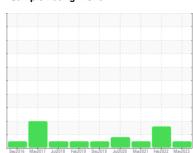


# **OIL ANALYSIS REPORT**

### Sample Rating Trend



NORMAL



## 13 Machine Id WTG-1303

Component Hydraulic System

SHELL TELLUS 32 (300 LTR)

#### 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. The amount and size of particulates present in the system are acceptable.

### **Fluid Condition**

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

Sample Number	Sep2016 May2017 Ju2018 Feb2019 Oee2019 Ju2020 Max2021 Feb2022 May2023							
Sample Date   Client Info   0	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Machine Age   miths   Client Info   0   29   120	Sample Number		Client Info		WC0804528	WC05504458	WC0547204	
Oil Age         mths         Client Info         Not Changd         Not Changd <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>25 May 2023</th> <th>05 Feb 2022</th> <th>04 Mar 2021</th>	Sample Date		Client Info		25 May 2023	05 Feb 2022	04 Mar 2021	
Oil Changed Sample Status   Client Info   Not Changd NORMAL   N	Machine Age	mths	Client Info		_	29	120	
Sample Status         method         limit/base         current         history1         history2           PQ         ASTM D8184 Iron         21         16	Oil Age	mths	Client Info		0	5	0	
Sample Status         method         limit/base         current         history1         history2           PQ         ASTM D8184 Iron         21         16	Oil Changed		Client Info		Not Changd	Not Changd	Not Changd	
PQ	Sample Status				NORMAL	ABNORMAL	NORMAL	
Iron	WEAR METALS		method	limit/base	current	history1	history2	
Chromium         ppm         ASTM D5185m         >20         5         5         4           Nickel         ppm         ASTM D5185m         >20         0         0         0           Titanium         ppm         ASTM D5185m         0         0         0           Silver         ppm         ASTM D5185m         >20         <1         0         0           Aluminum         ppm         ASTM D5185m         >20         <1         0         0           Lead         ppm         ASTM D5185m         >20         0         0         <1           Copper         ppm         ASTM D5185m         >20         0         0         <1           Antimony         ppm         ASTM D5185m         >20         0         0         <1           Antimony         ppm         ASTM D5185m         0         0         0         <1           Vanadium         ppm         ASTM D5185m         0         0         0         <1           ADDITIVES         method         limit/base         current         history1         history1           Boron         ppm         ASTM D5185m         0         0         0	PQ		ASTM D8184		21	16		
Nickel         ppm         ASTM D5185m         >20         0         0         0           Titanium         ppm         ASTM D5185m         0         0         0         0           Silver         ppm         ASTM D5185m         20         <1         0         0           Aluminum         ppm         ASTM D5185m         >20         <1         0         0           Lead         ppm         ASTM D5185m         >20         0         0         <1           Copper         ppm         ASTM D5185m         >20         0         0         <1           Copper         ppm         ASTM D5185m         >20         0         0         <1           Antimony         ppm         ASTM D5185m         0         0         0         0           Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         0           Boron         ppm         ASTM D5185m         0         0         0         0           Boron         ppm         ASTM D5185m         0         0         0         0	Iron	ppm	ASTM D5185m	>20	6	4	4	
Titanium         ppm         ASTM D5185m         0         0         0           Silver         ppm         ASTM D5185m         0         <1	Chromium	ppm	ASTM D5185m	>20	5	5	4	
Silver         ppm         ASTM D5185m         0         <1	Nickel	ppm	ASTM D5185m	>20	0	0	0	
Aluminum         ppm         ASTM D5185m         >20         <1	Titanium	ppm	ASTM D5185m		0	0	0	
Lead         ppm         ASTM D5185m         >20         0         0         <1	Silver	ppm	ASTM D5185m		0	<1	<1	
Copper         ppm         ASTM D5185m         >20         2         3         2           Tin         ppm         ASTM D5185m         >20         0         0         <1           Antimony         ppm         ASTM D5185m           0           Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0           Boron         ppm         ASTM D5185m         0         0         0           Boron         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0           Manganese         ppm         ASTM D5185m         <1         0         <1           Manganesium         ppm         ASTM D5185m         11         22         13         12           Calcium         ppm         ASTM D5185m         11         22         13         12           Calcium         ppm         ASTM D5185m         259         284         304         278           Zinc         ppm         ASTM D5185m         259	Aluminum	ppm	ASTM D5185m	>20	<1	0	0	
Tin ppm ASTM D5185m >20 0 0 0 <1  Antimony ppm ASTM D5185m	Lead	ppm	ASTM D5185m	>20	0	0	<1	
Antimony         ppm         ASTM D5185m           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         0         0         0         0           Barium         ppm         ASTM D5185m         0         0         0         0           Manganese         ppm         ASTM D5185m         <1	Copper	ppm	ASTM D5185m	>20	2	3	2	
Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         <1	Tin	ppm	ASTM D5185m	>20	0	0	<1	
Cadmium         ppm         ASTM D5185m         0         0         <1	Antimony	ppm	ASTM D5185m				0	
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0           Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         <1         0         <1           Manganese         ppm         ASTM D5185m         <1         0         0           Magnesium         ppm         ASTM D5185m         11         22         13         12           Calcium         ppm         ASTM D5185m         35         21         28         24           Phosphorus         ppm         ASTM D5185m         259         284         304         278           Zinc         ppm         ASTM D5185m         277         292         292         289           Sulfur         ppm         ASTM D5185m         1865         4841         4590         4447           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         0         0         0	Vanadium	ppm	ASTM D5185m		0	0	0	
Boron         ppm         ASTM D5185m         0         0         0           Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         <1	Cadmium	ppm	ASTM D5185m		0	0	<1	
Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         <1         0         <1           Manganese         ppm         ASTM D5185m         <1         0         0           Magnesium         ppm         ASTM D5185m         11         22         13         12           Calcium         ppm         ASTM D5185m         35         21         28         24           Phosphorus         ppm         ASTM D5185m         259         284         304         278           Zinc         ppm         ASTM D5185m         277         292         292         289           Sulfur         ppm         ASTM D5185m         1865         4841         4590         4447           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         0         0         0           Sodium         ppm         ASTM D5185m         >20         0         0         0           Potassium         ppm         ASTM D5185m         >20         0         0         0 <th>ADDITIVES</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum         ppm         ASTM D5185m         <1	Boron	ppm	ASTM D5185m		0	0	0	
Manganese         ppm         ASTM D5185m         <1	Barium	ppm	ASTM D5185m		0	0	0	
Magnesium         ppm         ASTM D5185m         11         22         13         12           Calcium         ppm         ASTM D5185m         35         21         28         24           Phosphorus         ppm         ASTM D5185m         259         284         304         278           Zinc         ppm         ASTM D5185m         277         292         292         289           Sulfur         ppm         ASTM D5185m         1865         4841         4590         4447           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         0         0         0           Sodium          ppm         ASTM D5185m         >15         0         0         0           Sodium         ppm         ASTM D5185m         >20         0         0         0           Vater         %         ASTM D5185m         >20         0         0         0           Water         %         ASTM D6304         >0.05         0.005         0.006         0.011           ppm Water         ppm         ASTM D6304         >5000	Molybdenum	ppm	ASTM D5185m		<1	0	<1	
Calcium         ppm         ASTM D5185m         35         21         28         24           Phosphorus         ppm         ASTM D5185m         259         284         304         278           Zinc         ppm         ASTM D5185m         277         292         292         289           Sulfur         ppm         ASTM D5185m         1865         4841         4590         4447           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         0         0         0           Sodium         ppm         ASTM D5185m         >20         0         0         0           Potassium         ppm         ASTM D6304         >0.05         0.005         0.006         0.011           ppm Water         %         ASTM D6304         >500         59.5         69.8         116.6           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         >5000         293         △ 10303         910           Particles >6µm         ASTM D7647 </th <th>Manganese</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>&lt;1</th> <th>0</th> <th>0</th>	Manganese	ppm	ASTM D5185m		<1	0	0	
Phosphorus         ppm         ASTM D5185m         259         284         304         278           Zinc         ppm         ASTM D5185m         277         292         292         289           Sulfur         ppm         ASTM D5185m         1865         4841         4590         4447           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         0         0         0           Sodium         ppm         ASTM D5185m         <1         0         0         0           Potassium         ppm         ASTM D5185m         >20         0         0         0           Vater         %         ASTM D5185m         >20         0         0         0           Water         %         ASTM D6304         >0.05         0.005         0.005         0.006         0.011           ppm Water         ppm         ASTM D6304         >500         59.5         69.8         116.6           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm	Magnesium	ppm	ASTM D5185m	11	22	13	12	
Zinc         ppm         ASTM D5185m         277         292         292         289           Sulfur         ppm         ASTM D5185m         1865         4841         4590         4447           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         0         0         0           Sodium         ppm         ASTM D5185m         >20         0         0         0           Potassium         ppm         ASTM D5185m         >20         0         0         0           Water         %         ASTM D6304         >0.05         0.005         0.006         0.011           ppm Water         ppm         ASTM D6304         >500         59.5         69.8         116.6           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         293         Δ 10303         910           Particles >6μm         ASTM D7647         >160         13         Δ 250         42           Particles >21μm         ASTM D7647         >40<	Calcium	ppm	ASTM D5185m	35	21	28	24	
Sulfur         ppm         ASTM D5185m         1865         4841         4590         4447           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         0         0         0           Sodium         ppm         ASTM D5185m         <1         0         0         0           Potassium         ppm         ASTM D5185m         >20         0         0         0         0           Water         %         ASTM D6304         >0.05         0.005         0.006         0.011         0	Phosphorus	ppm	ASTM D5185m	259	284	304	278	
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         0         0         0           Sodium         ppm         ASTM D5185m         >20         0         0         0           Potassium         ppm         ASTM D5185m         >20         0         0         0           Water         %         ASTM D6304         >0.05         0.005         0.006         0.011           ppm Water         ppm         ASTM D6304         >500         59.5         69.8         116.6           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         293         Δ 10303         910           Particles >6μm         ASTM D7647         >1300         79         Δ 3296         277           Particles >14μm         ASTM D7647         >40         4         Δ 74         14           Particles >38μm         ASTM D7647         >10         0         9         0           Particles >71μm         ASTM D7647         >3         0         0	Zinc	ppm	ASTM D5185m	277	292	292	289	
Silicon         ppm         ASTM D5185m         >15         0         0         0           Sodium         ppm         ASTM D5185m         <1	Sulfur	ppm	ASTM D5185m	1865	4841	4590	4447	
Sodium         ppm         ASTM D5185m         <1	CONTAMINANTS		method	limit/base	current	history1	history2	
Potassium         ppm         ASTM D5185m         >20         0         0         0           Water         %         ASTM D6304         >0.05         0.005         0.006         0.011           ppm Water         ppm         ASTM D6304         >500         59.5         69.8         116.6           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         293         ▲ 10303         910           Particles >6μm         ASTM D7647         >1300         79         ▲ 3296         277           Particles >14μm         ASTM D7647         >160         13         ▲ 250         42           Particles >21μm         ASTM D7647         >40         4         ▲ 74         14           Particles >38μm         ASTM D7647         >10         0         9         0           Particles >71μm         ASTM D7647         >3         0         0         0	Silicon	ppm	ASTM D5185m	>15	0	0	0	
Potassium         ppm         ASTM D5185m         >20         0         0         0           Water         %         ASTM D6304         >0.05         0.005         0.006         0.011           ppm Water         ppm         ASTM D6304         >500         59.5         69.8         116.6           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         293         ▲ 10303         910           Particles >6μm         ASTM D7647         >1300         79         ▲ 3296         277           Particles >14μm         ASTM D7647         >160         13         ▲ 250         42           Particles >21μm         ASTM D7647         >40         4         ▲ 74         14           Particles >38μm         ASTM D7647         >10         0         9         0           Particles >71μm         ASTM D7647         >3         0         0         0	Sodium	ppm	ASTM D5185m		<1	0	0	
Water         %         ASTM D6304         >0.005         0.005         0.006         0.011           ppm Water         ppm         ASTM D6304         >500         59.5         69.8         116.6           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         293         ▲ 10303         910           Particles >6μm         ASTM D7647         >1300         79         ▲ 3296         277           Particles >14μm         ASTM D7647         >160         13         ▲ 250         42           Particles >21μm         ASTM D7647         >40         4         ▲ 74         14           Particles >38μm         ASTM D7647         >10         0         9         0           Particles >71μm         ASTM D7647         >3         0         0         0	Potassium		ASTM D5185m	>20	0	0	0	
ppm Water         ppm         ASTM D6304         >500         59.5         69.8         116.6           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         293         ▲ 10303         910           Particles >6μm         ASTM D7647         >1300         79         ▲ 3296         277           Particles >14μm         ASTM D7647         >160         13         ▲ 250         42           Particles >21μm         ASTM D7647         >40         4         ▲ 74         14           Particles >38μm         ASTM D7647         >10         0         9         0           Particles >71μm         ASTM D7647         >3         0         0         0	Water		ASTM D6304	>0.05	0.005	0.006	0.011	
Particles >4μm       ASTM D7647       >5000       293       ▲ 10303       910         Particles >6μm       ASTM D7647       >1300       79       ▲ 3296       277         Particles >14μm       ASTM D7647       >160       13       ▲ 250       42         Particles >21μm       ASTM D7647       >40       4       ▲ 74       14         Particles >38μm       ASTM D7647       >10       0       9       0         Particles >71μm       ASTM D7647       >3       0       0       0	ppm Water	ppm	ASTM D6304	>500	59.5	69.8	116.6	
Particles >6μm       ASTM D7647       >1300       79       Δ 3296       277         Particles >14μm       ASTM D7647       >160       13       Δ 250       42         Particles >21μm       ASTM D7647       >40       4       Λ 74       14         Particles >38μm       ASTM D7647       >10       0       9       0         Particles >71μm       ASTM D7647       >3       0       0       0	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2	
Particles >14μm       ASTM D7647       >160       13 $^{250}$ 42         Particles >21μm       ASTM D7647       >40       4 $^{74}$ 14         Particles >38μm       ASTM D7647       >10       0       9       0         Particles >71μm       ASTM D7647       >3       0       0       0	Particles >4µm		ASTM D7647	>5000	293	<u> </u>	910	
Particles >14μm       ASTM D7647       >160       13 $^{250}$ 42         Particles >21μm       ASTM D7647       >40       4 $^{74}$ 14         Particles >38μm       ASTM D7647       >10       0       9       0         Particles >71μm       ASTM D7647       >3       0       0       0				>1300	79		277	
Particles >21μm       ASTM D7647       >40       4 $^{4}$ 14         Particles >38μm       ASTM D7647       >10       0       9       0         Particles >71μm       ASTM D7647       >3       0       0       0			ASTM D7647					
Particles >38μm       ASTM D7647       >10       0       9       0         Particles >71μm       ASTM D7647       >3       0       0       0							14	
Particles >71 $\mu$ m ASTM D7647 >3 $0$ 0								
· ·	·		ISO 4406 (c)			<u>^</u> 21/19/15	17/15/13	



### OIL ANALYSIS REPORT







Certificate L2367

Sample No. Lab Number **Unique Number** 

: 05857960

: WC0804528 : 10492425

Received Diagnosed

: 30 May 2023 : Don Baldridge

Diagnostician Test Package : IND 2 (Additional Tests: KF, PQ)

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)

STA ANA KM25 CARRETERA AL SUR, A 1KM DEL CRUCE FRANCISCO MORAZAN, ZZ HN

Contact: SANTOS DEL CID

sdelcid@dencmi.com

T: x: F: x:

Report Id: ENEFRA [WUSCAR] 05857960 (Generated: 10/24/2023 10:54:30) Rev: 1

Contact/Location: SANTOS DEL CID - ENEFRA