TJ | H2b
ANALYTICAL SERVICES INCORPORATED

Dissolved Gas Analysis

Date: 08-17-2006
Report Number: 3633970
P.O. Number:

Western Area Power
Attn: Dave Hinders
200 4th St SW
Huron, SD 57350

Location : Huron Sub
Bank & Phase : KV1B
Serial Number : 900442
Manufacturer : FPE
Equipment Type : Transformer
Model :

Year of Mfg. : 1984
kV Rating : 200000
Breathing :
Cooling :
Fluid type : Mineral Oil
Fluid Volume :

Sample Date :	8/14/2006	5/4/2006	4/21/2005	3/31/2004	11/17/2003	6/5/2003
Laboratory No. :	3633970	3628136	3609837	3587165	3583243	3571112
Container No. :	41266	41258	32275	23997	21567	9844
Temperature :		38C	40C		30C	33C
Hydrogen (ppm) :	393	10	11	13	10	7
Methane (ppm) :	246	3	0	6	7	2
Ethane (ppm) :	21	1	1	0	0	0
Ethylene (ppm) :	325	1	1	2	1	0
Acetylene (ppm) :	441	0	0	0	0	0
Carbon monoxide (ppm) :	85	78	62	49	52	15
Carbon dioxide (ppm) :	1266	972	789	572	596	234
Nitrogen (ppm) :	96210	84843	102943	126927	85170	71418
Oxygen (ppm) :	18590	3415	2622	14287	3189	4430
Total (ppm) :	117575	89323	106429	141856	89025	76105
TDCG (ppm) :	1509	93	75	70	70	24
TDCG Rate (ppm/day) :	13.9	0.0	0.0	0.0	0.3	1.5
TDCG (gallons) :						
TDHHG (ppm) :	591	5	2	8	8	2
ETCG (% in blanket) :	0.79	0.09	0.06	0.04	0.06	0.03
CH4 / H2 :	0.63	0.25	0.00	0.46	0.73	0.33
C2H2 / C2H4 :	1.36	0.00	0.00	0.00	0.00	0.00
C2H2 / CH4 :	1.79	0.00	0.00	0.00	0.00	0.00
C2H6 / C2H2 :	0.05	9999.99	9999.99	0.00	9999.99	0.00
C2H4 / C2H6 :	15.79	0.90	1.08	9999.99	1.62	0.00
CO2 / CO :	14.96	12.49	12.69	11.74	11.51	15.78

Dissolved Gas Diagnostics

Key Gas Method : Possible sparking, Overheating, Arcing,
Doernenburg Ratios : Arcing (High intensity partial discharge)
Rodgers Ratios (3) : Arcing - High energy discharge
Rodgers Ratios (4) : Arc with power follow through
CO2 / CO :
Heat Index : 0.06

IEEE Std. C57.104 -1991 Condition : 2 TDCG Level (ppm) : 1509 TDCG Rate (ppm/day) : 13.9
Sampling Interval : Monthly
Operating Procedure : Exercise caution. Analyze for individual gases. Determine load dependence.
Comments :

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