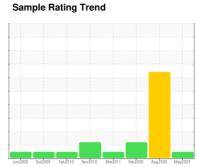


OIL ANALYSIS REPORT

[VANMAL_23517] 501 CENTER 65 MM (S/N 208943)
Gearbox

TEXACO PINNACLE 320 (7 GAL)





Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

Fluid Condition

The condition of the oil is acceptable for the time in service.

Sample Date Client Info 17 May 2024 27 Aug 2020 13 Feb 2020 Machine Age mths Client Info 10 63 18 Oil Age mths Client Info 10 0 14 Oil Changed Client Info N/A Not Changd Not Changd Not Changd Coll Changed Sample Status Client Info N/A Not Changd Not Changd Not Changd CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >200 22 ▲ 494 166 Chromium ppm ASTM D5185m >15 <1			Jun2009 (Jet2009 Feb2010 Nov20	10 Mar2011 Feb2020 Aug202	U May2024	
Sample Date Client Info 17 May 2024 27 Aug 2020 13 Feb 2020 Machine Age mths Client Info 10 63 18 Oil Age mths Client Info 10 0 14 Oil Changed Client Info N/A Not Changd Not Changd Sample Status method limit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >200 22 A 94 166 Chromium ppm ASTM D5185m >15 <1	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age mths Client Info 10 63 18 Oil Age inths Client Info 10 0 14 Oil Changed Client Info N/A Not Changd Not Changd Sample Status Normal Issuer ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >200 22 ▲ 944 166 Chromium ppm ASTM D5185m >15 <1	Sample Number		Client Info		WC0870879	WC0411589	WC0411540
Machine Age mths Client Info 10 63 18 Oil Age miths Client Info 10 0 144 Not Changd Sample Status Client Info N/A Not Changd Not Changd Not Changd Sample Status method Imitibase current history1 history2 Water WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >200 22 A 944 166 Chromium ppm ASTM D5185m >15 <1 8 2 Iron ppm ASTM D5185m >15 0 0 0 Chromium ppm ASTM D5185m >25 1 0 0 Ilical ppm ASTM D5185m >25 1 0 0 Chromium ppm ASTM D5185m >20 2 3	Sample Date		Client Info		17 May 2024	27 Aug 2020	13 Feb 2020
Dil Changed Client Info N/A Not Changd Not Changd NoRMAL SEVERE ABNORMAL	Machine Age	mths	Client Info		-	63	18
NORMAL SEVERE ABNORMAL CONTAMINATION method limit/base current history1 history2 history2	Oil Age	mths	Client Info		10	0	14
Water	Oil Changed		Client Info		N/A	Not Changd	Not Changd
Water WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >200 22 ▲ 494 166 Chromium ppm ASTM D5185m >15 <1	Sample Status				NORMAL	SEVERE	ABNORMAL
WEAR METALS	CONTAMINATIO	N	method	limit/base	current	history1	history2
Iron	Water		WC Method	>0.2	NEG	NEG	NEG
Chromium ppm ASTM D5185m >15 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>200	22	4 94	166
Titanium	Chromium	ppm	ASTM D5185m	>15	<1	8	2
Silver	Nickel	ppm	ASTM D5185m	>15	0	0	0
Aluminum	Titanium	ppm	ASTM D5185m		<1	0	0
Lead	Silver	ppm	ASTM D5185m		<1	0	0
Copper ppm ASTM D5185m >200 2 3 3 Tin ppm ASTM D5185m >25 <1	Aluminum	ppm	ASTM D5185m	>25	1	0	0
Tin	Lead	ppm	ASTM D5185m	>100	<1	0	<1
Antimony	Copper	ppm	ASTM D5185m	>200	2	3	3
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 6 11 11 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 4 2 Magnesium ppm ASTM D5185m 0 0 <1 Calcium ppm ASTM D5185m 0 0 21 Phosphorus ppm ASTM D5185m 446 143 209 Zinc ppm ASTM D5185m 4384 5064 4674 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 6 2	Tin	ppm	ASTM D5185m	>25	<1	0	0
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 6 11 11 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 <1	Antimony	ppm	ASTM D5185m	>5		0	0
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 6 11 11 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 <1	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron ppm ASTM D5185m 6 11 11 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 <1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 <1 Manganese ppm ASTM D5185m 0 4 2 Magnesium ppm ASTM D5185m <1 0 <1 Calcium ppm ASTM D5185m 0 0 21 Phosphorus ppm ASTM D5185m 446 143 209 Zinc ppm ASTM D5185m 10 <1 4 Sulfur ppm ASTM D5185m 4384 5064 4674 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 6 2 3 Sodium ppm ASTM D5185m >20 1 0 0 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 0 <1 Manganese ppm ASTM D5185m 0 4 2 Magnesium ppm ASTM D5185m <1 0 <1 Calcium ppm ASTM D5185m 0 0 21 Phosphorus ppm ASTM D5185m 446 143 209 Zinc ppm ASTM D5185m 10 <1 4 Sulfur ppm ASTM D5185m 4384 5064 4674 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 6 2 3 Sodium ppm ASTM D5185m 20 1 0 0 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE Wellow Metal scalar *Visual<	Boron	ppm	ASTM D5185m		6	11	11
Manganese ppm ASTM D5185m 0 4 2 Magnesium ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m <1 0 <1 Calcium ppm ASTM D5185m 0 0 21 Phosphorus ppm ASTM D5185m 446 143 209 Zinc ppm ASTM D5185m 10 <1	Molybdenum	ppm	ASTM D5185m		0	0	<1
Calcium ppm ASTM D5185m 0 0 21 Phosphorus ppm ASTM D5185m 446 143 209 Zinc ppm ASTM D5185m 10 <1	Manganese	ppm	ASTM D5185m		0	4	2
Phosphorus ppm ASTM D5185m 446 143 209 Zinc ppm ASTM D5185m 10 <1 4 Sulfur ppm ASTM D5185m 4384 5064 4674 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 6 2 3 Sodium ppm ASTM D5185m 2 <1	Magnesium	ppm	ASTM D5185m		<1	0	<1
Zinc ppm ASTM D5185m 10 <1 4 Sulfur ppm ASTM D5185m 4384 5064 4674 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 6 2 3 Sodium ppm ASTM D5185m 2 <1 <1 Potassium ppm ASTM D5185m >20 1 0 0 VISUAL method limit/base current history1 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 Sand/Dirt scalar *Visual NONE NONE NONE	Calcium	ppm	ASTM D5185m		0	0	21
Sulfur ppm ASTM D5185m 4384 5064 4674 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 6 2 3 Sodium ppm ASTM D5185m 2 <1	Phosphorus	ppm	ASTM D5185m		446	143	209
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 6 2 3 Sodium ppm ASTM D5185m 2 <1	Zinc	ppm	ASTM D5185m		10	<1	4
Silicon ppm ASTM D5185m >50 6 2 3 Sodium ppm ASTM D5185m 2 <1	Sulfur	ppm	ASTM D5185m		4384	5064	4674
Sodium ppm ASTM D5185m 2 <1	CONTAMINANT	S	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 1 0 0 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE LIGHT → HEAVY Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE	Silicon	ppm	ASTM D5185m	>50	6	2	3
VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE LIGHT ▲ HEAVY 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	Sodium	ppm	ASTM D5185m		2	<1	<1
White Metal scalar *Visual NONE NONE LIGHT → HEAVY 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	Potassium	ppm	ASTM D5185m	>20	1	0	0
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	VISUAL		method	limit/base	current	history1	history2
Precipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONE	White Metal	scalar	*Visual	NONE	NONE	LIGHT	▲ HEAVY
Precipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONE	Yellow Metal	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	Precipitate	scalar	*Visual			NONE	NONE
Debrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONE		scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt scalar *Visual NONE NONE NONE NONE		scalar					
	Sand/Dirt						

NORML

NEG

NEG

NORML

>0.2

scalar *Visual

scalar *Visual

*Visual

scalar

NORML

nitted MELVERN MELLIAMS

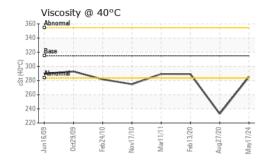
Odor

Emulsified Water

NORML



OIL ANALYSIS REPORT





GRAPHS Ferrous Alloys 450 400 350 300 E 250 200 150 100 Non-ferrous Metals Viscosity @ 40°C 360 340 320 St (40°C) 300 300 260 220



Certificate 12367

Laboratory

Sample No. : WC0870879 Lab Number : 06185397 Unique Number : 11036723

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 20 May 2024 **Tested** : 21 May 2024

Diagnosed

: 23 May 2024 - Jonathan Hester

US 23231 Contact: MELVERN WILLIAMS melvern.williams@novolex.com T: (804)222-2012

* - 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) **HILEX POLY**

2800 SPROUSE DR

RICHMOND, VA

F: (804)222-2050