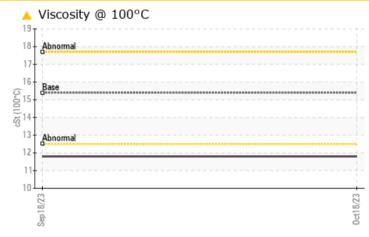




Machine Id 713025

Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION	PROBLEMATIC TEST RESULTS						
Resample at the next service interval to monitor.	Sample Status			ATTENTION	ABNORMAL		
1	Visc @ 100°C	cSt	ASTM D445 15.4	A 11.8	A 11.8		

Customer Id: GFL820 Sample No.: GFL0088186 Lab Number: 05995313 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Don Baldridge +1 <u>don.b505@comcast.net</u>

To change component or sample information: Customer Service +1 1-800-237-1369 <u>customerservice@wearcheck.com</u> There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

18 Sep 2023 Diag: Wes Davis



Resample at the next service interval to monitor.All component wear rates are normal. Light fuel dilution occurring. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.





OIL ANALYSIS REPORT

Sample Rating Trend

VISCOSITY

Machine Id 713025

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.

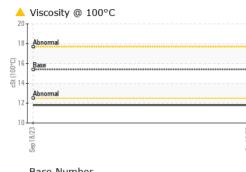
Fluid Condition

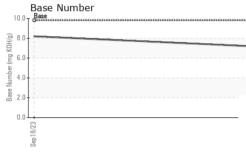
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORM	NATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0088186	GFL0088195	
Sample Date		Client Info		18 Oct 2023	18 Sep 2023	
Machine Age	hrs	Client Info		4440	2385	
Oil Age	hrs	Client Info		0	0	
Oil Changed		Client Info		N/A	Not Changd	
Sample Status				ATTENTION	ABNORMAL	
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	1.1	
Glycol		WC Method		NEG	NEG	
,	_		1		In the term of	history O
WEAR METALS	5	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	19	14	
Chromium	ppm	ASTM D5185m	>20	<1	<1	
Nickel	ppm	ASTM D5185m	>2	<1	0	
Titanium	ppm	ASTM D5185m	>2	0	0	
Silver	ppm	ASTM D5185m	>2	<1	<1	
Aluminum	ppm	ASTM D5185m	>20	4	3	
Lead	ppm	ASTM D5185m	>40	1	0	
Copper	ppm	ASTM D5185m	>330	13	12	
Tin	ppm	ASTM D5185m	>15	<1	<1	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	31	<u> </u>	
	ppm ppm		0	31 2	▲ 40 4	
Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m				
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0	2	4	
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	2 44 5	4 46	
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	2 44 5 763	4 46 5 808	
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	2 44 5 763 1096	4 46 5 808 1139	
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 60 0 1010 1070 1150	2 44 5 763 1096 728	4 46 5 808 1139 ▲ 731	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270	2 44 5 763 1096 728 830	4 46 5 808 1139 ▲ 731 ▲ 865	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	2 44 5 763 1096 728 830 2060	4 46 5 808 1139 ▲ 731 ▲ 865 2256	
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	0 60 0 1010 1070 1150 1270 2060	2 44 5 763 1096 728 830 2060 current	4 46 5 808 1139 ▲ 731 ▲ 865 2256 history1	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	2 44 5 763 1096 728 830 2060 current 12	4 46 5 808 1139 ▲ 731 ▲ 865 2256 history1 13	 history2
Phosphorus Zinc Sulfur CONTAMINAN [®] Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	2 44 5 763 1096 728 830 2060 current 12 8	4 46 5 808 1139 ▲ 731 ▲ 865 2256 ► history1 13 6	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	2 44 5 763 1096 728 830 2060 current 12	4 46 5 808 1139 ▲ 731 ▲ 865 2256 history1 13	 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	2 44 5 763 1096 728 830 2060 current 12 8	4 46 5 808 1139 ▲ 731 ▲ 865 2256 ► history1 13 6	 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	2 44 5 763 1096 728 830 2060 current 12 8 8 11	4 46 5 808 1139 ▲ 731 ▲ 865 2256 history1 13 6 8	 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium	ppm 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 ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	2 44 5 763 1096 728 830 2060 current 12 8 11 current	4 46 5 808 1139 ▲ 731 ▲ 865 2256 history1 13 6 8 8	 history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D5185m	0 60 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20	2 44 5 763 1096 728 830 2060 current 12 8 11 12 8 11 0.3	4 46 5 808 1139 ▲ 731 ▲ 865 2256 history1 13 6 8 8 history1 0.2	 history2 history2
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 60 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20	2 44 5 763 1096 728 830 2060 current 12 8 11 12 8 11 0.3 10.7	4 46 5 808 1139 ▲ 731 ▲ 865 2256 ► history1 13 6 8 8 ► history1 0.2 9.1	 history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7844	0 60 1010 1070 1150 1270 2060 imit/base >25 20 imit/base >20 >20 30 imit/base	2 44 5 763 1096 728 830 2060 current 12 8 11 current 0.3 10.7 21.3 current	4 46 5 808 1139 ▲ 731 ▲ 865 2256 history1 13 6 8 8 history1 0.2 9.1 20.0 history1	 history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 60 1010 1070 1150 1270 2060 limit/base >20 limit/base >6 >20 >30 limit/base >30	2 44 5 763 1096 728 830 2060 current 12 8 11 current 0.3 10.7 21.3	4 46 5 808 1139 ▲ 731 ▲ 865 2256 history1 13 6 8 8 <u>history1</u> 0.2 9.1 20.0	 history2 history2



OIL ANALYSIS REPORT





	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Oct18/23	Appearance	scalar	*Visual	NORML	NORML	NORML	
0	Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	11.8	11.8	
	GRAPHS						
	Ferrous Alloys						
	20 iron						
	15 - nickel						
	13						
	<u>ق</u> 10						
	5 -						
	0						
	Sep 18/23			0ct18/23			
				00			
	Non-ferrous Meta	ls					
	copper						
	sessesses tin						
	10-						
	6-						
	4						
	2						
		200020000000000000000000000000000000000		2			
	sep 18/23			0ct18/23			
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		<u>ب</u>				r	
	Viscosity @ 100°C				Base Numbe		
				10		*****	
	¹⁹				.0 Base		
	19 18 - Abnormal 17				.0 - Base		
	19 18 - Abnormal 17 - 16 - Base				.0 - Base		
	19 18 Abnormal 17 16 Base 15 14 14				.0 - Base .0		
	19 18 Abnomal 17 16 Base 15 15 14 Abnomal			8 ase Number (mg KOH/g) 4	.0 Base		
	19 18 Abnormal 17 16 Base 15 14 14			ber (mg KOH/g) 9 8	.0 Base		
	Abnormal Abnormal Abnormal Base Base Abnormal Abnormal Abnormal Abnormal			(B)HON BW BW Part Market BW Base Number B Base C C C C C C C C C C C C C C C C C C C	0 Base		
	Abnormal Abnormal Abnormal Base Base Abnormal Abnormal Abnormal Abnormal			(B)HON BW BW Part Market BW Base Number B Base C C C C C C C C C C C C C C C C C C C	0 Base		
	Abnormal Abnormal Abnormal Base Base Galaction Abnormal Abnormal Abnormal			8 (0)HO) Base Number (mg KOH(0) Base 2	0 = Base 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 =		
Laboratory	Abnormal Abnormal Abnormal Abnormal Construction Base Abnormal Construction Base Base Construction Base Base Construction Constr			(0)HOY (0) (0)HOY (0)HOY (0)HOY (0) (0)HOY (0)HOY (0	0 Base	nvironmental - 820	- Joplin Hauli
Sample No.	Abnormal Abnormal Abnormal Abnormal Construction Base Abnormal Construction Base Base Construction Base Construction	Received	1 I C I I	(0)HOY (0) (0)HOY (0)HOY (0) (0)HOY (0)HOY (0)HOY (0) (0)HOY (0)HOY (0)	0 Base		- Joplin Hauli West 7th Stre
Sample No. Lab Number	Abnormal Abnormal Abnormal Abnormal Construction Base Base Abnormal Construction Constructi	Received Diagnose	d :01 M ed :03 M	(H)HOY (b) (H)HOY (b)	0 Base		- Joplin Hauli ı West 7th Stre Joplin, M
Sample No. Lab Number Unique Number	Abnormal Abnormal Abnormal Base Base Base Base Base Base Control of the second secon	Received	d :01 M ed :03 M	(0)HOY (0) (0)HOY (0)HOY (0) (0)HOY (0)HOY (0)HOY (0) (0)HOY (0)HOY (0)	0 Base	3700 \	Vest 7th Stre Joplin, M US 6480
Sample No. Lab Number	Abnormal Abnormal Base Base Base Base Base Base Base Base Base Base Control of the second secon	Received Diagnose Diagnost	1 : 01 1 ed : 03 1 iician : Dor	ry, NC 2751 Nov 2023 Baldridge	0 Base	3700 V Contact	- Joplin Hauli West 7th Stre Joplin, M

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Contact/Location: James Jarrett - GFL820