

OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id SJNM02BE Component Biogas Engine Fluid CHEVRON HDAX 9500 GAS ENGINE OIL 40 (--- 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.

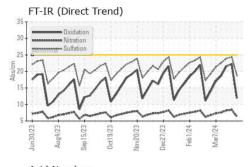
Fluid Condition

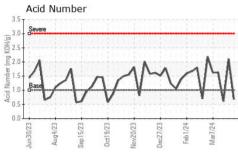
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

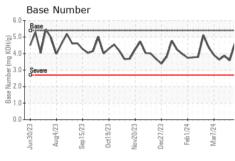
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0865720	WC0865723	WC0865751
Sample Date		Client Info		04 Apr 2024	28 Mar 2024	21 Mar 2024
Machine Age	hrs	Client Info		115295	115128	114960
Oil Age	hrs	Client Info		167	1000	832
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	SEVERE	ABNORMAL
CONTAMINATION	J	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method		NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>14	0	2	3
Chromium	ppm	ASTM D5185m	>3	0	<1	0
Nickel	ppm	ASTM D5185m		0	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>5	<1	2	2
Lead	ppm	ASTM D5185m	>8	<1	3	5
Copper	ppm	ASTM D5185m	>5	0	<1	1
Tin	ppm	ASTM D5185m	>3	1	3	4
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		3	4	4
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		4	5	5
Manganese				4	5	J
Magnosium	ppm	ASTM D5185m		4 <1	<1	<1
iviagnesium	ppm ppm	ASTM D5185m ASTM D5185m				
-				<1	<1	<1
Calcium	ppm	ASTM D5185m		<1 30	<1 38	<1 30
Calcium Phosphorus	ppm	ASTM D5185m ASTM D5185m		<1 30 1836	<1 38 2189	<1 30 2146
Calcium Phosphorus Zinc	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		<1 30 1836 273	<1 38 2189 345	<1 30 2146 325
Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	<1 30 1836 273 343	<1 38 2189 345 411	<1 30 2146 325 394 2815
Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >180	<1 30 1836 273 343 1700	<1 38 2189 345 411 2866	<1 30 2146 325 394 2815
Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method		<1 30 1836 273 343 1700	<1 38 2189 345 411 2866 history1	<1 30 2146 325 394 2815 history2
Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	>180	<1 30 1836 273 343 1700 current	<1 38 2189 345 411 2866 history1 ▲ 200	<1 30 2146 325 394 2815 history2
Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m	>180 >20	<1 30 1836 273 343 1700 current 75	<1 38 2189 345 411 2866 history1 200 2	<1 30 2146 325 394 2815 history2 186 2 3
Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m	>180 >20 >20	<1 30 1836 273 343 1700 current 75 1	<1 38 2189 345 411 2866 history1 ▲ 200 2 2	<1 30 2146 325 394 2815 history2 186 2 3
Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	>180 >20 >20	<1 30 1836 273 343 1700 current 75 1 0 current	<1 38 2189 345 411 2866 history1 200 2 2 history1	<1 30 2146 325 394 2815 history2 ▲ 186 2 3 history2
Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method *ASTM D7844	>180 >20 >20	<1 30 1836 273 343 1700 current 75 1 0 current	<1 38 2189 345 411 2866 history1 ▲ 200 2 2 history1 0.1	<1 30 2146 325 394 2815 history2 ▲ 186 2 3 history2 0.1
Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm Abs/.1mm	ASTM D5185m ASTM D7844 *ASTM D7624	>180 >20 >20	<1 30 1836 273 343 1700 current 75 1 0 current 0 6.3	<1 38 2189 345 411 2866 history1 ▲ 200 2 2 history1 0.1 8.4	<1 30 2146 325 394 2815 history2 ▲ 186 2 3 history2 0.1 8.2 23.9
Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D7415	>180 >20 >20 >20 limit/base	<1 30 1836 273 343 1700 current 75 1 0 current 0 6.3 18.8	<1 38 2189 345 411 2866 history1 200 2 2 history1 0.1 8.4 24.4	<1 30 2146 325 394 2815 history2 186 2 3 history2 0.1 8.2
Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm TION	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D7614 *ASTM D7415 Method *ASTM D7414	>180 >20 >20 >20 limit/base	<1 30 1836 273 343 1700 current 75 1 0 current 0 6.3 18.8 current	<1 38 2189 345 411 2866 history1 ▲ 200 2 2 history1 0.1 8.4 24.4 history1	<1 30 2146 325 394 2815 history2 186 2 3 history2 0.1 8.2 23.9 history2

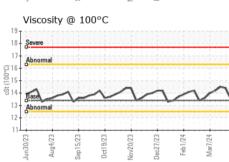


OIL ANALYSIS REPORT









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
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual		NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

FLUID PROPER	HES	metnoa	ilmit/base	current	nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	13.4	13.5	14.4	14.5

Visc @ 100°C	cSt	ASTM D	0445 13.4	13.5	14.4	14.5
GRAPHS						
Iron (ppm)				Lead (ppm)		
Severe				Severe		
5 - Abnormal			1111 1111	10		
0+				Abriomal 5+		
1		. 1	1		NMA	MM
		~~	m		V V	E 2 2
Jun30/23 - Aug4/23 - Sep15/23	Oct19/23 Nov20/23	Dec27/23 Feb1/24	Mar7/24	Jun30/23 - Aug4/23 - Sen15/23	Oct19/23	Dec27/23 Feb1/24 Mar7/24
Aluminum (ppr	-	u		Chromium		
Severe				5 T Severe		
8+						
Abnormal				B 3 - Abnormal		
2-	^			1		
	~ <u>`</u>	~ ~	~~	و کیکی ا		<u></u>
Jun30/23 - Aug4/23 - Sep15/23 -	Oct19/23 Nov20/23	Dec27/23 Feb1/24	Mar7/24	Jun30/23 Aug4/23	Oct19/23	Dec27/23 Feb1/24 Mar7/24
Copper (ppm)	0 2	a	_	Silicon (ppn		
Janaaraa (ppiii)	n yener pro			250		172000000000000000
Severe				200 - Sovere	111	AMA
1				E 150	/ / /	1/1/1
Abnormal					V V	V V 1
~~~	m	~~	^~	50		
//23	1/23	/23	/24	1/23	1/23	/23





Laboratory Sample No.

: WC0865720 Lab Number : 06143247 Unique Number : 10968055

(100°C) 12 14

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received : 09 Apr 2024 **Tested** : 10 Apr 2024 Diagnosed : 10 Apr 2024 - Jonathan Hester

**EDL NA Recips-South Jordan** South Jordan Powerstation, 10473 S. Bacchus Hwy.

South Jordan, UT US 84095 Contact: Aaron Klein

Test Package : MOB 2 Certificate 12367 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)

Viscosity @ 100°C

T: F:

Aug4/

Base Number

aaron.klein@edlenergy.com