

International Independent Inspection & Testing Company

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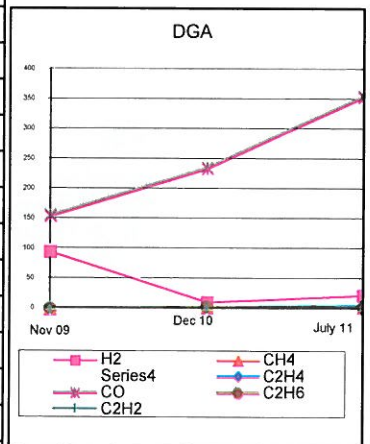
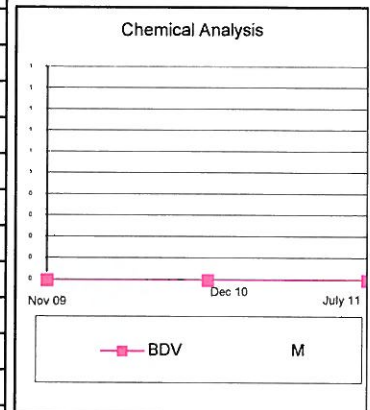
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TRANSFORMER OIL ANALYSIS REPORT

Company	:	Location	:	Barka Plant
Address	:	Sample Detail:	:	GT 2 -Main Tank Bottom
Attn.	:	Serial No.	:	ET09386/1
		Rating	:	220 KV
		Oil Temp °C	:	37
		Winding Temp	:	38

TEST & UNIT	METHOD	Limit(IEC60422)	RESULT	RESULT	RESULT
Lab Report No : GC\LR\			36543/2009	99834/2011	114457/2011
Sample No. GC\			36543	99834	114457
Date Sampled			21/11/2009	N/P	12/07/2011
Date Received			23/11/2009	28/03/2011	13/07/2011
Date Reported			07/12/2011	29/03/2011	13/07/2011
Chemical Analysis			Nov 09	Dec 10	July 11
Breakdown Voltage	BDV	IEC 60156 50 Min	62	64	68
Water content,ppm	M	IEC 60814 10 Max	3 *	6 *	3*
Dissipation Factor@90°C	DF	IEC 60247 0.20 Max	0.005	0.00621	0.00179
Resistivity @90 °C+ RHO,ΩM	R	D 1169 1GΩM Min	45.81E+09	56.74E+09	226.9E+09
Resistivity @90 °C- RHO,ΩM	R	D 1169 1GΩM Min	45.84E+09	58.87E+09	215.6E+09
Interfacial Tension, Dynes/cm	IT	D 971 22 Min	43.1	42.7	42.7
Dissolved Gas Analysis		Limit(IEC60599)			
Hydrogen, ppm	H2	150 Max	96	12	24
Methane, ppm	CH4	130 Max	0	3	4
Ethane, ppm	C2H6	90 Max	0	2	2
Ethylene, ppm	C2H4	280 Max	0	2	4
Acetylene, ppm	C2H2	0	0	0	0
Carbon Monoxide, ppm	CO	600 Max	155	235	355
Carbon Dioxide, ppm	CO2	14000 Max	1457	2978	3615
Nitrogen, ppm	N2	-	65977	67414	72018
Oxygen, ppm	O2	-	20575	6389	3169
Total, ppm	Total	-	88260	77035	79191
TDCG, ppm	TDCG	-	251	254	389
TDHHG, ppm	TDHHG	-	0	7	10
ETCG, % in blanket	ETCG	-	0.28	0.33	0.49



* Temperature corrected

Test Method deviation : None
 Sampling method : ASTM D 923 & D 3613
 Test conducted by Emp# : 241, 255
 Report prepared by Emp# : 144

The above test results are only applicable to the sample(s) referred above

OPERATIONAL STATUS AND RECOMMENDATIONS: Transformer is operating Satisfactorily. Continue normal operations. Repeat DGA in 12 months

Reported by
 Laboratory Manager