

OIL ANALYSIS REPORT

Sample Rating Trend



Area Active Machine Id 36 Component Diesel Engine

PETRO CANADA DURON SHP 15W40 (10 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.

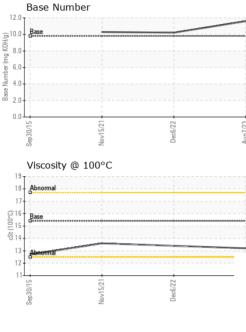
Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0098477	PCA0083408	PCA0059551
Sample Date		Client Info		07 Aug 2023	06 Dec 2022	15 Nov 2021
Machine Age	hrs	Client Info		252606	252606	252606
Oil Age	hrs	Client Info		252606	252606	252606
Oil Changed		Client Info		N/A	N/A	N/A
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	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>100	17	30	42
Chromium	ppm	ASTM D5185m	>20	<1	<1	2
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	<1	2	5
Lead	ppm	ASTM D5185m	>40	3	1	1
Copper	ppm	ASTM D5185m	>330	7	4	19
Tin	ppm	ASTM D5185m	>15	1	1	<1
Antimony	ppm	ASTM D5185m				0
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 0	history1 8	history2 10
	ppm ppm	ASTM D5185m	0	0 0		
Boron Barium Molybdenum		ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 60	8 0 62	10 0 59
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 60 2	8 0 62 <1	10 0 59 <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	0 0 60 2 858	8 0 62 <1 1020	10 0 59 <1 898
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	0 0 60 2 858 952	8 0 62 <1 1020 1175	10 0 59 <1 898 1081
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	0 0 60 2 858 952 913	8 0 62 <1 1020 1175 1036	10 0 59 <1 898 1081 950
Boron 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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270	0 0 60 2 858 952 913 1151	8 0 62 <1 1020 1175 1036 1323	10 0 59 <1 898 1081 950 1140
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	0 0 60 1010 1070 1150 1270 2060	0 0 60 2 858 952 913	8 0 62 <1 1020 1175 1036	10 0 59 <1 898 1081 950 1140 2609
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	0 0 60 2 858 952 913 1151	8 0 62 <1 1020 1175 1036 1323	10 0 59 <1 898 1081 950 1140
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 method	0 0 60 1010 1070 1150 1270 2060	0 0 60 2 858 952 913 1151 3393 current 4	8 0 62 <1 1020 1175 1036 1323 3496 history1 4	10 0 59 <1 898 1081 950 1140 2609 history2 8
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 ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	0 0 60 2 858 952 913 1151 3393 current 4 6	8 0 62 <1 1020 1175 1036 1323 3496 history1 4 <1	10 0 59 <1 898 1081 950 1140 2609 history2 8 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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 0 1010 1070 1150 1270 2060 limit/base >25	0 0 60 2 858 952 913 1151 3393 current 4	8 0 62 <1 1020 1175 1036 1323 3496 history1 4	10 0 59 <1 898 1081 950 1140 2609 history2 8
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 limit/base >25	0 0 60 2 858 952 913 1151 3393 current 4 6 4 4 current	8 0 62 <1 1020 1175 1036 1323 3496 history1 4 <1 2 history1	10 0 59 <1 898 1081 950 1140 2609 history2 8 2 4 4
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 limit/base >20	0 0 60 2 858 952 913 1151 3393 current 4 6 4 current 0.2	8 0 62 <1 1020 1175 1036 1323 3496 history1 4 <1 2 history1 0.3	10 0 59 <1 898 1081 950 1140 2609 history2 8 2 4 history2 0.2
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 TS 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	0 0 60 2 858 952 913 1151 3393 current 4 6 4 current 0.2 8.3	8 0 62 <1 1020 1175 1036 1323 3496 history1 4 <1 2 history1 0.3 9.5	10 0 59 <1 898 1081 950 1140 2609 history2 8 2 4 4 history2 0.2 8.1
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 limit/base >20	0 0 60 2 858 952 913 1151 3393 current 4 6 4 current 0.2	8 0 62 <1 1020 1175 1036 1323 3496 history1 4 <1 2 history1 0.3	10 0 59 <1 898 1081 950 1140 2609 history2 8 2 4 history2 0.2
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 t 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	0 0 60 2 858 952 913 1151 3393 current 4 6 4 current 0.2 8.3	8 0 62 <1 1020 1175 1036 1323 3496 history1 4 <1 2 history1 0.3 9.5	10 0 59 <1 898 1081 950 1140 2609 history2 8 2 4 4 history2 0.2 8.1
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20	0 0 60 2 858 952 913 1151 3393 current 4 6 4 6 4 current 0.2 8.3 20.8	8 0 62 <1 1020 1175 1036 1323 3496 history1 4 <1 2 history1 0.3 9.5 23.1	10 0 59 <1 898 1081 950 1140 2609 history2 8 2 4 4 history2 0.2 8.1 20
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 TS ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 /////////////////////////////////	0 0 60 2 858 952 913 1151 3393 current 4 6 4 6 4 0.2 8.3 20.8 current	8 0 62 <1 1020 1175 1036 1323 3496 history1 4 <1 2 history1 0.3 9.5 23.1 history1	10 0 59 <1 898 1081 950 1140 2609 history2 8 2 4 4 history2 0.2 8.1 20 history2



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	
Dec6/22	Appearance Odor	scalar	*Visual	NORML	NORML	NORML	NORML	
De	Odor		*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	cSt	ASTM D445	15.4	13.2	13.4	13.6	
	GRAPHS							
	Iron (ppm)			,- 100	Lead (ppm)			
- 22	200 Severe			80	Severe			
Dec6/22	= 150-			60				
	150 100 - Abnormal			ed 40	Abnormal			
	50-		1	20				
	0		2	0		2		
	Sep 30/15 Nov15/21		Dec6/22	Aug7/23	Sep 30/15	00/15/21	C (2)	
	ø ≥ Aluminum (ppm)			4	⁸ Chromium (pp	_	<	
	⁵⁰ T			50	T :	····,		
	40			40	Severe	I I		
	E 20 Abnormal			E 20	Abnormal			
					1			
	10			10				
	Sep30/15		Dec6/22 -	Aug7/23	Sep30/15	00V15/21-	CGLETTY	
	Sep3		Dec	Aug	Sep3	Dec		
	Copper (ppm)				Silicon (ppm)			
	400 Severe			80	Severe			
	300 -			60				
	툞 200 -			<u></u> 40				
	100-			20	Abnormal			
	0			0				
	Sep 30/15		Dec6/22	Aug7/23	Sep30/15	00V15/21	CC EV	
			De De	Aug	Sep		~ ~	
	Viscosity @ 100°C			12.0	Base Number			
	18 Abnormal		1	。 音10.0	Base	-		
	T			(B/HO) B 8.0 Jack Kink B 8.0 Jack Kink B 8.0 Jack Kink B 8.0 Jack Kink B 8.0 Jack Kink B 8.0 Jack Kink B 8.0 Jack Kink Jack Kink B 8.0 Jack Kink Jack Kink Jac				
	0016 Base				• • • • • • • • • • • • • • • • • • • •			
	12 Abnormal			2 4.0 2 2.0				
	10		2	0.0		5		
	Sep 30/15 Nov15/21		Dec6/22	Aug7/23	Sep30/15	00V15/21	C C E E E E E E E E E E E E E E E E E E	
Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : PCA0098477 Lab Number : 05920791 Diagnosed : 11 Aug 2023 Unique Number : 10592705 Test Package : MOB 2 I discuss this sample report, contact Customer Service at 1-800-237-1369.						FEDI MIX SERVICE: 120 BERKLEY S TAUNTON, M US 0278 Contact: HENRY HOLLE! hholler@glopes.cor T		