63 <1 1002 1097	3 2 57 <1 877 1033
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	<1 0 60 <1 922 1225 1033	5 0 63 <1 1002 1097 1107	3 2 57 <1 877 1033 973
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	<1 0 60 <1 922 1225 1033 1250	5 0 63 <1 1002 1097 1107 1418	3 2 57 <1 877 1033 973 1170
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 1010 1070 1150 1270 2060 limit/base	<1 0 60 <1 922 1225 1033 1250 3517	5 0 63 <1 1002 1097 1107 1418 4420	3 2 57 <1 877 1033 973 1170 2734
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 1010 1070 1150 1270 2060 limit/base	<1 0 60 <1 922 1225 1033 1250 3517 current	5 0 63 <1 1002 1097 1107 1418 4420 history1	3 2 57 <1 877 1033 973 1170 2734 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	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	<1 0 60 <1 922 1225 1033 1250 3517 current 2	5 0 63 <1 1002 1097 1107 1418 4420 history1 3	3 2 57 <1 877 1033 973 1170 2734 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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 0 1010 1070 1150 1270 2060 limit/base >20	<1 0 60 <1 922 1225 1033 1250 3517 current 2 7	5 0 63 <1 1002 1097 1107 1418 4420 history1 3 13	3 2 57 <1 877 1033 973 1170 2734 history2 3 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20	<1 0 60 <1 922 1225 1033 1250 3517 current 2 7 0	5 0 63 <1 1002 1097 1107 1418 4420 history1 3 13 13 1	3 2 57 <1 877 1033 973 1170 2734 history2 3 5 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >20 imit/base >3	<1 0 60 <1 922 1225 1033 1250 3517 current 2 7 0 current	5 0 63 <1 1002 1097 1107 1418 4420 history1 3 13 1 1 history1	3 2 57 <1 877 1033 973 1170 2734 history2 3 5 2 2 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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >20 imit/base >3	<1 0 60 <1 922 1225 1033 1250 3517 current 2 7 0 0 current 0.4	5 0 63 <1 1002 1097 1107 1418 4420 history1 3 13 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3	3 2 57 <1 877 1033 973 1170 2734 history2 3 5 2 2 history2 0.6
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 imit/base >20 imit/base >3 >20	<1 0 60 <1 922 1225 1033 1250 3517 <i>current</i> 2 7 0 <i>current</i> 0.4 8.7	5 0 63 <1 1002 1097 1107 1418 4420 history1 3 13 1 3 13 1 1 1 1 1 1	3 2 57 <1 877 1033 973 1170 2734 history2 3 5 2 2 history2 0.6 9.2
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 imit/base >20 imit/base >3 >20 >30 imit/base	<1 0 60 41 922 1225 1033 1250 3517 current 2 7 0 current 0.4 8.7 19.3 current	5 0 63 <1 1002 1097 1107 1418 4420 history1 3 13 13 1 0.1 5.7 18.5 history1	3 2 57 <1 877 1033 973 1170 2734 history2 3 5 2 history2 0.6 9.2 19.9 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 D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 imit/base >20 imit/base >3 >20 s3 >20	<1 0 60 <1 922 1225 1033 1250 3517 <i>current</i> 2 7 0 <i>current</i> 0.4 8.7 19.3	5 0 63 <1 1002 1097 1107 1418 4420 history1 3 13 1 3 13 1 0.1 5.7 18.5	3 2 57 <1 877 1033 973 1170 2734 history2 3 5 2 history2 0.6 9.2 19.9



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	NONE	NONE	NONE
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Nov11/22 Feb16/23	May4/23 Jul11/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Feb	Ma	0001	scalar	*Visual	NORML	NORML	NORML	NORML
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
1		Free Water	scalar	*Visual		NEG	NEG	NEG
		FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445	15.4	13.9	13.1	13.6
		GRAPHS						
1		Ferrous Alloys						
		120 iron 1	I I	1				
Feb16/23	May4/23	100 - chromium						
Fet	W	80						
		E 60						
		40						
		20						
		0						
		Jun 15/22 Jul6/22	Nov11/22 Feb16/23	May4/23	Jul11/23			
		Jur J	Feb	M	٦u			
		Non-ferrous Meta	als					
		copper		1				
		Lead						
		12+						
		12 10						
		10						
			33 2					
				Participant (1997)	ult 1/23			
		10 10 8 6 4 2 0 7 7 7 7 7 7 7 7 7 7 7 7 7	Feb 16/23	May4/23	Juit1/23			
			Feb 16/23	MayA/23		Base Number		
		Viscosity @ 100°0	Feb 16/23	May4/23		Base Number		
		Viscosity @ 100°0	Feb 16/23	Mar4123	10.0			
		Viscosity @ 100°C	Feb 16/23	May4/23	10.0	Base		
		Viscosity @ 100°C	Feb 16/23	ECI-Mery	10.0	Base		
		Viscosity @ 100°0	Feb 16/23	C2/HveW	10.0	Base		
		Viscosity @ 100°C	Feb 16/23	C2/HveW	10.0 (0)HOY BOD HOY BO	Base		
		Viscosity @ 100°0	Feb 16/23	Maryl23	0.0 8.0 0.0 HOX 0.0 Eu paq	Base	_	
		Viscosity @ 100°0	O Nov1//22		10.0 (0)HOX But HOX BU	Base		
		Viscosity @ 100°0	O Nov1//22		10.0 (0)HOX But HOX BU	Base		an4/23
		Viscosity @ 100°0	Feb 16/23		10.0 (DHO) 8.0 (DHO) 6.0 (DHO) 4.0 (DHO) 880 (DHO) 880 (Base	Nev11/22	May4/23
	Laboratory	Viscosity @ 100°C	Nov11/22		10.0 (0)HOX 6.0 (0)HOX 6.0 (0)HOX 888 2.0 (0.0 (0.0) (Pase Zziginn	Nov11/22 Feb16/23	
	Laboratory Sample No.	Viscosity @ 100°0	Nov11/22	ECHARM Son Ave., Ca	10.0 (0)HOX 6.0 (0)HOX 6.0 (0)HOX 888 2.0 (0.0 (0.0) (Pase Zziginn		- 465 - Pontiac
	Sample No. Lab Number	Viscosity @ 100°C	77/11/00/ C 501 Madis Received Diagnos	son Ave., Ca t : 19 . ed : 20 .	10.0 (PHOY Bull and Action of the second sec	Pase Zziginn	Nov11/22 Feb16/23	- 465 - Pontiac 888 Baldwir Pontiac, M
	Sample No. Lab Number Unique Number	Viscosity @ 100° Viscosity @ 100° WearCheck USA - : GFL0082754 : 05902087 : 10563443	277/11/00/U C 501 Madis Received	son Ave., Ca t : 19 . ed : 20 .	10.0 (PHOY Bull and Action of the second of	Pase Zziginn	Vent1/122 Hentiform	- 465 - Pontiac 888 Baldwir Pontiac, M US 48340
vertificate L2367 of discourses this	Sample No. Lab Number Unique Number Test Package	Viscosity @ 100° Viscosity @ 100° WearCheck USA - : GFL0082754 : 05902087 : 10563443	27/11/00/ C 501 Madia Received Diagnost	son Ave., Ca d : 19, ed : 20, ician : We	10.0 (9) 400 (9) 400 (Pase Zziginn	22/11/00 Environmental Contact: 1	- 465 - Pontiac 888 Baldwir Pontiac, M