

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 713014 Component

Fluid

Diesel Engine

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

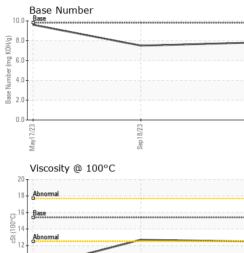
			Ma	1	Sep2023 Nov20	La transit	history O
DIAGNOSIS	SAMPLE INFOR			limit/base		history1	history2
Recommendation	Sample Number		Client Info		GFL0096982	GFL0069767	GFL0069790
Resample at the next service interval to monitor.	Sample Date		Client Info		16 Nov 2023	18 Sep 2023	17 May 2023
Wear	Machine Age	hrs	Client Info		1723	1203	215
All component wear rates are normal.	Oil Age	hrs	Client Info		1203	1203	215
Contamination	Oil Changed		Client Info		Changed	Changed	N/A
There is no indication of any contamination in the	Sample Status				NORMAL	NORMAL	ABNORMAL
oil.	CONTAMINAT	ION	method	limit/base	current	history1	history2
Fluid Condition	Fuel		WC Method	>3.0	<1.0	<1.0	0.4
The BN result indicates that there is suitable	Water		WC Method		NEG	NEG	NEG
alkalinity remaining in the oil. The condition of the oil is suitable for further service.	Glycol		WC Method	20.L	NEG	NEG	NEG
	-	~					
	WEAR METAL	S	method	limit/base	current	history1	history2
	Iron	ppm	ASTM D5185m		13	16	22
	Chromium	ppm	ASTM D5185m		<1	<1	<1
	Nickel	ppm	ASTM D5185m	>5	2	<1	3
	Titanium	ppm	ASTM D5185m	>2	<1	0	<1
	Silver	ppm	ASTM D5185m	>2	0	1	<1
	Aluminum	ppm	ASTM D5185m	>20	2	4	7
	Lead	ppm	ASTM D5185m	>40	<1	0	<1
	Copper	ppm	ASTM D5185m	>330	9	40	13
	Tin	ppm	ASTM D5185m	>15	<1	1	2
	Vanadium	ppm	ASTM D5185m		0	0	0
	Cadmium	ppm	ASTM D5185m		<1	0	0
	ADDITIVES		method	limit/base	current	history1	history2
	Boron	ppm	ASTM D5185m	0	11	17	362
	Barium	ppm	ASTM D5185m	0	10	0	0
	Molybdenum	ppm	ASTM D5185m	60	66	73	124
	Manganese	ppm	ASTM D5185m	0	<1	1	4
	Magnesium	ppm	ASTM D5185m	1010	822	920	611
	Calcium	ppm	ASTM D5185m	1070	1119	1237	1444
	Phosphorus	ppm	ASTM D5185m	1150	982	1012	662
	Zinc	ppm	ASTM D5185m	1270	1133	1263	809
	Sulfur	ppm	ASTM D5185m	2060	3169	3572	2288
	CONTAMINAN	TS	method	limit/base	current	history1	history2
	Silicon	ppm	ASTM D5185m	>25	6	12	1 09
	Sodium	ppm	ASTM D5185m		0	3	<1
	Potassium	ppm	ASTM D5185m	>20	9	10	19
	INFRA-RED		method	limit/base	current	history1	history2
	Soot %	%	*ASTM D7844		0.3	0.3	0.1
	Nitration		*ASTM D7624		7.2	7.3	7.7
	Sulfation		*ASTM D7024		18.7	19.0	25.7
	FLUID DEGRAD	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.3	14.7	20.8
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.8	7.5	9.6



Abnorma

10 8. May17/23

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		VISUAL		method				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
8/23	6/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Sep 18/23	Nov16/23	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	ERTIES	method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445	15.4	12.5	12.7	▲ 9.3
		GRAPHS						
		Ferrous Alloys						
		25 iron						
Sep 18/23		20 - Dickel						
Sel								
	a	15- E						
	2	10						
		5-						
		0						
		May17/23	Sep18/23		Nov16/23			
		av	eb		2			
		S	\$		No			
		Non-ferrous Meta			No			
		Non-ferrous Meta			No			
		Non-ferrous Meta			2			
		Non-ferrous Meta			Na			
		Non-ferrous Meta			Na			
		Non-ferrous Meta			No.			
		Non-ferrous Meta			20			
		Non-ferrous Meta			2			
		Non-ferrous Meta			2			
		Non-ferrous Meta						
		Non-ferrous Meta			lov16/23			
	, and	Non-ferrous Meta	als					
	ana an	Non-ferrous Meta	als			Base Number		
		Non-ferrous Meta	als		Pov(6/23	Base		
		Non-ferrous Meta	als		Pov(6/23	Base		
		Non-ferrous Meta	als		Pov(6/23	Base		
		Non-ferrous Meta	als		Pov(6/23	Base		
	1000er	Non-ferrous Meta	als		Pov(6/23	Base		
		Non-ferrous Meta Copper Lead Copper Lead Non-ferrous Meta Lead Non-ferrous Meta Non-ferrous Meta Lead Non-ferrous Meta Non-ferrous Meta Non-ferr	als		0.01 Per United States (0.01 P	Base		
		Non-ferrous Meta	als		EC291/vol (0/HOX) Bul Jack 4.0 2.0	Base		
		Non-ferrous Meta	nls		10.0 (D)(HQ) (D) (D)(HQ) (D)(HQ) (D) (D)(HQ) (D)(HQ) (D) (D)(HQ) (D)(HQ) (D)(HQ) (D) (D)(HQ) (D)(HQ) (D)(HQ) (D)(HQ) (D) (D)(HQ) (D)(HQ) (Base	23	
		Non-ferrous Meta	nls		10.0 (D)(HQ) (D) (D)(HQ) (D)(HQ) (D) (D)(HQ) (D)(HQ) (D) (D)(HQ) (D)(HQ) (D)(HQ) (D) (D)(HQ) (D)(HQ) (D)(HQ) (D)(HQ) (D) (D)(HQ) (D)(HQ) (Base	ep18/23	
		Non-ferrous Meta Copper Lead Copper Lead Non-ferrous Meta Lead Non-ferrous Meta Non-ferrous Meta Non-ferr	als		EC291/vol (0/HOX) Bul Jack 4.0 2.0	Base	Sep18/23	
	oratory	Non-ferrous Meta Copper Lead Viscosity @ 100° Abnomal Copper Viscosity @ 100° Copper Viscosity @ 100° Copper	Long C C C C C C C C C C C C C C C C C C C		EC/91/00 (0)HOX Bul Jaquiny 2000 EC/91/00 E	EZULIÁRI	onmental - 031 - G	ireenville/Spartanbu
Sam	oratory ple No.	Non-ferrous Meta Copper Lead Viscosity @ 100° Non-ferrous Meta Lead Viscosity @ 100° Non-ferrous Meta Lead	C 501 Madia Received	d : 20 M	10.0 (0)HOX Bul Jaquiny 988 2.0 (0)HOX Bul Jaquiny 988 2.0 (0) (0)HOX Bul Jaquiny 988 (0) (0)HOX Bul Jaquiny 988 (0) (0) (0)HOX Bul Jaquiny 988 (0) (0) (0) (0)HOX Bul Jaquiny 988 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0)	EZULIÁRI	onmental - 031 - G	ireenville/Spartanbu ntioch Church R
Sam Lab	oratory ple No. Number	Non-ferrous Meta Copper Lead Viscosity @ 100° Non-ferrous Meta Lead Non-ferrous Meta Lead Non-ferrous Meta Lead Lead Non-ferrous Meta Lead Non-ferrous Meta Non-ferrous Meta Non-ferrou	C 501 Madia Received Diagnose	d : 20 M ed : 21 M	10.0 (0)НОУ ВО 200 (0)НОУ ВО 200 (0)НОУ ВО 200 (0)НОУ ВО 200 (0) (0)НОУ ВО 200 (0) (0)НОУ ВО 200 (0) (0)НОУ ВО 200 (0) (0)НОУ ВО 200 (0) (0)НОУ ВО 200 (0) (0)НОУ ВО 200 (0) (0) (0) (0) (0) (0) (0) (0) (0) (EZULIÁRI	onmental - 031 - G	i reenville/Spartanbu ntioch Church F Piedmont, S
Sam Lab Unique	oratory ple No. Number ue Number	Non-ferrous Meta Copper Lead Non-ferrous Meta Copper Lead Non-ferrous Meta Copper Lead Non-ferrous Meta Lead Non-ferrous Meta Lead Non-ferrous Meta Lead Non-ferrous Meta Lead Non-ferrous Meta Lead Non-ferrous Meta Lead Non-ferrous Meta Non-ferrous Meta Non-fe	C 501 Madia Received	d : 20 M ed : 21 M	10.0 (0)HOX Bul Jaquiny 988 2.0 (0)HOX Bul Jaquiny 988 2.0 (0) (0)HOX Bul Jaquiny 988 (0) (0)HOX Bul Jaquiny 988 (0) (0) (0)HOX Bul Jaquiny 988 (0) (0) (0) (0)HOX Bul Jaquiny 988 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0)	EZCLIVEW GFL Envir	onmental - 031 - G 1635 Ar	i reenville/Spartanbu htioch Church F Piedmont, S US 2967
KETTER LAGONATORY Uniquertificate L2367 Test	oratory ple No. Number ue Number t Package	Non-ferrous Meta Copper Lead Viscosity @ 100° Non-ferrous Meta Lead Non-ferrous Meta Lead Non-ferrous Meta Lead Lead Non-ferrous Meta Lead Non-ferrous Meta Non-ferrous Meta Non-ferrou	Sol Madia Received Diagnost	d : 20 f ed : 21 f tician : Wes	ту, NC 27513 Nov 2023 s Davis	GFL Envir	onmental - 031 - G 1635 Ar tact: TECHNIC	i reenville/Spartanbu ntioch Church F Piedmont, S