



ENGINEERING STATEMENT
OF
JOHN F.X. BROWNE, P.E.
IN SUPPORT OF AN APPLICATION FOR
MINOR MODIFICATION OF A POST-TRANSITION CONSTRUCTION PERMIT
WZRB-DT
COLUMBIA, SC

Background

Roberts Broadcasting Company of Columbia, SC, LLC is the licensee of WZRB-DT which has been authorized to operate its post-transition DTV facility on Channel 47 (BPCDT-20080317AIR) at Columbia, SC, with an ERP of 50 kW at a HAAT of 192m. The tower is located at the following coordinates:

(NAD27)
34° 02' 38" N
80° 59' 51" W

WZRB now wishes to "maximize" the post-transition facility ERP to 240 kW. All other facility parameters will remain the same.



Antenna System and Tower

WZRB proposes to operate with its existing directional Dielectric TFU-22GTH-R 48P300 (specifications attached hereto as Exhibit 1a-1d) analog antenna (which will be used for post-transition operation). The antenna is installed on a tower (ASR#1044529) that has an overall height of 283.5m AMSL (with appurtenances). The antenna has a center-of-radiation of 274m AMSL (with a calculated HAAT of 192m). No modifications to the tower or antenna system are necessary to effect the proposed change in ERP.

Coverage

The entire principal community of Columbia, SC is well within the predicted F(50,90) 48 dBu contour based on the proposed 240 kW ERP.

Interference

Studies were conducted with the proposed parameters using software that emulates the software used by the FCC (OET-69 analysis). The results of the study indicate that there are no post-transition domestic stations that would receive more than 0.5% new interference.

Environmental/RFR

The proposed construction does not require preparation of an Environmental Assessment as it does not involve any of the factors listed in Section 1.1306.

The additional ground level RFR contributed to the site by this proposal in public areas is calculated to be 0.003187 mW/cm² which is less than 5% of the MPE for public exposure (0.45 mW/cm²) at the proposed frequency and, therefore, the proposal is excluded from further consideration.



WZRB agrees to comply with the Commission's requirements regarding power adjustments or cessation of operation as may be necessary to ensure a compliant environment for worker access. Workers will be encouraged to wear personal RFR monitors when on the structure. The tower base is enclosed by a locked security fence and appropriate signage warning of RFR hazards is posted.

Certification

I hereby certify that the foregoing report or statement was prepared by me but may include work performed by others under my supervision or direction. The statements of fact contained therein are believed to be true and correct based on personal knowledge, information and belief unless otherwise stated; with respect to facts not known of my own personal knowledge, I believe them to be true and correct based on their origin from sources known to me to be generally reliable and accurate. I have prepared this document with due care and in accordance with applicable standards of professional practice.

John F. X. Browne, P.E.
June 10, 2008

WZRB-DT Directional Antenna Data
Table #1

<u>Actual Bearing</u>	<u>Pattern Azimuth</u>	<u>Relative Field</u>	<u>ERP (dBk)</u>	<u>41 dBu</u>	<u>48 dBu</u>
N000E	0	0.254	11.90	60.1 km	52.1 km
	10	0.273	12.53		
	20	0.342	14.48		
	30	0.509	17.94		
	40	0.724	21.00		
N045E	45	0.824	22.12	70.4 km	63.0 km
	50	0.907	22.95		
	60	0.995	23.76		
	70	0.972	23.56		
	80	0.865	22.54		
N090E	90	0.719	20.94	69.6 km	62.3 km
	100	0.576	19.01		
	110	0.457	17.00		
	120	0.373	15.24		
	130	0.330	14.17		
N135E	135	0.324	14.01	64.1 km	56.3 km
	140	0.330	14.17		
	150	0.373	15.24		
	160	0.457	17.00		
	170	0.576	19.01		
N180E	180	0.719	20.94	72.6 km	65.0 km
	190	0.865	22.54		
	200	0.972	23.56		
	210	0.995	23.76		
	220	0.907	22.95		
N225E	225	0.824	22.12	72.6 km	65.0 km
	230	0.724	21.00		
	240	0.509	17.94		
	250	0.342	14.48		
	260	0.273	12.53		
N270E	270	0.254	11.90	61.5 km	53.5 km
	280	0.235	11.22		
	290	0.223	10.77		
	300	0.232	11.11		
	310	0.248	11.69		
N315E	315	0.251	11.80	60.7 km	52.7 km
	320	0.248	11.69		
	330	0.232	11.11		
	340	0.223	10.77		
	350	0.235	11.22		

<u>Maxima:</u>	N063E	23.80 dBk
	N207E	23.80 dBk
<u>Minima:</u>	N293E	10.77 dBk
	N337E	10.77 dBk



Proposal Number

Revision

Date

29 Dec 2003

Call Letters

Channel

47

Location

Columbia, SC

Customer

Roberts

Antenna Type

TFU-22GTH-R 4BP300

AZIMUTH PATTERN

Gain

3.00 (4.77 dB)

Frequency

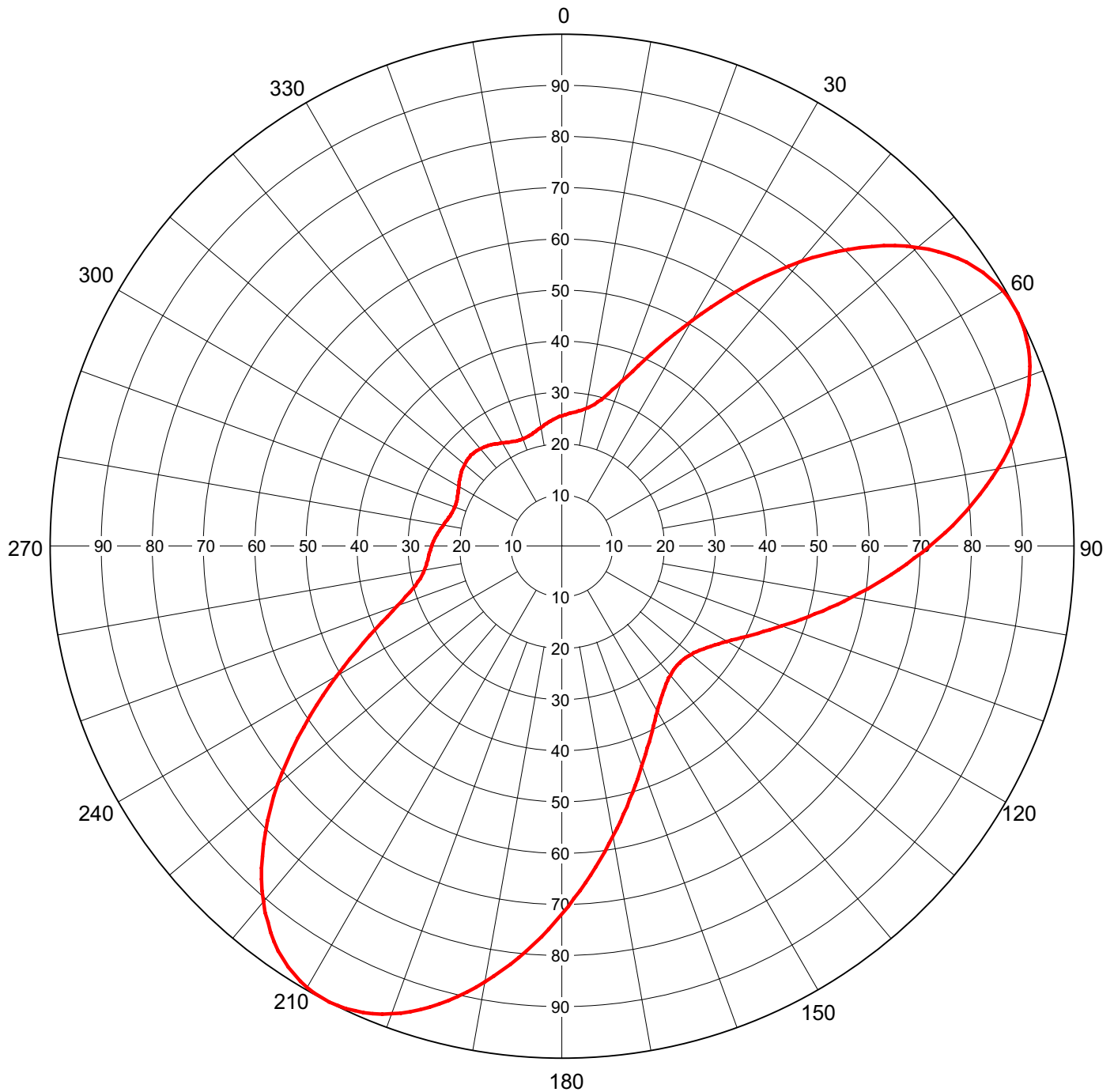
671 MHz

Calculated / Measured

Calculated

Drawing #

TFU-4BP300-6710



Remarks:

Exhibit 1a



Proposal Number
 Date **29 Dec 2003**
 Call Letters
 Location **Columbia, SC**
 Customer **Roberts**
 Antenna Type **TFU-22GTH-R 4BP300**

Revision
 Channel **47**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TFU-4BP300-6710**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.254	45	0.824	90	0.719	135	0.324	180	0.719	225	0.824	270	0.254	315	0.251
1	0.256	46	0.842	91	0.704	136	0.324	181	0.734	226	0.805	271	0.253	316	0.251
2	0.257	47	0.860	92	0.689	137	0.325	182	0.749	227	0.786	272	0.251	317	0.250
3	0.259	48	0.876	93	0.674	138	0.326	183	0.764	228	0.766	273	0.249	318	0.250
4	0.260	49	0.892	94	0.660	139	0.328	184	0.779	229	0.745	274	0.247	319	0.249
5	0.262	50	0.907	95	0.645	140	0.330	185	0.794	230	0.724	275	0.245	320	0.248
6	0.264	51	0.921	96	0.631	141	0.332	186	0.808	231	0.703	276	0.243	321	0.247
7	0.265	52	0.933	97	0.617	142	0.335	187	0.823	232	0.681	277	0.241	322	0.246
8	0.268	53	0.945	98	0.603	143	0.338	188	0.837	233	0.659	278	0.239	323	0.244
9	0.270	54	0.955	99	0.589	144	0.342	189	0.851	234	0.637	279	0.237	324	0.243
10	0.273	55	0.965	100	0.576	145	0.346	190	0.865	235	0.615	280	0.235	325	0.241
11	0.276	56	0.973	101	0.563	146	0.351	191	0.878	236	0.594	281	0.233	326	0.239
12	0.280	57	0.981	102	0.550	147	0.356	192	0.891	237	0.572	282	0.231	327	0.238
13	0.284	58	0.986	103	0.537	148	0.361	193	0.904	238	0.550	283	0.229	328	0.236
14	0.290	59	0.992	104	0.525	149	0.367	194	0.915	239	0.529	284	0.228	329	0.234
15	0.296	60	0.995	105	0.513	150	0.373	195	0.927	240	0.509	285	0.226	330	0.232
16	0.303	61	0.998	106	0.501	151	0.380	196	0.937	241	0.488	286	0.225	331	0.231
17	0.311	62	0.999	107	0.489	152	0.387	197	0.947	242	0.469	287	0.224	332	0.229
18	0.321	63	1.000	108	0.479	153	0.394	198	0.956	243	0.450	288	0.224	333	0.228
19	0.330	64	0.999	109	0.468	154	0.402	199	0.965	244	0.432	289	0.223	334	0.226
20	0.342	65	0.997	110	0.457	155	0.410	200	0.972	245	0.414	290	0.223	335	0.225
21	0.354	66	0.994	111	0.447	156	0.419	201	0.980	246	0.398	291	0.223	336	0.224
22	0.368	67	0.990	112	0.438	157	0.428	202	0.985	247	0.382	292	0.223	337	0.223
23	0.382	68	0.985	113	0.428	158	0.438	203	0.990	248	0.368	293	0.223	338	0.223
24	0.398	69	0.980	114	0.419	159	0.447	204	0.994	249	0.354	294	0.224	339	0.223
25	0.414	70	0.972	115	0.410	160	0.457	205	0.997	250	0.342	295	0.225	340	0.223
26	0.432	71	0.965	116	0.402	161	0.468	206	0.999	251	0.330	296	0.226	341	0.223
27	0.450	72	0.956	117	0.394	162	0.479	207	1.000	252	0.321	297	0.228	342	0.224
28	0.469	73	0.947	118	0.387	163	0.489	208	0.999	253	0.311	298	0.229	343	0.224
29	0.488	74	0.937	119	0.380	164	0.501	209	0.998	254	0.303	299	0.231	344	0.225
30	0.509	75	0.927	120	0.373	165	0.513	210	0.995	255	0.296	300	0.232	345	0.226
31	0.529	76	0.915	121	0.367	166	0.525	211	0.992	256	0.290	301	0.234	346	0.228
32	0.550	77	0.904	122	0.361	167	0.537	212	0.986	257	0.284	302	0.236	347	0.229
33	0.572	78	0.891	123	0.356	168	0.550	213	0.981	258	0.280	303	0.238	348	0.231
34	0.594	79	0.878	124	0.351	169	0.563	214	0.973	259	0.276	304	0.239	349	0.233
35	0.615	80	0.865	125	0.346	170	0.576	215	0.965	260	0.273	305	0.241	350	0.235
36	0.637	81	0.851	126	0.342	171	0.589	216	0.955	261	0.270	306	0.243	351	0.237
37	0.659	82	0.837	127	0.338	172	0.603	217	0.945	262	0.268	307	0.244	352	0.239
38	0.681	83	0.823	128	0.335	173	0.617	218	0.933	263	0.265	308	0.246	353	0.241
39	0.703	84	0.808	129	0.332	174	0.631	219	0.921	264	0.264	309	0.247	354	0.243
40	0.724	85	0.794	130	0.330	175	0.645	220	0.907	265	0.262	310	0.248	355	0.245
41	0.745	86	0.779	131	0.328	176	0.660	221	0.892	266	0.260	311	0.249	356	0.247
42	0.766	87	0.764	132	0.326	177	0.674	222	0.876	267	0.259	312	0.250	357	0.249
43	0.786	88	0.749	133	0.325	178	0.689	223	0.860	268	0.257	313	0.250	358	0.251
44	0.805	89	0.734	134	0.324	179	0.704	224	0.842	269	0.256	314	0.251	359	0.253

Remarks:

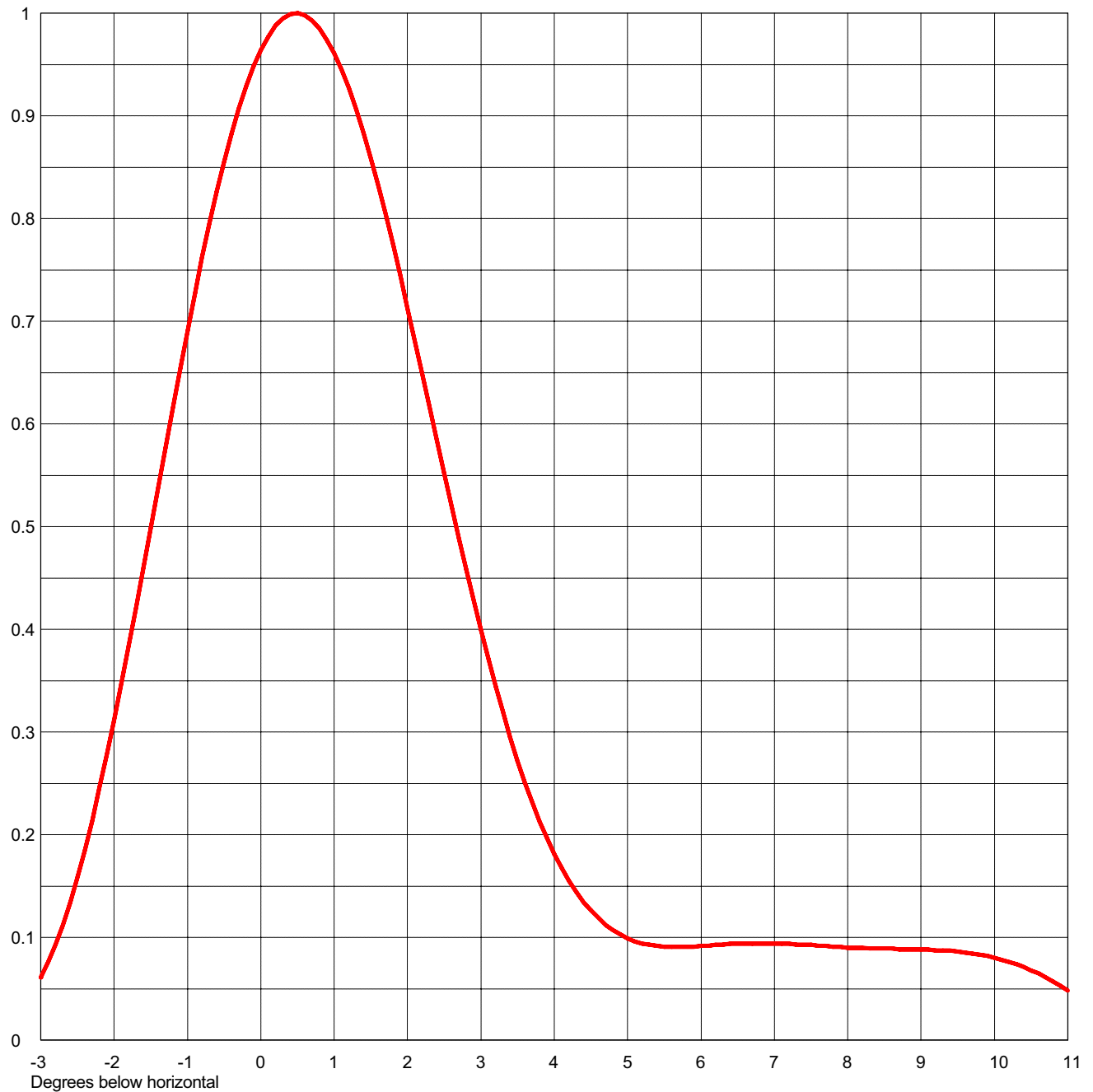
Exhibit 1b



Proposal Number		Revision	
Date	29 Dec 2003		
Call Letters		Channel	47
Location	Columbia, SC		
Customer	Roberts		
Antenna Type	TFU-22GTH-R 4BP300		

ELEVATION PATTERN

RMS Gain at Main Lobe	19.0 (12.79 dB)	Beam Tilt	0.50 Degrees
RMS Gain at Horizontal	17.7 (12.48 dB)	Frequency	671.00 MHz
Calculated / Measured	Calculated	Drawing #	22G190050



Remarks:

Exhibit 1c



Proposal Number
 Date **29 Dec 2003**
 Call Letters
 Location **Columbia, SC**
 Customer **Roberts**
 Antenna Type **TFU-22GTH-R 4BP300**

Revision
 Channel **47**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **22G190050-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.101	2.4	0.584	10.6	0.065	30.5	0.035	51.0	0.026	71.5	0.012
-9.5	0.145	2.6	0.520	10.8	0.057	31.0	0.041	51.5	0.010	72.0	0.016
-9.0	0.162	2.8	0.458	11.0	0.048	31.5	0.036	52.0	0.002	72.5	0.020
-8.5	0.143	3.0	0.399	11.5	0.023	32.0	0.021	52.5	0.009	73.0	0.025
-8.0	0.088	3.2	0.344	12.0	0.005	32.5	0.003	53.0	0.011	73.5	0.030
-7.5	0.009	3.4	0.295	12.5	0.031	33.0	0.015	53.5	0.008	74.0	0.035
-7.0	0.077	3.6	0.251	13.0	0.049	33.5	0.026	54.0	0.001	74.5	0.039
-6.5	0.148	3.8	0.213	13.5	0.057	34.0	0.028	54.5	0.012	75.0	0.043
-6.0	0.186	4.0	0.181	14.0	0.055	34.5	0.021	55.0	0.025	75.5	0.047
-5.5	0.184	4.2	0.155	14.5	0.045	35.0	0.005	55.5	0.038	76.0	0.050
-5.0	0.147	4.4	0.134	15.0	0.031	35.5	0.015	56.0	0.050	76.5	0.053
-4.5	0.092	4.6	0.119	15.5	0.019	36.0	0.036	56.5	0.059	77.0	0.055
-4.0	0.042	4.8	0.107	16.0	0.012	36.5	0.052	57.0	0.064	77.5	0.056
-3.5	0.025	5.0	0.099	16.5	0.013	37.0	0.061	57.5	0.065	78.0	0.056
-3.0	0.061	5.2	0.094	17.0	0.020	37.5	0.059	58.0	0.062	78.5	0.057
-2.8	0.093	5.4	0.092	17.5	0.029	38.0	0.048	58.5	0.054	79.0	0.056
-2.6	0.134	5.6	0.091	18.0	0.035	38.5	0.029	59.0	0.043	79.5	0.055
-2.4	0.185	5.8	0.091	18.5	0.035	39.0	0.006	59.5	0.030	80.0	0.053
-2.2	0.245	6.0	0.092	19.0	0.025	39.5	0.016	60.0	0.015	80.5	0.051
-2.0	0.311	6.2	0.093	19.5	0.006	40.0	0.035	60.5	0.000	81.0	0.049
-1.8	0.384	6.4	0.094	20.0	0.018	40.5	0.046	61.0	0.015	81.5	0.046
-1.6	0.460	6.6	0.094	20.5	0.043	41.0	0.049	61.5	0.028	82.0	0.044
-1.4	0.538	6.8	0.094	21.0	0.062	41.5	0.042	62.0	0.039	82.5	0.040
-1.2	0.616	7.0	0.094	21.5	0.072	42.0	0.029	62.5	0.047	83.0	0.037
-1.0	0.691	7.2	0.094	22.0	0.069	42.5	0.012	63.0	0.053	83.5	0.034
-0.8	0.762	7.4	0.093	22.5	0.056	43.0	0.005	63.5	0.056	84.0	0.031
-0.6	0.826	7.6	0.092	23.0	0.037	43.5	0.019	64.0	0.056	84.5	0.027
-0.4	0.882	7.8	0.091	23.5	0.018	44.0	0.027	64.5	0.053	85.0	0.024
-0.2	0.929	8.0	0.090	24.0	0.005	44.5	0.028	65.0	0.049	85.5	0.021
0.0	0.964	8.2	0.090	24.5	0.002	45.0	0.020	65.5	0.044	86.0	0.017
0.2	0.988	8.4	0.089	25.0	0.010	45.5	0.005	66.0	0.037	86.5	0.014
0.4	0.999	8.6	0.089	25.5	0.029	46.0	0.014	66.5	0.031	87.0	0.011
0.6	0.998	8.8	0.088	26.0	0.052	46.5	0.036	67.0	0.024	87.5	0.009
0.8	0.985	9.0	0.088	26.5	0.075	47.0	0.057	67.5	0.018	88.0	0.006
1.0	0.961	9.2	0.087	27.0	0.092	47.5	0.074	68.0	0.013	88.5	0.004
1.2	0.927	9.4	0.087	27.5	0.096	48.0	0.085	68.5	0.009	89.0	0.002
1.4	0.883	9.6	0.085	28.0	0.088	48.5	0.089	69.0	0.007	89.5	0.001
1.6	0.832	9.8	0.083	28.5	0.067	49.0	0.086	69.5	0.005	90.0	0.000
1.8	0.775	10.0	0.080	29.0	0.039	49.5	0.076	70.0	0.005		
2.0	0.713	10.2	0.076	29.5	0.008	50.0	0.061	70.5	0.006		
2.2	0.649	10.4	0.071	30.0	0.018	50.5	0.044	71.0	0.009		

Remarks:

Exhibit 1d