

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **Hurricane Creek 3** Component

Natural Gas Engine

PETRO CANADA SENTRON LD 3000 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

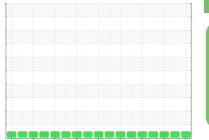
All component wear rates are normal.

Contamination

Fuel content negligible. 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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



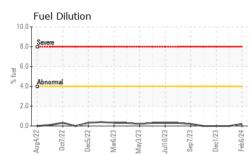


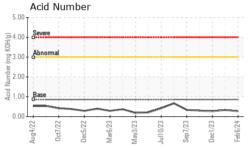
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2		
Sample Number		Client Info		PCA0091334	PCA0091328	PCA0091326		
Sample Date		Client Info		06 Feb 2024	02 Jan 2024	01 Dec 2023		
Machine Age	hrs	Client Info		143213	142385	141610		
Oil Age hrs		Client Info		3828	0	2225		
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd		
Sample Status				NORMAL	NORMAL	NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2		
Water		WC Method	>0.1	NEG	NEG	NEG		
WEAR METAL	S	method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>50	0	<1	0		
Chromium	ppm	ASTM D5185m	>4	0	0	0		
Nickel	ppm	ASTM D5185m	>2	0	0	0		
Titanium	ppm	ASTM D5185m		0	0	0		
Silver	ppm	ASTM D5185m	>3	0	0	0		
Aluminum	ppm	ASTM D5185m	>9	1	2	<1		
Lead	ppm	ASTM D5185m	>30	<1	0	0		
Copper	ppm	ASTM D5185m	>35	0	<1	0		
Tin	ppm	ASTM D5185m	>4	<1	0	0		
Vanadium	ppm	ASTM D5185m		0	0	0		
Cadmium	ppm	ASTM D5185m		0	0	0		
ADDITIVES		method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m	5	0	0	0		
Barium	ppm	ASTM D5185m	1	0	0	0		
Molybdenum	ppm	ASTM D5185m	2	0	<1	0		
N 4		AOTH DELOS	1	<1	0	0		
Manganese	ppm	ASTM D5185m	1	~ •	0	0		
Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	5	10	10	11		
•								
Magnesium	ppm	ASTM D5185m	5	10	10	11		
Magnesium Calcium	ppm ppm	ASTM D5185m ASTM D5185m	5 1220	10 1215	10 1300	11 1263		
Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	5 1220 298	10 1215 290	10 1300 312	11 1263 279		
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 1220 298 350	10 1215 290 338	10 1300 312 338	11 1263 279 351		
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 1220 298 350 1995	10 1215 290 338 2297	10 1300 312 338 2362	11 1263 279 351 2369		
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	5 1220 298 350 1995 limit/base >+100	10 1215 290 338 2297 current	10 1300 312 338 2362 history1	11 1263 279 351 2369 history2		
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 1220 298 350 1995 limit/base >+100	10 1215 290 338 2297 current 1	10 1300 312 338 2362 history1 2	11 1263 279 351 2369 history2 2		
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 1220 298 350 1995 limit/base >+100 >20	10 1215 290 338 2297 current 1 1	10 1300 312 338 2362 history1 2 0	11 1263 279 351 2369 history2 2 0		
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 1220 298 350 1995 limit/base >+100 >20 >20	10 1215 290 338 2297 <u>current</u> 1 1 1	10 1300 312 338 2362 history1 2 0 2	11 1263 279 351 2369 history2 2 0 0		
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524	5 1220 298 350 1995 limit/base >+100 >20 >20 >20 >20	10 1215 290 338 2297 current 1 1 1 1 1 0.2	10 1300 312 338 2362 history1 2 0 2 0 2 0.0	11 1263 279 351 2369 history2 2 0 0 0 0		
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524	5 1220 298 350 1995 limit/base >+100 >20 >20 >20 >4.0	10 1215 290 338 2297 current 1 1 1 1 0.2 current	10 1300 312 338 2362 history1 2 0 2 0.0 2 0.0 history1	11 1263 279 351 2369 history2 2 0 0 0 0 0 0.0 history2		
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm TS ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524	5 1220 298 350 1995 limit/base >+100 >20 >20 >20 >4.0	10 1215 290 338 2297 current 1 1 1 1 0.2 current 0	10 1300 312 338 2362 history1 2 0 2 0.0 2 0.0 history1 0	11 1263 279 351 2369 history2 2 0 0 0 0.0 history2 0		
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm % % Abs/tmm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 ASTM D3524 *ASTM D7844 *ASTM D7624	5 1220 298 350 1995 imit/base >+100 >20 >20 >20 >4.0 imit/base	10 1215 290 338 2297 current 1 1 1 1 0.2 current 0 3.4	10 1300 312 338 2362 history1 2 0 2 0.0 2 0.0 history1 0 3.5	11 1263 279 351 2369 history2 2 0 0 0.0 history2 0 3.4		
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm % % Abs/tmm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 ASTM D3524 *ASTM D7844 *ASTM D7624	5 1220 298 350 1995 Imit/base >+100 >20 >20 >20 >4.0 Imit/base >15 >25	10 1215 290 338 2297 current 1 1 1 1 0.2 current 0 3.4 14.0	10 1300 312 338 2362 history1 2 0 2 0.0 2 0.0 history1 0 3.5 13.9	11 1263 279 351 2369 history2 2 0 0 0.0 history2 0 3.4 14.0		
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm % % Abs/cm Abs/.1mm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 ASTM D3524 ASTM D7844 *ASTM D7624 *ASTM D7415	5 1220 298 350 1995 imit/base >20 >20 >20 >20 >4.0 imit/base >15 >25	10 1215 290 338 2297 current 1 1 1 1 0.2 current 0 3.4 14.0 current 7.8	10 1300 312 338 2362 history1 2 0 2 0.0 2 0.0 history1 0 3.5 13.9 history1 7.8	11 1263 279 351 2369 history2 2 0 0 0 0.0 history2 0 3.4 14.0 history2		
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm % % Abs/cm Abs/cm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	5 1220 298 350 1995 imit/base >20 >20 >20 >4.0 imit/base >25 imit/base	10 1215 290 338 2297 current 1 1 1 1 0.2 current 0 3.4 14.0 current	10 1300 312 338 2362 history1 2 0 2 0.0 2 0.0 history1 0 3.5 13.9 history1	11 1263 279 351 2369 history2 2 0 0 0.0 0 0.0 history2 0 3.4 14.0 history2 7.8		

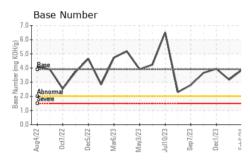
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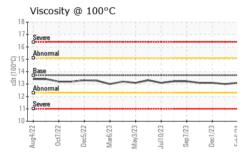


OIL ANALYSIS REPORT









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						VISUAL			metho	d	limit/ba	se	curre	ent	l	histor	y1	ł	nistory	/2
						White Metal		scalar	*Visual		NONE		NONE		N	ONE		N	DNE	
ł						Yellow Metal		scalar	*Visual		NONE		NONE		N	ONE		N	DNE	
						Precipitate		scalar	*Visual		NONE		NONE		N	ONE		N	DNE	
			Silt		scalar *Visual			NONE		NONE		NONE			NONE					
	Debris		Debris		scalar	*Visual		NONE NONE		NONE		NONE			NONE					
-		Sand/Dirt			scalar							NONE			NONE					
Mar6/23	May3/23	Jul10/23	Sep7/23	Dec1/23	Feb6/24	Appearance		scalar	*Visual		NORML		NORM	L	N	ORMI	_	N	ORML	-
Ma	Mar	յոլ	Sel	Dei	Fel	Odor		scalar	*Visual		NORML		NORM	L	N	ORMI	-	NC	ORML	-
						Emulsified W	ater	scalar	*Visual		>0.1		NEG		N	EG		NE	ĒĠ	
						Free Water		scalar	*Visual				NEG		N	EG		NE	EG	
						FLUID PI					limit/ba	se	curre	ent		histor	y1		nistory	/2
						Visc @ 100°		cSt	ASTM D4	145	13.7		13.1		13	3.0		13	.1	
						GRAPHS														
-	~	-	$\overline{}$		_	Iron (ppm)) 					⁶⁰ T	Lead (p	om)						
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	an a	1	1			Aluminum	(ppm)						Chromiu	ım (p	pm)					
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						15 - Severe						6 -	Severe							
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						Aug	Mar	May	Sep	Dec	Feb		Aug	Dec	Mar	May	Jul	Sep	Dec	Feb
-						Copper (pr	om)						Silicon (ppm)						
						80 Severe							Severe							
-						60						150-								
						Abnormal				-		툡 100 -	Abnormal							
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						Viscosity @		~	-,				Base Nu			~	7			
						¹⁸ T	100 0					0.0		mber						
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						Abnormal 14 Base Abnormal						u 4.0 -	Base	A	1	1	\Box			
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						Severe						Bas			1			ł	1	
						Aug4/22	Mar6/23 +	May3/23	Jul10/23 -	Dec1/23 -	Feb6/24	0.0L	Aug4/22 + 0ct7/22 +	Dec5/22 -	Mar6/23 -	3/23 -	0/23 -	Sep7/23	Dec1/23 -	Feb6/24
						Aug	Mari	May	Sep	Dec	Feb		Aug	Dec	Man	May3/23	Jul10/23	Sep	Dec	Febl
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Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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