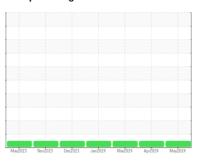


# **OIL ANALYSIS REPORT**

Sample Rating Trend



**NORMAL** 



Machine Id

# **Abner Gap 1**

Natural Gas Engine

CITGO PACEMAKER GAS ENGIN 1700 SERIES 40W (50 GAL)

## DIAGNOSIS

### Recommendation

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

All component wear rates are normal.

### Contamination

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

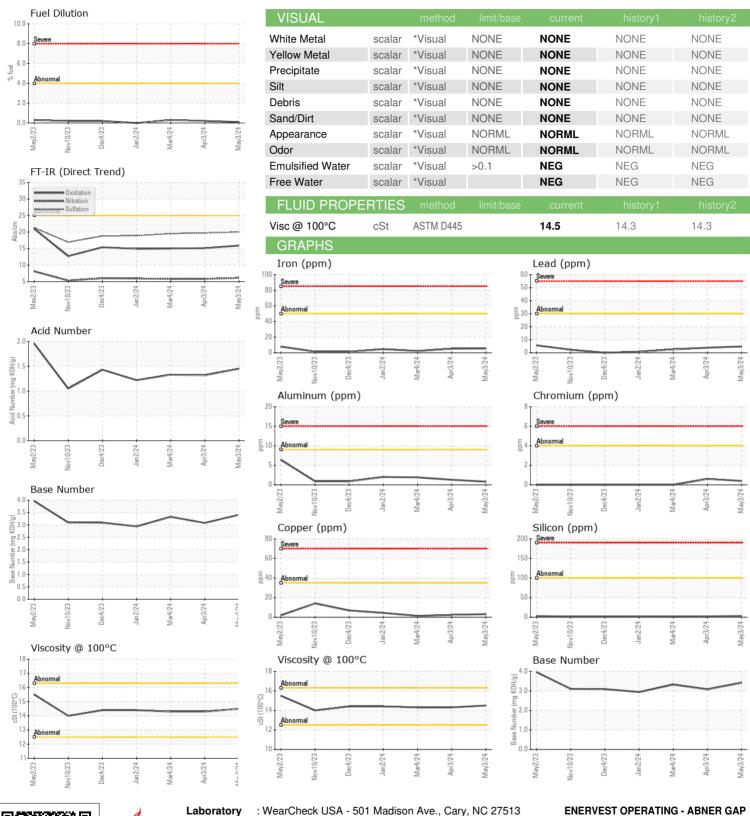
### **Fluid Condition**

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.

Client Info	RIES 40W (50 G/	AL)	May2023	Nov2023 Dec2023	Jan2024 Mar2024 Apr2024	May2024	
Client Info	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date   Client Info   03 May 2024   03 Apr 2024   04 Mar 2024   03 Apr 2024   04 Mar 2024   03 Apr 2024   04 Mar 2024   03 Apr 2024   03 Apr 2024   04 Mar 2024   03 Apr 2024   04 Mar 2024   05 Apr 2024	Sample Number		Client Info		PCA0117227	PCA0111855	PCA0111853
Machine Age   hrs			Client Info		03 May 2024	03 Apr 2024	04 Mar 2024
Oil Age	•	hrs					
Oil Changed   Client Info   Not Changed   NORMAL   NORM	•	hrs	Client Info		0	0	0
CONTAMINATION     method     limit/base     current     history1     history2       Water     WC Method     >0.1     NEG     NEG     NEG       WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >50     6     5     2       Chromium     ppm     ASTM D5185m     >4     <1	-		Client Info		Not Changd	Not Changd	Not Changd
Water     WC Method     >0.1     NEG     NEG     NEG       WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >50     6     5     2       Chromium     ppm     ASTM D5185m     >4     <1	Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >50     6     5     2       Chromium     ppm     ASTM D5185m     >4     -1     -1     0       Nickel     ppm     ASTM D5185m     >2     -1     -1     0       Silver     ppm     ASTM D5185m     >3     0     0     0       Aluminum     ppm     ASTM D5185m     >3     0     0     0       Aluminum     ppm     ASTM D5185m     >9     -1     1     2       Lead     ppm     ASTM D5185m     >9     -1     1     2       Lead     ppm     ASTM D5185m     >35     3     2     1       Tin     ppm     ASTM D5185m     >4     1     2     -1       Vanadium     ppm     ASTM D5185m     >4     1     2     -1       Cadmium     ppm     ASTM D5185m     0     0     0     0 <td>CONTAMINAT</td> <td>ION</td> <td>method</td> <td>limit/base</td> <th>current</th> <td>history1</td> <td>history2</td>	CONTAMINAT	ION	method	limit/base	current	history1	history2
Chromium	Water		WC Method	>0.1	NEG	NEG	NEG
Chromium     ppm     ASTM D5185m     >4     <1     <1     0       Nickel     ppm     ASTM D5185m     >2     <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>50	6	5	2
Titanium	Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Silver	Nickel	ppm	ASTM D5185m	>2	<1	<1	0
ASTM D5185m   Symbol	Titanium	ppm	ASTM D5185m		<1	<1	0
Lead     ppm     ASTM D5185m     >30     5     4     3       Copper     ppm     ASTM D5185m     >35     3     2     1       Tin     ppm     ASTM D5185m     >4     1     2     <1       Vanadium     ppm     ASTM D5185m     >4     1     2     <1       Cadmium     ppm     ASTM D5185m     <1     <1     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     2     2     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper     ppm     ASTM D5185m     >35     3     2     1       Tin     ppm     ASTM D5185m     >4     1     2     <1	Aluminum	ppm	ASTM D5185m	>9	<1	1	2
Tin	Lead	ppm	ASTM D5185m	>30	5	4	3
Vanadium     ppm     ASTM D5185m     <1     <1     0       Cadmium     ppm     ASTM D5185m     <1     <1     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     2     2     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1	Copper	ppm	ASTM D5185m	>35	3	2	1
Cadmium     ppm     ASTM D5185m     <1     <1     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     2     2     <1     <1       Molybdenum     ppm     ASTM D5185m     2     2     <1     <1       Manganese     ppm     ASTM D5185m     7     7     8        Calcium     ppm     ASTM D5185m     1659     1645     1587       Phosphorus     ppm     ASTM D5185m     376     357     336       Zinc     ppm     ASTM D5185m     3186     2775     2510       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     3     2     2       Solicon     ppm     ASTM D5185m     >>0     0     2       Potassium     p	Tin	ppm	ASTM D5185m	>4	1	2	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	<1	0
Boron	Cadmium	ppm	ASTM D5185m		<1	<1	0
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum     ppm     ASTM D5185m     2     2     <1       Manganese     ppm     ASTM D5185m     <1	Boron	ppm	ASTM D5185m		0	0	0
Manganese     ppm     ASTM D5185m     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1 <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td>0</td> <td>0</td>	Barium	ppm	ASTM D5185m		0	0	0
Magnesium     ppm     ASTM D5185m     7     7     8       Calcium     ppm     ASTM D5185m     1659     1645     1587       Phosphorus     ppm     ASTM D5185m     376     357     336       Zinc     ppm     ASTM D5185m     489     453     473       Sulfur     ppm     ASTM D5185m     3186     2775     2510       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     3     2     2       Sodium     ppm     ASTM D5185m     >0     0     2       Potassium     ppm     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D3524     >4.0     0.1     0.2     0.3       INFRA-RED     method     limit/base     current     history1     history2       Soot %     *ASTM D7844     0.1     0.1     0       Nitration     Abs/.1mm     *ASTM D7415 <td>Molybdenum</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>2</th> <td>2</td> <td>&lt;1</td>	Molybdenum	ppm	ASTM D5185m		2	2	<1
Calcium     ppm     ASTM D5185m     1659     1645     1587       Phosphorus     ppm     ASTM D5185m     376     357     336       Zinc     ppm     ASTM D5185m     489     453     473       Sulfur     ppm     ASTM D5185m     3186     2775     2510       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     3     2     2       Sodium     ppm     ASTM D5185m     >0     0     0     2       Potassium     ppm     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D3524     >4.0     0.1     0.2     0.3       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     0.1     0.1     0       Nitration     Abs/:1mm     *ASTM D7415     >30     20.0     19.7     19.5	Manganese	ppm	ASTM D5185m				
Phosphorus     ppm     ASTM D5185m     376     357     336       Zinc     ppm     ASTM D5185m     489     453     473       Sulfur     ppm     ASTM D5185m     3186     2775     2510       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     3     2     2       Sodium     ppm     ASTM D5185m     >+100     3     2     2       Sodium     ppm     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D5185m     >4.0     0.1     0.2     0.3       INFRA-RED     method     limit/base     current     history1     history2	•	ppm	ASTM D5185m				
Zinc     ppm     ASTM D5185m     489     453     473       Sulfur     ppm     ASTM D5185m     3186     2775     2510       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     3     2     2       Sodium     ppm     ASTM D5185m     0     0     2       Potassium     ppm     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D5185m     >0     0.1     0.2     0.3       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7624     >20     6.1     5.8     5.8       Sulfation     Abs/.1mm     *ASTM D7415     >30     20.0     19.7     19.5	Calcium	ppm	ASTM D5185m				
Sulfur     ppm     ASTM D5185m     3186     2775     2510       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     3     2     2       Sodium     ppm     ASTM D5185m     0     0     2       Potassium     ppm     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D5185m     >0     0.1     0.2     0.3       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     0.1     0.1     0       Nitration     Abs/cm     *ASTM D7624     >20     6.1     5.8     5.8       Sulfation     Abs/.1mm     *ASTM D7415     >30     20.0     19.7     19.5  <		ppm			376		
CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     3     2     2       Sodium     ppm     ASTM D5185m     0     0     2       Potassium     ppm     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D5185m     >20     0.1     0.2     0.3       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     0.1     0.1     0     0       Nitration     Abs/cm     *ASTM D7624     >20     6.1     5.8     5.8       Sulfation     Abs/.1mm     *ASTM D7415     >30     20.0     19.7     19.5       FLUID DEGRADATION     method     limit/base     current		ppm	ASTM D5185m			453	
Silicon     ppm     ASTM D5185m     >+100     3     2     2       Sodium     ppm     ASTM D5185m     0     0     2       Potassium     ppm     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D3524     >4.0     0.1     0.2     0.3       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     0.1     0.1     0       Nitration     Abs/cm     *ASTM D7624     >20     6.1     5.8     5.8       Sulfation     Abs/.1mm     *ASTM D7415     >30     20.0     19.7     19.5       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     15.9     15.1     15.0       Acid Number (AN)     mg KOH/g     ASTM D8045     1.45     1.32     1.33	Sulfur	ppm	ASTM D5185m		3186	2775	2510
Sodium     ppm     ASTM D5185m     0     0     2       Potassium     ppm     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D3524     >4.0     0.1     0.2     0.3       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     0.1     0.1     0       Nitration     Abs/cm     *ASTM D7624     >20     6.1     5.8     5.8       Sulfation     Abs/.1mm     *ASTM D7415     >30     20.0     19.7     19.5       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     15.9     15.1     15.0       Acid Number (AN)     mg KOH/g     ASTM D8045     1.45     1.32     1.33	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium     ppm     ASTM D5185m     >20     5     3     3       Fuel     %     ASTM D3524     >4.0     0.1     0.2     0.3       INFRA-RED     method     limit/base     current     history1     history2       Soot %     *ASTM D7844     0.1     0.1     0       Nitration     Abs/cm     *ASTM D7624     >20     6.1     5.8     5.8       Sulfation     Abs/.1mm     *ASTM D7415     >30     20.0     19.7     19.5       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     15.9     15.1     15.0       Acid Number (AN)     mg KOH/g     ASTM D8045     1.45     1.32     1.33	Silicon	ppm	ASTM D5185m	>+100	3	2	2
Fuel     %     ASTM D3524     >4.0     0.1     0.2     0.3       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     0.1     0.1     0       Nitration     Abs/cm     *ASTM D7624     >20     6.1     5.8     5.8       Sulfation     Abs/.1mm     *ASTM D7415     >30     20.0     19.7     19.5       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     15.9     15.1     15.0       Acid Number (AN)     mg KOH/g     ASTM D8045     1.45     1.32     1.33		ppm	ASTM D5185m				
INFRA-RED	Potassium	ppm					
Soot %     %     *ASTM D7844     0.1     0.1     0       Nitration     Abs/cm     *ASTM D7624     >20     6.1     5.8     5.8       Sulfation     Abs/.1mm     *ASTM D7415     >30     20.0     19.7     19.5       FLUID DEGRADATION method limit/base current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     15.9     15.1     15.0       Acid Number (AN)     mg KOH/g     ASTM D8045     1.45     1.32     1.33	Fuel	%	ASTM D3524	>4.0	0.1	0.2	0.3
Nitration     Abs/cm     *ASTM D7624     >20     6.1     5.8     5.8       Sulfation     Abs/.1mm     *ASTM D7415     >30     20.0     19.7     19.5       FLUID DEGRADATION method limit/base current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     15.9     15.1     15.0       Acid Number (AN)     mg KOH/g     ASTM D8045     1.45     1.32     1.33	INFRA-RED		method	limit/base	current	history1	history2
Sulfation     Abs/.1mm     *ASTM D7415     >30     20.0     19.7     19.5       FLUID DEGRADATION method limit/base current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     15.9     15.1     15.0       Acid Number (AN)     mg KOH/g     ASTM D8045     1.45     1.32     1.33	Soot %	%	*ASTM D7844		0.1	0.1	0
FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     15.9     15.1     15.0       Acid Number (AN)     mg KOH/g     ASTM D8045     1.45     1.32     1.33	Nitration	Abs/cm	*ASTM D7624	>20	6.1	5.8	5.8
Oxidation     Abs/.1mm     *ASTM D7414     >25     15.9     15.1     15.0       Acid Number (AN)     mg KOH/g     ASTM D8045     1.45     1.32     1.33	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.0	19.7	19.5
Acid Number (AN)     mg KOH/g     ASTM D8045     1.45     1.32     1.33	FLUID DEGRA	NOITAC	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.9	15.1	15.0
Base Number (BN)     mg KOH/g     ASTM D2896     3.41     3.08     3.32	Acid Number (AN)	mg KOH/g	ASTM D8045		1.45	1.32	1.33
	Base Number (BN)	mg KOH/g	ASTM D2896		3.41	3.08	3.32



# **OIL ANALYSIS REPORT**







Certificate 12367

Laboratory Sample No.

: PCA0117227 Lab Number : 06174059 Unique Number : 11020112

Received : 09 May 2024

**Tested** : 15 May 2024 Diagnosed : 15 May 2024 - Wes Davis Test Package : MOB 2 ( Additional Tests: FuelDilution, PercentFuel )

7556 SANDLICK ROAD

Contact: Service Manager

To discuss this sample report, contact Customer Service at 1-800-237-1369.

 $^st$  - 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)

Contact/Location: Service Manager - ENEBEEAG

Report Id: ENEBEEAG [WUSCAR] 06174059 (Generated: 05/16/2024 14:00:52) Rev: 1

BEE, VA

T:

F:

US 24217