



Transformer Condition Assessment TCA

®

Date : 3/3/2022

Location :
Bank & Phase :
Serial Number :
Manufacturer :
Date Mfgd :
Size (MVA) :

Report Number :
Fluid volume : 46600
Fluid type : Mineral Oil
Preservation :
Cooling : ONAN/ONAF
Core & coil wt. :

Sample Date :	2/9/2022	1/27/2021	1/30/2020	
Laboratory No. :	5119893	5115804	5113163	5110273
Container No. :				
Temperature :	79.9	67.1		74.1

ASTM D3612-C

H2	Hydrogen	(ppm) :	8	10	0	5
CH4	Methane	(ppm) :	12	8	9	6
C2H6	Ethane	(ppm) :	0	0	0	1
C2H4	Ethylene	(ppm) :	0	0	0	0
C2H2	Acetylene	(ppm) :	0	0	0	0
CO	Carbon monoxide	(ppm) :	406	355	307	259
CO2	Carbon dioxide	(ppm) :	3906	5474	4238	3727
N2	Nitrogen	(ppm) :	32269	66517	76523	33869
O2	Oxygen	(ppm) :	10819	16116	21129	8163
Total (ppm) :			47420	88480	102206	46030
TDCG (ppm) :			426	373	316	271
SHL (%) :			11.30	10.95	12.35	11.34
ETCG (% in blanket) :			0.80	0.36	0.25	0.51

ASTM 6786

Particles	5 to 15 um :	22820	31795	37220	2315475
Particles	15 to 25 um :	1295	800	735	700
Particles	25 to 50 um :	700	365	275	510
Particles	50 to 100 um :	170	40	15	40
Particles	> 100 um :	35	5	0	10

D1533	Moisture	(ppm) :	8	5	7	10
D1816	Dielectric BV	(kV) :	59.9	59.6	45.1	55.2
D974	Acid Number	(mg KOH/g) :	<0.02	<0.02	<0.02	<0.02
D971	Interfacial Tension	(mN/m) :	42.3	49.4	45.9	46.7
D1500	Color Number	(ASTM) :	<1.0	<0.5	<0.5	<0.5
D924	Power Factor	(% @25C) :				
D2668	Oxidation Inhibitor	(%) :	0.266	0.234	0.212	0.216

ASTM D5837

5 HMF	5 hydroxymethyl-2-furaldehyde	(ppm) :	<10 ppb	<10 ppb	<10 ppb	<10 ppb
2 FAL	2 furaldehyde	(ppm) :	12 ppb	<10 ppb	<10 ppb	<10 ppb
2 ACF	2 acetylfuran	(ppm) :	<10 ppb	<10 ppb	<10 ppb	<10 ppb
5 MEF	5 methyl-2-furaldehyde	(ppm) :	<10 ppb	<10 ppb	<10 ppb	<10 ppb
2 FOL	2 furfuroil	(ppm) :	<10 ppb	<10 ppb	<10 ppb	<10 ppb
Estimated DP :			957	>1000	>1000	>1000



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TCA Assessment :
Sampling Interval : Retest in one year.
Operating Procedure : Continue normal operation. (PF@100 = 0.14)

Comments : No abnormal gas generation is indicated. (Specific GR = 0.8749)
Field Comments : Fluid condition is within acceptable in-service parameters. Paper condition is "as new".



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Approved by:

Michelle Kutzleb, PhD
Director of Operations