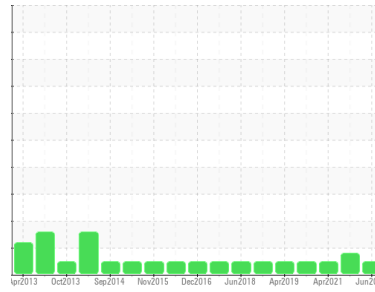




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area

**EVA CREEK**

Machine Id

**WEC 15 - 91978 (S/N 26112)**

Component

**Wind Turbine Gearbox**

Fluid

**CASTROL OPTIGEAR SYNTHETIC A ISO 320 (475 GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal for time on oil.

### Contamination

The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the component.

### Fluid Condition

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

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0941988</b>	WC0634821	WC0544190
Sample Date	Client Info		<b>25 Jun 2024</b>	02 Jun 2022	28 Apr 2021
Machine Age	hrs	Client Info	<b>32488</b>	77648	72005
Oil Age	hrs	Client Info	<b>32488</b>	0	72005
Oil Changed	Client Info		<b>Changed</b>	N/A	Not Changd
Sample Status			<b>NORMAL</b>	ATTENTION	NORMAL

## WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>80	<b>14</b>	15	22	
Iron	ppm	ASTM D5185m	>70	<b>4</b>	65	67
Chromium	ppm	ASTM D5185m	>3	<b>0</b>	1	1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	>10	<b>0</b>	0	<1
Silver	ppm	ASTM D5185m		<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>9	<b>5</b>	2	1
Lead	ppm	ASTM D5185m	>9	<b>0</b>	<1	<1
Copper	ppm	ASTM D5185m	>25	<b>0</b>	5	5
Tin	ppm	ASTM D5185m	>9	<b>0</b>	0	<1
Antimony	ppm	ASTM D5185m	>5	<b>---</b>	---	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Cadmium	ppm	ASTM D5185m		<b>0</b>	<1	<1

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	0	<b>0</b>	2	6
Barium	ppm	ASTM D5185m	0	<b>3</b>	5	0
Molybdenum	ppm	ASTM D5185m	1150	<b>1263</b>	1219	1299
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	1	1
Magnesium	ppm	ASTM D5185m	1800	<b>1851</b>	1814	1959
Calcium	ppm	ASTM D5185m	20	<b>21</b>	16	15
Phosphorus	ppm	ASTM D5185m	1450	<b>1514</b>	1398	1505
Zinc	ppm	ASTM D5185m	1650	<b>1671</b>	1667	1749
Sulfur	ppm	ASTM D5185m	4900	<b>7164</b>	5727	5586

## CONTAMINANTS

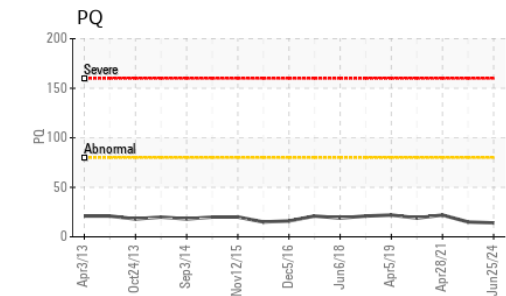
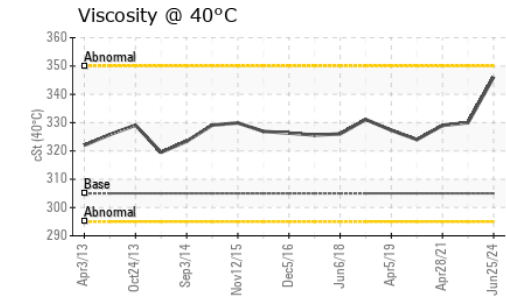
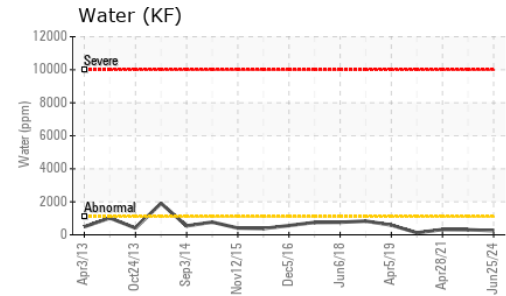
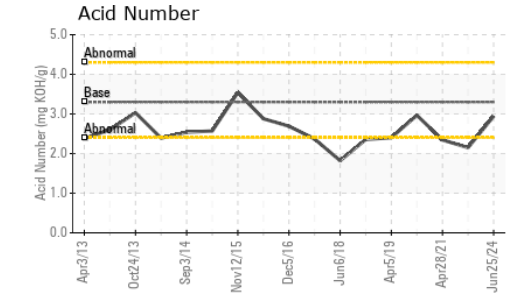
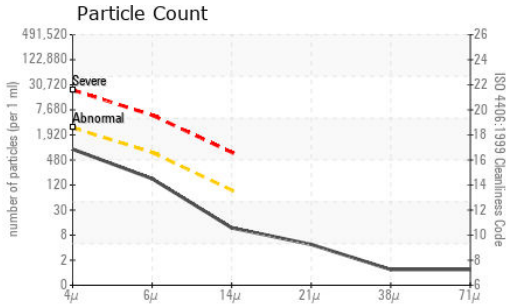
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>33	<b>25</b>	16	16
Sodium	ppm	ASTM D5185m	>20	<b>2</b>	8	8
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	0	2
Water	%	ASTM D6304	>.110	<b>0.025</b>	0.030	0.032
ppm Water	ppm	ASTM D6304	>1100	<b>252</b>	307.2	320.9

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	<b>764</b>	● 2944	318
Particles >6µm	ASTM D7647	>640	<b>150</b>	248	55
Particles >14µm	ASTM D7647	>80	<b>10</b>	16	7
Particles >21µm	ASTM D7647	>20	<b>4</b>	4	2
Particles >38µm	ASTM D7647	>4	<b>1</b>	1	0
Particles >71µm	ASTM D7647	>3	<b>1</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>18/16/13	<b>17/14/10</b>	● 19/15/11	15/13/10



# OIL ANALYSIS REPORT

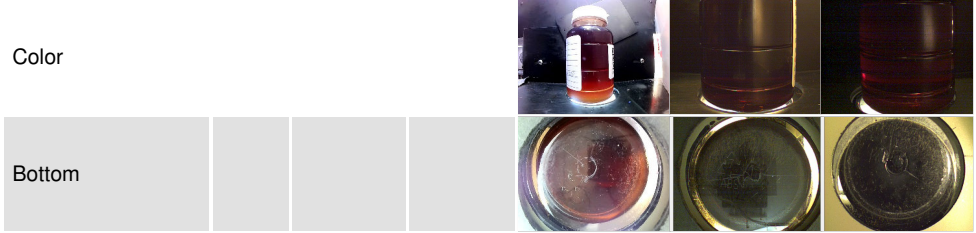


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045	3.3	<b>2.943</b>	2.15	2.344

VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>.110	<b>NEG</b>	NEG	NEG
Free Water	scalar	*Visual		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D445	305	<b>346.1</b>	330	329
Visc @ 100°C	cSt	ASTM D445	30.5	<b>36.7</b>	---	---
Viscosity Index (VI)	Scale	ASTM D2270	140	<b>152</b>	---	---

## SAMPLE IMAGES



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0941988 **Received** : 11 Jul 2024  
**Lab Number** : 06234370 **Tested** : 17 Jul 2024  
**Unique Number** : 11123204 **Diagnosed** : 17 Jul 2024 - Jonathan Hester  
**Test Package** : IND 2 ( Additional Tests: KF, KV100, PQ, PrtCount, VI )

**GOLDEN VALLEY ELECTRIC**  
 MILE 2.5 HEALY SPUR RD  
 HEALY, AK  
 US 99743  
 Contact: RYAN DEWITT  
 rjdewitt@gvea.com

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)