

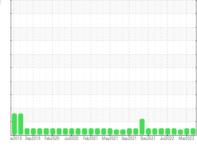
PETRO CANADA DURON SHP 15W40 (11 GAL)

Machine Id Component Diesel Engine

## **OIL ANALYSIS REPORT**

## Sample Rating Trend



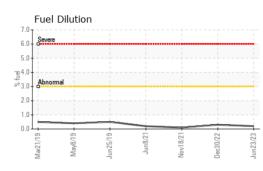


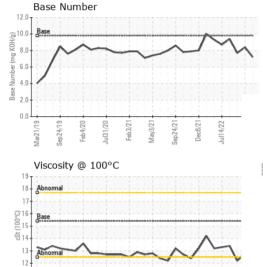


No. corrective action is recommended at this inter- Resample at the next service interval to monitor.   Sample Data   Cleant Info   123 un 2023   29 Mar 2023   30 Daec 2022     Machine Age   fras   Client Info   14321   13883   13025     All component wear rates are normal.   Contamination   NorMAL   NorMAL <t< th=""><th>DIAGNOSIS</th><th>SAMPLE INFOR</th><th>MATION</th><th>method</th><th>limit/base</th><th>current</th><th>history 1</th><th>history 2</th></t<>	DIAGNOSIS	SAMPLE INFOR	MATION	method	limit/base	current	history 1	history 2
No corrective action is recommended at this inter- Resample at the next service interval to monitor. Simple Date Citent Info 13.021 13.883 13.025   Machine Age hrs Citent Info 13.021 13.883 13.025   Contamination Free is no indicator of sanithy remaining in the oil. NoRMAL </th <th>Recommendation</th> <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>GFL0083632</th> <th>GFL0074567</th> <th>GFL0066909</th>	Recommendation	Sample Number		Client Info		GFL0083632	GFL0074567	GFL0066909
Resample at the next service interval to monitor.   Year   All component wear rates are normal.   Cilent Info   13983   13025     Contamination   Cinent info   S99   9169   9189   010     Peril content negligible. There is no indicator of any contamination in the oil.   Cinent info   NORMAL   ATTENTION     Full Condition   The ordination of the oil.   Cinent info   Indivase   Current   Natory     All Component wear rates are normal.   CONTAMINATION   method   Indivase   Current   Natory   Natory     Full Condition   Contractine opp   ASTM 05186   >   6   7   7     Chromium   ppm   ASTM 05186   >   6   7   7     Chromium   ppm   ASTM 05186   >   6   1   1   1     Interval to invitor   ppm   ASTM 05186   >   1   1   1     Corpore   ppm   ASTM 05186   >   1   1   1   1     Corpore   ppm   ASTM 05186   0	No corrective action is recommended at this time.	Sample Date		Client Info		23 Jun 2023	23 Mar 2023	30 Dec 2022
All component wear rates are normal. Coli Changed Client Info Changed Changed NA   Contamination Sample Status Imstass NORMAL ATTENTION   Evel content negligible. There is no indication of any contamination in the oil. CONTAMINATION Imstass Current History 1 Nistory 2   Fuel Condition The Bh result indicates that there is suitable for further service. NC Method Imstass current History 1 Inistory 2   For prom ppm ASIM DSISSin >4 <1	Resample at the next service interval to monitor.	Machine Age	hrs	Client Info		14321	13583	13025
Contamination Fuel continition in the oil. Sample Status NORMAL NORMAL ATTENTION   Fuel condition in the oil. Contraction in the oil. Contraction Need NEG NEG   Fuel condition in the oil. The or souldable alkalinity remaining in the oil. The condition of the oil is suitable for further service. NEG NEG NEG NEG   Find Contraction of the oil. The or motion of the oil is suitable for further service. NER NEG NEG NEG NEG NEG   Find Sitts Sample Status method finitions Current history 1 history 2   In on ppm ASTM 05158m >1 <1	Wear	Oil Age	hrs	Client Info		599	9189	9189
Contamization Sample Status NORMAL NORMAL ATTENTION   Fuel content negligible. There is no indication at yoontamination in the oil. CONTAMINATION method imm(base current history 1 history 2   Fuel Containion The Dr sculi indicates that there is suitable alkalinity remaining in the oil. The condition of the alkalinity remaining in the oil. The condition of the alkalinity remaining in the oil. The condition of the alkalinity remaining in the oil. The condition of the alkalinity remaining in the oil. The condition of the condition of the alkalinity remaining in the oil. The condition of the conditin of the condition of the condition of the co	All component wear rates are normal.	Oil Changed		Client Info		Changed	Changed	N/A
any contraination in the oil.   CONTRAMINATION   Instruct of indicases   Current   Instruct of indicases     Fluid Condition   Fluid Condition of the oil insuitable for further service.   WEAR METALS   NEG   NEG     Iron   ppm   ASTM D5186n   >165   6   7   7     Chromium   ppm   ASTM D5186n   >165   6   7   7     Chromium   ppm   ASTM D5186n   >2   1   0   0     Nickel   ppm   ASTM D5186n   >2   1   0   0   1     Nickel   ppm   ASTM D5186n   >2   0   1   1   1     Lead   ppm   ASTM D5186n   >20   0   1   -1   1     Copper   ppm   ASTM D5186n   >50   1   -1   -1   -1     Vanadium   ppm   ASTM D5186n   5   1   0   0   0   0   0   0   0   0   0   0   0   0   0 <th>Contamination</th> <td>Sample Status</td> <td></td> <td></td> <td></td> <td>-</td> <td>NORMAL</td> <td>ATTENTION</td>	Contamination	Sample Status				-	NORMAL	ATTENTION
Fund Condition   Gigcol   WC Method   NEG   NEG   NEG     The BN result indicates that there is suitable dialinity remaining in the oil. The condition of the adialinity remaining in the oil. The condition of the conditis of the condition of the condition of the condition of the condi	Fuel content negligible. There is no indication of any contamination in the oil.	CONTAMINAT	ION	method	limit/base	current	history 1	history 2
UNEAR METALS   method   initiabase   current   History 1   History 2     from   ppm   ASTM 25185m   >16.5   6   7   7     Chromium   ppm   ASTM 25185m   >16.5   6   7   7     Chromium   ppm   ASTM 25185m   >4.1   <1	•	Glycol		WC Method		NEG	NEG	NEG
iron ppm ASTN 05186m >6 7 7   Chrominum ppm ASTN 05186m >5 <1	The BN result indicates that there is suitable	WEAR METAL	S	method	limit/base	current	history 1	history 2
Nickel ppm ASTM D5185m >4 <1 0 0   Tittanium ppm ASTM D5185m >2 <1	oil is suitable for further service.	Iron	ppm	ASTM D5185m	>165	6	7	7
Titanium ppm ASTM D518m >2 <1 0 0   Silver ppm ASTM D518m >20 0 1 1   Aluminum ppm ASTM D518m >20 0 1 1   Lead ppm ASTM D518m >10 <1		Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Silver ppm ASTM D5185m >2 0 0 1   Aluminum ppm ASTM D5185m >20 0 1 1   Lead ppm ASTM D5185m >20 1 <1 1   Copper ppm ASTM D5185m >20 1 <1 <1 1   Tin ppm ASTM D5185m >5 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1		Nickel	ppm	ASTM D5185m	>4	<1	0	0
Aluminum ppm ASTM D5185m >20 0 1 1   Lead ppm ASTM D5185m >150 1 <1		Titanium	ppm	ASTM D5185m	>2	<1	0	0
Lead ppm ASTM D5185m >10 <1		Silver	ppm	ASTM D5185m	>2	0	0	1
Copper   ppm   ASTM D5185m   >90   1   <1   <1     Tin   ppm   ASTM D5185m   >5   <1		Aluminum	ppm	ASTM D5185m	>20	0	1	1
Tin ppm ASTM D5185m >5 <1		Lead	ppm	ASTM D5185m	>150	1	<1	1
Vanadium   ppm   ASTM D5185m   0   0   0     Cadmium   ppm   ASTM D5185m   <1		Copper	ppm	ASTM D5185m	>90	1	<1	<1
Cadmium ppm ASTM D5185m <1 0 0   ADDITIVES method limit/base current history 1 history 2   Boron ppm ASTM D5185m 0 11 3 7   Barium ppm ASTM D5185m 0 <1 0 0   Molybdenum ppm ASTM D5185m 0 <1 1 3 7   Manganese ppm ASTM D5185m 0 <1 1 0 0   Calcium ppm ASTM D5185m 1010 733 868 820   Calcium ppm ASTM D5185m 1070 1091 1101 1137   Phosphorus ppm ASTM D5185m 1150 911 984 906   Zinc ppm ASTM D5185m 1270 1140 1189 1136   Sulfur ppm ASTM D5185m 120 21 21 4   Potassium ppm ASTM D5185m 55 5 4 5   Sodium ppm ASTM D5185m		Tin	ppm	ASTM D5185m	>5	<1	<1	<1
ADDITIVES   method   limit/base   current   history 1   history 2     Boron   ppm   ASTM D5185m   0   11   3   7     Barium   ppm   ASTM D5185m   0   <1		Vanadium	ppm	ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 0 11 3 7   Barium ppm ASTM D5185m 0 -1 0 0   Molybdenum ppm ASTM D5185m 60 60 60 57   Manganese ppm ASTM D5185m 0 -1 -1 -1   Magnesium ppm ASTM D5185m 1010 793 868 820   Calcium ppm ASTM D5185m 1010 793 868 820   Calcium ppm ASTM D5185m 1070 1091 1101 1137   Phosphorus ppm ASTM D5185m 1270 1140 1189 1136   Sulfur ppm ASTM D5185m 122 114 4   Potassium ppm ASTM D5185m 2060 3207 3135 3108   INFRA-RED method limit/base current History 1 History 2   Sodium ppm ASTM D5185m 20 2 2 -1   Fuel % ASTM D5185m 2.0		Cadmium	ppm	ASTM D5185m		<1	0	0
Barium ppm ASTM D5185m 0 <1		ADDITIVES		method	limit/base	current	history 1	history 2
Molybdenum ppm ASTM D5185m 60 60 57   Manganese ppm ASTM D5185m 0 <1 <1 <1   Magnesium ppm ASTM D5185m 1010 793 868 820   Calcium ppm ASTM D5185m 1010 793 8668 820   Calcium ppm ASTM D5185m 1070 1091 1101 1137   Phosphorus ppm ASTM D5185m 1070 1091 1104 1189   Zinc ppm ASTM D5185m 1270 1140 1189 1136   Sulfur ppm ASTM D5185m 2060 3207 3135 3108   CONTAMINANTS method imit/base current history 1 history 2   Silicon ppm ASTM D5185m >35 5 4 5   Sodium ppm ASTM D5185m >20 2 2 <1   Potassium ppm ASTM D5185m >20 2 <10 0.3   Inrel % ASTM D5185m		Boron	ppm	ASTM D5185m	0	11	3	7
Marganesse ppm ASTM D5185m 0 <1 <1 <1   Magnesium ppm ASTM D5185m 1010 793 868 820   Calcium ppm ASTM D5185m 1070 1091 1101 1137   Phosphorus ppm ASTM D5185m 1150 911 984 906   Zinc ppm ASTM D5185m 1270 1140 1189 1136   Sulfur ppm ASTM D5185m 2060 3207 3135 3108   CONTAMINANTS method limit/base current history 1 history 2   Silicon ppm ASTM D5185m >35 5 4 5   Sodium ppm ASTM D5185m >20 2 2 <1		Barium	ppm	ASTM D5185m	0	<1	0	0
Magnesium ppm ASTM D5185m 1010 793 868 820   Calcium ppm ASTM D5185m 1070 1091 1101 1137   Phosphorus ppm ASTM D5185m 1150 911 984 906   Zinc ppm ASTM D5185m 1270 1140 1189 1136   Sulfur ppm ASTM D5185m 2060 3207 3135 3108   CONTAMINANTS method limit/base current history 1 history 2   Silicon ppm ASTM D5185m >35 5 4 5   Sodium ppm ASTM D5185m >20 2 2 <1		Molybdenum	ppm	ASTM D5185m	60	60	60	57
Calcium ppm ASTM D5185m 1070 1091 1101 1137   Phosphorus ppm ASTM D5185m 1150 911 984 906   Zinc ppm ASTM D5185m 1270 1140 1189 1136   Sulfur ppm ASTM D5185m 2060 3207 3135 3108   CONTAMINANTS method limit/base current history 1 history 2   Silicon ppm ASTM D5185m >35 5 4 5   Sodium ppm ASTM D5185m >20 2 2 <1		Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 911 984 906   Zinc ppm ASTM D5185m 1270 1140 1189 1136   Sulfur ppm ASTM D5185m 2060 3207 3135 3108   CONTAMINANTS method limit/base current history 1 history 2   Silicon ppm ASTM D5185m >35 5 4 5   Sodium ppm ASTM D5185m >35 5 4 5   Sodium ppm ASTM D5185m >20 2 2 <1   Potassium ppm ASTM D5185m >20 2 2 <1   Fuel % ASTM D5185m >20 2 2 <1   Fuel % ASTM D324 >3.0 0.2 <1.0 0.3   INFRA-RED method limit/base current history 1 history 2   Soot % % 'ASTM D7844 >7.5 0.3 0.3 0.3   INFRA-RED Abs/cm 'ASTM D7624 <th< td=""><th></th><td>Magnesium</td><td>ppm</td><td>ASTM D5185m</td><td>1010</td><td>793</td><td>868</td><td>820</td></th<>		Magnesium	ppm	ASTM D5185m	1010	793	868	820
Zinc ppm ASTM D5185m 1270 1140 1189 1136   Sulfur ppm ASTM D5185m 2060 3207 3135 3108   CONTAMINANTS method limit/base current history 1 history 2   Silicon ppm ASTM D5185m >35 5 4 5   Sodium ppm ASTM D5185m >35 5 4 5   Sodium ppm ASTM D5185m >30 12 <11 4   Potassium ppm ASTM D5185m >20 2 <1 4   Potassium ppm ASTM D5185m >20 2 <1 4   Potassium ppm ASTM D5185m >20 2 <1.0 0.3   INFRA-RED method limit/base current history 1 history 2   Soot % % 'ASTM D7844 >7.5 0.3 0.3 0.3   Nitration Abs/tmm< "ASTM D7624 >20 7.5 7.1 6.9   Sulfation Abs/tmm< "ASTM D7415 >30		Calcium	ppm	ASTM D5185m	1070	1091	1101	1137
Sulfur ppm ASTM D5185m 2060 3207 3135 3108   CONTAMINANTS method limit/base current history 1 history 2   Silicon ppm ASTM D5185m >35 5 4 5   Sodium ppm ASTM D5185m >30 12 <1 4   Potassium ppm ASTM D5185m >20 2 2 <1   Fuel % ASTM D5185m >20 2 2 <1   Fuel % ASTM D5185m >20 2 2 <1   Fuel % ASTM D3524 >3.0 0.2 <1.0 0.3   INFRA-RED method limit/base current history 1 history 2   Soot % % *ASTM D7844 >7.5 0.3 0.3 0.3   Nitration Abs/.tmm *ASTM D7644 >20 7.5 7.1 6.9   Sulfation Abs/.tmm *ASTM D7645 >30 18.6 18.6 17.9   FLUID DEGRADATION method limit/b		Phosphorus	ppm	ASTM D5185m	1150	911	984	906
CONTAMINANTSmethodlimit/basecurrenthistory 1history 2SiliconppmASTM D5185m>35545SodiumppmASTM D5185m>35545PotassiumppmASTM D5185m>2022<1		Zinc	ppm	ASTM D5185m	1270	1140	1189	1136
Silicon ppm ASTM D5185m >35 5 4 5   Sodium ppm ASTM D5185m >35 12 <1 4   Potassium ppm ASTM D5185m >20 2 2 <1   Fuel % ASTM D3524 >3.0 0.2 <1.0 0.3   INFRA-RED method limit/base current history 1 history 2   Soot % % *ASTM D7844 >7.5 0.3 0.3 0.3   Nitration Abs/m *ASTM D7844 >2.0 7.5 7.1 6.9   Sulfation Abs/1mm *ASTM D7415 >30 18.6 18.6 17.9   FLUID DEGRADATION method limit/base current history 1 history 2   Oxidation Abs/.1mm *ASTM D7414 >25 13.7 14.0 12.9		Sulfur	ppm	ASTM D5185m	2060	3207	3135	3108
Sodium ppm ASTM D5185m 12 <1		CONTAMINAN	ITS	method	limit/base	current	history 1	history 2
Potassium ppm ASTM D5185m >20 2 2 <1			ppm		>35		4	5
Fuel % ASTM D3524 >3.0 0.2 <1.0		Sodium	ppm	ASTM D5185m		12	<1	4
INFRA-RED   method   limit/base   current   history 1   history 2     Soot %   %   *ASTM D7844   >7.5   0.3   0.3   0.3     Nitration   Abs/cm   *ASTM D7624   >20   7.5   7.1   6.9     Sulfation   Abs/lm   *ASTM D7415   >30   18.6   18.6   17.9     FLUID DEGRADATION   method   limit/base   current   history 1   history 2     Oxidation   Abs/Imm   *ASTM D7414   >25   13.7   14.0   12.9		Potassium						
Soot %   %   *ASTM D7844   >7.5   0.3   0.3   0.3     Nitration   Abs/cm   *ASTM D7624   >20   7.5   7.1   6.9     Sulfation   Abs/.1mm   *ASTM D7415   >30   18.6   18.6   17.9     FLUID DEGRADATION   method   limit/base   current   history 1   history 2     Oxidation   Abs/.1mm   *ASTM D7414   >25   13.7   14.0   12.9		Fuel	%	ASTM D3524	>3.0	0.2	<1.0	0.3
Nitration   Abs/cm   *ASTM D7624   >20   7.5   7.1   6.9     Sulfation   Abs/.1mm   *ASTM D7415   >30   18.6   18.6   17.9     FLUID DEGRADATION   method   limit/base   current   history 1   history 2     Oxidation   Abs/.1mm   *ASTM D7414   >25   13.7   14.0   12.9		INFRA-RED		method	limit/base	current	history 1	history 2
SulfationAbs/.1mm*ASTM D7415>3018.618.617.9FLUID DEGRADATIONmethodlimit/basecurrenthistory 1history 2OxidationAbs/.1mm*ASTM D7414>2513.714.012.9		Soot %	%	*ASTM D7844	>7.5	0.3	0.3	0.3
FLUID DEGRADATIONmethodlimit/basecurrenthistory 1history 2OxidationAbs/.1mm*ASTM D7414>2513.714.012.9		Nitration	Abs/cm	*ASTM D7624	>20	7.5	7.1	6.9
Oxidation   Abs/.1mm   *ASTM D7414   >25   13.7   14.0   12.9		Sulfation	Abs/.1mm	*ASTM D7415	>30	18.6	18.6	17.9
		FLUID DEGRA		method	limit/base	current	history 1	history 2
		Oxidation	Abs/.1mm	*ASTM D7414	>25	13.7	14.0	12.9
						7.2	8.4	7.7



## **OIL ANALYSIS REPORT**





eb3/21

Vlav3/21

Jul14/22

Dec8/21

20

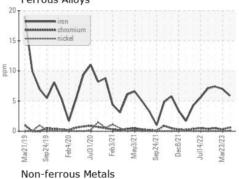
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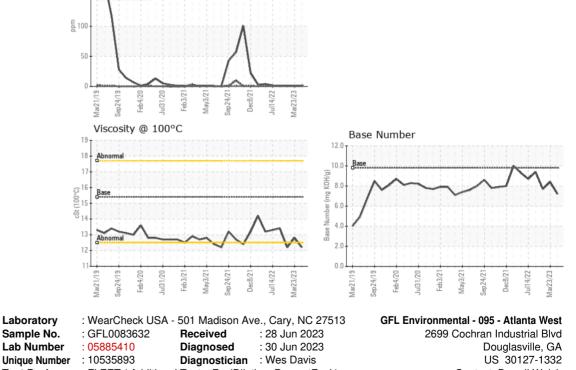
Sep24/21

VISUAL		method	limit/base	current	history 1	history 2
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
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
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	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	15.4	12.2	12.8	<b>1</b> 2.2
GRAPHS						

Ferrous Alloys

lead





Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel) Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - 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)





Mar21/19

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