

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id GZJ00314 Component

Biogas Engine

PETRO CANADA SENTRON CG 40 (145 GAL)

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		szuzz Marzu	LE MINYLULL JUNLULL	Jul2022 Aug2022 Oct2022		
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0698992	WC0698990	WC0698993
Sample Date		Client Info		12 Dec 2022	05 Dec 2022	28 Nov 2022
Machine Age	hrs	Client Info		119362	119189	119020
Oil Age	hrs	Client Info		101	928	759
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	ABNORMAL	ABNORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>45	3	10	9
Chromium	ppm	ASTM D5185m	>2	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>10	3	4	2
Lead	ppm	ASTM D5185m	>5	2	1	2
Copper	ppm	ASTM D5185m	>14	1	4	4
Tin	ppm	ASTM D5185m	>13	2	8	7
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	0	1	1	1
Barium	ppm	ASTM D5185m	1	0	0	0
Molybdenum	ppm	ASTM D5185m	2	1	1	1
Manganese	ppm	ASTM D5185m	1	<1	<1	<1
Magnesium	ppm	ASTM D5185m	9	17	14	17
Calcium	ppm	ASTM D5185m	2712	2826	3337	2973
Phosphorus	ppm	ASTM D5185m	292	293	309	306
Zinc	ppm	ASTM D5185m	342	337	406	356
Sulfur	ppm	ASTM D5185m	2575	3494	4199	3692
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>200	100	4 46	4 348
Sodium	ppm	ASTM D5185m		<1	<1	<1
Potassium	ppm	ASTM D5185m	>20	0	1	0
Fuel	%	ASTM D3524	>4.0	0.3	0.3	0.3
INFRA-RED		method	limit/base	current	history1	history2
	%	*ASTM D7844		0.1	0.1	0.1
Soot %	70					
Soot % Nitration	Abs/cm	*ASTM D7624	>20	5.0	6.9	6.7
		*ASTM D7624 *ASTM D7415	>20 >30	5.0 17.5	6.9 24.6	6.7 23.8
Nitration	Abs/cm Abs/.1mm					
Nitration Sulfation	Abs/cm Abs/.1mm	*ASTM D7415	>30 limit/base	17.5	24.6	23.8
Nitration Sulfation FLUID DEGRADA Oxidation	Abs/cm Abs/.1mm TION Abs/.1mm	*ASTM D7415 method	>30 limit/base	17.5 current 9.7	24.6 history1	23.8 history2
Nitration Sulfation FLUID DEGRADA	Abs/cm Abs/.1mm	*ASTM D7415 method *ASTM D7414	>30 limit/base >25	17.5 current	24.6 history1 16.3	23.8 history2 14.9

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Total oil added 10 gal)

Fluid

Wear

All component wear rates are normal.

Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

Fluid Condition

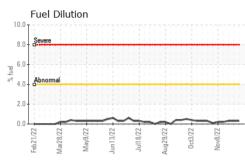
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

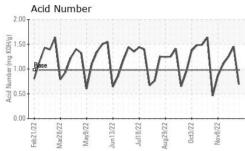
Submitted By: Blain Middleton

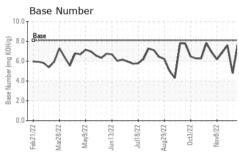
Page 1 of 2

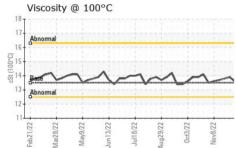


OIL ANALYSIS REPORT









		VISUAL		method	limit/base	current	history1	history2
Precipitate scalar 'Visual NONE NONE NONE NONE NONE NONE NONE NON		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Site scalar Visual NONE NORE NONE NONE NORE NONE NORE		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Debra ccalar Visual NONE NONE NONE NONE NONE NONE NONE SandDirt scalar Visual NORML		Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
SandDirt scalar 'Visual NONE NONE NONE NONE NORML NORMU Apparance scalar 'Visual NORML NORML NORMU NOR		Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Apparance scalar 'Visual NORML		Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Emulsified Water scalar /Visual >0.1 NEG		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Emulsified Water scalar /Visual >0.1 NEG	13/22 18/22 ±3/22 v8/22	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Free Water is calar "Visual NEG	Jul Dug No No	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
ELUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C csi ASTM D445 13.5 13.6 13.9 13.8 Image: State of the sta		Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Visc @ 100°C CSL ASTM D445 13.5 13.6 13.9 13.8 GRAPHS Tron (ppm) GRAPHS Tron (ppm)	111111111111111111111111111111111111111	Free Water	scalar	*Visual		NEG	NEG	NEG
GRAPHS Tron (ppm) GRAPHS Tron (ppm) GRAPHS	$1 \sim 1 \sim 1 \sim 1$	FLUID PROPERT	ΓIES	method	limit/base	current	history1	history2
Laboratory I: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. Lab Number Sample No. La	Γ	Visc @ 100°C	cSt	ASTM D445	13.5	13.6	13.9	13.8
 Horstory WearCheck USA - 501 Madison Ave, Cary, NC 27513 Sample No. Lab Number: 105718984 WearCheck USA - 501 Madison Ave, Cary, NC 27513 Test Package: 10285500 Bise Number: 105718984 Test Package: 10285500 Bise 2022 Bise 2023 Bise 2024 Bise 2024<th>VVVVI</th><th>GRAPHS</th><th></th><th></th><th></th><th></th><th></th><th></th>	VVVVI	GRAPHS						
 Laboratory WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel) Diagnosed : 19 Dec 2022 Diagnosed : 19 Dec 2022 Diagnosed : 19 Dec 2022 		Iron (ppm)				Lead (ppm)		
Aluminum (ppm)		Severe			10 10 10 10	Severe		
Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: Sample	113/22 118/22 ct3/22 w8/22					8		
Laboratory :: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: Liboratory :: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: Liboratory :: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Test Package :: NOB 2 (Additional Tests: FuelDilution, PercentFuel)	Ju Ju Nc	Abnormal			L L L L L L L L L L L L L L L L L L L	Abnormal		
Liboratory Sample No. Sample No. Streame Sample No. Streame Sample No. Streame Sample No. Streame Sample No. Streame Streame Streame Streame Sample No. Streame Stream		**				m	~~	m
Aluminum (ppm) Aluminum (ppm)			8/22	3/22	177/0	8/22 9/22	3/22	3/22
Laboratory :: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. :: WC0593992 :: Received :: 15 Dec 2022 Lab Number :: 10258560 Diagnosed :: 19 Dec 2022 Nice Number :: 1057 Nice A : 4000-237-1368.	MUM	Feb21 Mar/2 Mar/5	Jult	Aug2	0A ON	Feb2' Mar28 May9	Jun13 Jul18 Aug28	Octi Novi
Laboratory Sample Rook Starber 10258560 Diagnosed : 19 Dec 2022 Angela Borelia Te discuss this sample report, contact Customer Service at 1-800-237-1380.	V	Aluminum (ppm)				Chromium (pp	om)	
Laboratory Sample No. Laboratory Sample No. Sample		20 Severe					100000000000000000000000000000000000000	100500030000
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Interview of the sample Road State Stat	22 - 22	톱 10 - Abnormal			mdd	Abnormal		
Comper (ppm) Copper (ppm) Co	Jun13, Jul18, Oct3/ Nov8/	5						
Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: Laboratory : UCOS98992 : Received : 15 Dec 2022 Lab Number : 10258560 Diagnosed : 19 Dec 2022 Angela Borella Tested : 19 Dec 2022 Angela Borella Tested : 19 Dec 2022 Angela Borella Tested : 19 Dec 2022 Angela Borella Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel) To discuss this sample report, contact Customer Service at 1-800-237-1369.			\frown	\sim	~		$\sim\sim\sim$	\sim
 Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: WC0698992 : Received : 15 Dec 2022 Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - Angela Borella Mumber : 10258560 : Diagnosed : 19 Dec 2022 - An	۳ ۵		18/22	t3/22			13/22	t3/22 /8/22
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Laboratory :: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. :: WC06989992 :: Received :: 15 Dec 2022 Angela Borella Diagu Number :: 10258360 :: Diagnosed :: 19 Dec 2022 Angela Borella Test Package :: MOB 2 (Additional Tests: FuelDilution, PercentFuel) : To discuss this sample report, contact Customer Service at 1-800-237-1369.	******	20						
Laboratory :: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : WC0698992 :: Received :: 15 Dec 2022 Inique Number :: 05718984 :: Feelol Dilution, PercentFuel) To discuss this sample report, contact Customer Service at 1-800-237-1369.		Devolu				here here here here	_1	
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Viscosity @ 100°C Viscosity @ 1	un 13/2 ug 29/2 0ct3/2. Vov8/2:		\sim				2	2
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Image: Second				Au	Z		Ju Ju Auç	N C
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Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 FINLEY BIOENERGY Sample No. : WC0698992 Received : 15 Dec 2022 74265 Bombing Range Road Lab Number : 05718984 Tested : 19 Dec 2022 Boardman, OF Unique Number : 10258560 Diagnosed : 19 Dec 2022 - Angela Borella US 97818 Certificate 12367 Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel) Contact: Blain Middletor To discuss this sample report, contact Customer Service at 1-800-237-1369. Diagnosed : bit of the second secon		10 22	22 -	22 -	0.0		22 +	22 -
Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 FINLEY BIOENERGY Sample No. : WC0698992 Received : 15 Dec 2022 74265 Bombing Range Road Lab Number : 05718984 Tested : 19 Dec 2022 Boardman, OF Unique Number : 10258560 Diagnosed : 19 Dec 2022 - Angela Borella US 97818 Certificate L2367 Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel) Contact: Blain Middletor To discuss this sample report, contact Customer Service at 1-800-237-1369. Diagnosed : bit of the sample report, contact Customer Service at 1-800-237-1369.		Feb21// Mar28// May9//	Jul18/,	Aug29/ 0ct3//	INO VO/	Feb21/ Mar28/. May9/2	Jun13/ Jul18//	Oct3/ Nov8/
Lab Number <th:05718984< th="">Tested: 19 Dec 2022Boardman, OFUnique Number: 10258560Diagnosed: 19 Dec 2022 - Angela BorellaUS 97818Certificate L2367Test Package: MOB 2 (Additional Tests: FuelDilution, PercentFuel)Contact: Blain MiddletorTo discuss this sample report, contact Customer Service at 1-800-237-1369.: 19 Dec 2022 - Angela BorellaDiagnosed</th:05718984<>		: WearCheck USA - 50	1 Madiso	⊲ on Ave., Cary	, NC 27513	~ < -	FINLE	BIOENERGY
Certificate L2367 Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel) Contact: Blain Middletor To discuss this sample report, contact Customer Service at 1-800-237-1369. bmiddleton@archaea.energy	Lab Numbe	er : 05718984	Teste					Boardman, OR
To discuss this sample report, contact Customer Service at 1-800-237-1369. bmiddleton@archaea.energy			•	Diagnosed : 19 Dec 2022 - Angela Borella				US 97818

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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