

TECHNICAL EXHIBIT  
APPLICATION FOR CONSTRUCTION PERMIT  
TV TRANSLATOR STATION K58FY  
LAKE GEORGE, COLORADO

December 17, 2003

CHANNEL 29(-) 1.2 KW

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Technical Statement

This Technical Exhibit was prepared in support of a displacement application for TV Translator station K58FY, Lake George, Colorado (FCC File No. BLTT-19870706IA / Facility ID 142). The instant application proposes operation on Channel 29(-) with a nominal non-directional peak visual effective radiated power (ERP) of 1.2 kW. There is no change in the location of the transmitting antenna. However, the transmitting antenna radiation center height has been adjusted by 1-meter to account for the change in the length of the transmitting antenna from Channel 58 to Channel 29.

Proposed Facilities

The proposed facility will operate on Channel 29 (560-566 MHz) with a "minus" carrier frequency offset using a Kathrein-Scala, model SL-8 omni-directional antenna. The maximum ERP will be 1.2 kW at any horizontal or vertical angle. The antenna will be mounted on an existing tower situated on Badger Mountain, which is located approximately 15 km northwest of Lake George. The overall height of the antenna structure will be 30 m AGL (3453 m AMSL). The antenna radiation center height above ground will be 27 m, with a radiation center height above mean sea level of 3450 m. The antenna structure does not require registration with the FCC.

Response to Paragraph 13(a) – TV Broadcast Analog Protection

An allocation study has been conducted pursuant to the provisions of Section 74.705 of the FCC Rules. The proposed facility meets the contour overlap and spacing requirements with respect to all pertinent analog TV broadcast facilities with the exception of the following:

- KTFD-TV, Boulder, CO, Ch. 14, (FCC File No. BMPCT-19920612KG)
- KTFD-TV, Boulder, CO, Ch. 14, (FCC File No. BMPCT-19960716KL)

Pursuant to Section 74.705(e) of the FCC Rules, a waiver of the interference protection rules is requested to permit the use of the Longley-Rice propagation methodology as provided in FCC OET Bulletin No. 69 (OET-69) with respect to the above facilities. As detailed in Figure 2 herein, the proposed facility meets the 0.5% “rounding tolerance” criteria for interference with respect to all of the above facilities.

Response to Paragraph 13(b) – DTV Station Protection

An allocation study has been conducted pursuant to the provisions of Section 74.706 of the FCC Rules. The proposed facility meets the contour overlap requirements with respect to all pertinent facilities pursuant to Section 74.706 of the FCC Rules with the exception of the following:

- KDEN-DT, Longmont, CO, Ch. 29, (FCC File No. BPCDT-19991018AAS)
- KDEN-DT, Longmont, CO, Ch. 29, (DTV Allotment)

If necessary, a waiver of the interference protection rules of Section 74.706 is requested to permit the use of the Longley-Rice propagation methodology as provided in FCC OET Bulletin No. 69 (OET-69) with respect to the above facilities. Calculations based on OET-69 indicate that the proposed operation on Channel 29 complies with the FCC’s

0.5% “rounding tolerance” criteria for interference with respect to the KDEN-DT facilities listed above. Figure 3 provides a summary of the output of a study based on OET-69, which demonstrates that the proposed operation complies with the FCC’s DTV interference protection criteria.

Response to Paragraph 13(c) – LPTV/TV Translator/Class A TV Protection

An allocation study has been conducted pursuant to the provisions of Section 74.707 of the FCC Rules. The proposed facility meets the contour overlap requirements pursuant to Section 74.707 of the FCC Rules with respect to all pertinent facilities with the exception of the following:

- K29CK, Carbondale, CO, Ch. 29(-), (FCC File No. BLTT-19920414IC)

Pursuant to Section 74.707(e) of the FCC Rules, a waiver of the interference protection rules is requested to permit the use of the Longley-Rice propagation methodology as provided in OET-69 with respect to the above facilities. As detailed in Figure 4 herein, the proposed facility meets the 0.5% “rounding tolerance” criteria for interference with respect to the above facility.

Environmental Considerations

With respect to the potential for human exposure to radio frequency (RF) radiation, calculations prepared in accordance with FCC Bulletin OET-65 (Edition 97-01) indicate that the proposal will not result in human exposure to RF radiation at ground level in excess of FCC standards. Power density calculations were conducted at 2-m above ground\* based on the following conservative assumptions, with the following results:

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\* The radiation center height above ground is 27 m.

Call Sign	Channel	Peak Visual ERP or Average ERP (kW)	Aural ERP (kW)	Relative Field Factor <sup>†</sup>	FCC Limit <sup>‡</sup> (mW/cm <sup>2</sup> )	Percentage of Limit
K58FY	29	1.2	0.12	0.30	0.375	0.77%

As indicated above, the exposure to RF radiation at 2-m above ground level will not exceed 0.77% of the FCC limit for general population / uncontrolled exposure.

Therefore, the proposal complies with the FCC limits for human exposure to RF radiation and it is categorically excluded from environmental processing. The applicant, in coordination with other users of the transmission facility, shall reduce power or cease operation as necessary to protect persons having access to the tower or antenna from RF radiation in excess of the FCC guidelines.

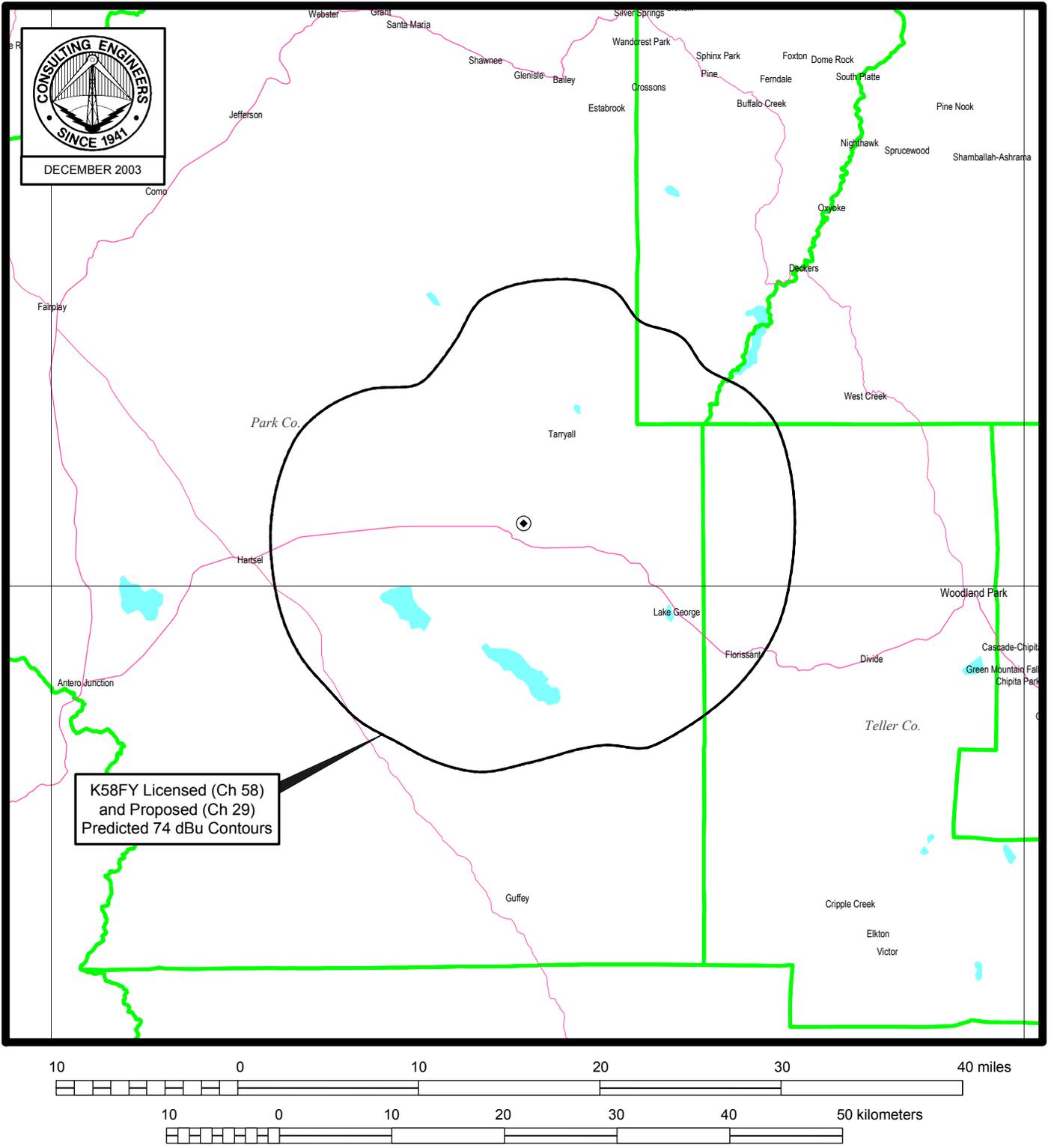
Louis Robert du Treil, Jr.

du Treil, Lundin & Rackley, Inc.  
201 Fletcher Ave.  
Sarasota, FL 34237

December 17, 2003

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<sup>†</sup> This relative field level is not exceeded for elevation angles greater than 7° below horizontal.  
<sup>‡</sup> for general population/uncontrolled environments



## PREDICTED 74 dBu COVERAGE COMPARISON

TV TRANSLATOR STATION K58FY  
 LAKE GEORGE, COLORADO  
 CHANNEL 29(-) 1.2 KW

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

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Summary of OET-69 Analysis with Respect to TV Stations

Stations Potentially Affected by Proposed Station							
Facility Number	Channel	Call	City State	Distance (km)	Status	Application Prefix	Application Reference Number
1	14	KTFD-TV	BOULDER CO	73.5	CP MOD	BMPCT	19920612KG
2	14	KTFD-TV	BOULDER CO	73.5	APP	BMPCT	19960716KL

Summary of Interference Analysis for Worst-Case Scenarios							
Facility Number	Interference Population Before Analysis	Interference Population After Analysis	Baseline Population	Net Change in Interference	Percent of Baseline	Permissible Percent of Baseline	Result
1	--	--	--	*	0.50	--	pass
2	--	--	--	*	0.50	--	pass

\* Proposal causes no interference.

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Summary of OET-69 Analysis with Respect to DTV Stations

Stations Potentially Affected by Proposed Station							
Facility Number	Channel	Call	City State	Distance (km)	Status	Application Prefix	Application Reference Number
1	29	KDEN	LONGMONT CO	127.6	CP	BPCDT	19991018AAS
2	29	KDEN-DT	LONGMONT CO	127.6	PLN	DTVPLN	DTVP0738

Summary of Interference Analysis for Worst-Case Scenarios							
Facility Number	Interference Population Before Analysis	Interference Population After Analysis	Baseline Population	Net Change in Interference	Percent of Baseline	Permissible Percent of Baseline	Result
1	788	2623	2147980	1835	0.085	--	pass
2	1734	7108	2147980	5374	0.250	--	pass

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Summary of OET-69 Analysis with Respect to LPTV/TV Translator Stations

Stations Potentially Affected by Proposed Station							
Facility Number	Channel	Call	City State	Distance (km)	Status	Application Prefix	Application Reference Number
1	29	K29CK	CARBONDALE CO	165.4	LIC	BLTT	19920414IC

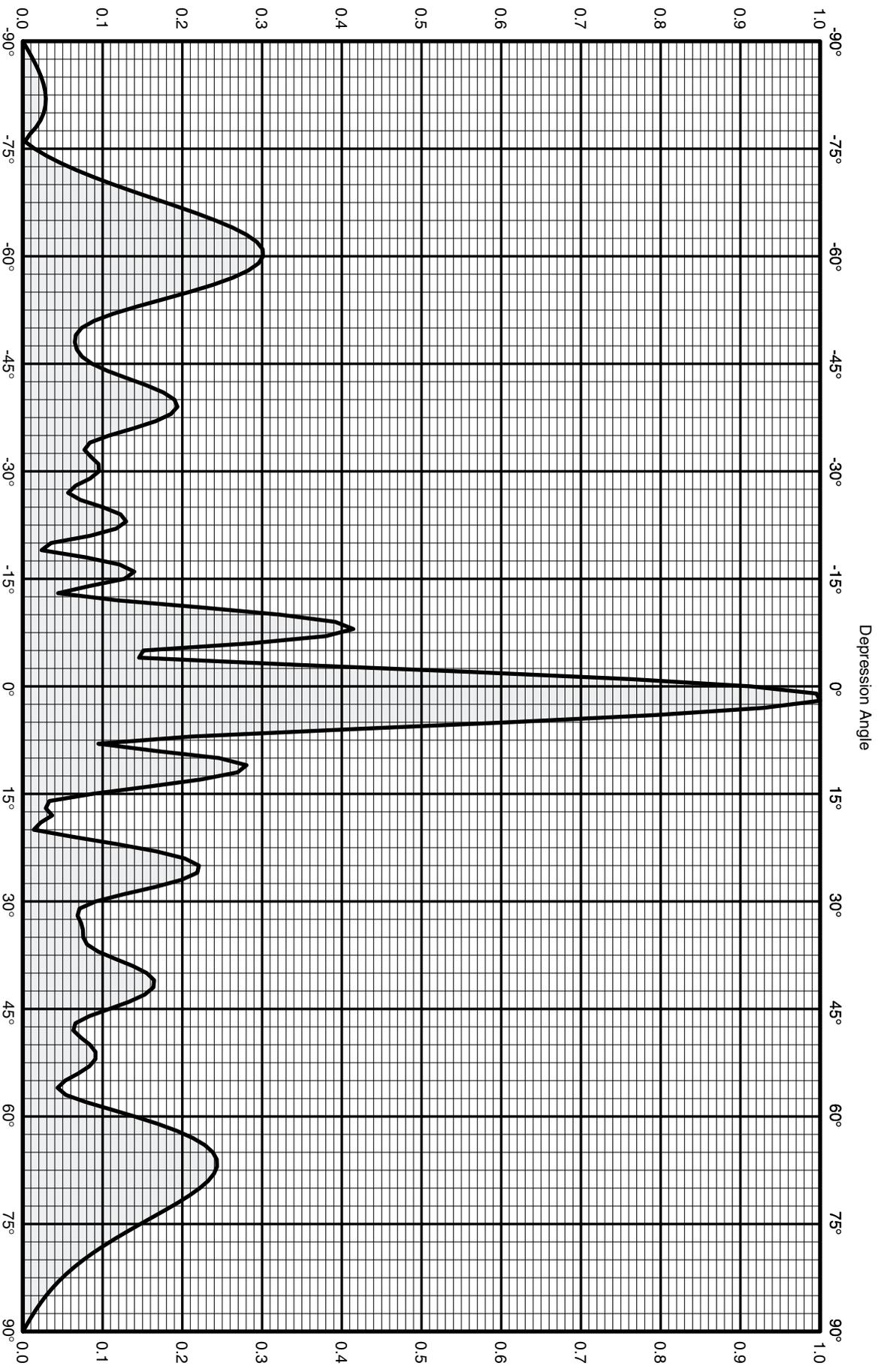
Summary of Interference Analysis for Worst-Case Scenarios							
Facility Number	Interference Population Before Analysis	Interference Population After Analysis	Baseline Population	Net Change in Interference	Percent of Baseline	Permissible Percent of Baseline	Result
1	--	--	--	*	0.50	--	pass

\* Proposal causes no interference.

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Transmitting Antenna Manufacturer's Data Sheets

(two sheets follow)



SL-8 Paraslot UHF-TV Antenna  
 With 1.75 deg electrical downtilt  
 Maximum gain: 11.4 dBd  
 Power multiplier: 13.8



Post Office Box 4580  
 Medford, OR 97501 (USA)  
 Phone: (541) 779-6500  
 Fax: (541) 779-3991  
<http://www.kathrein-scala.com>

SL-8 Paraslot UHF-TV Antenna  
 With 1.75 deg electrical downtilt  
 Maximum gain: 11.4 dBd  
 Power multiplier: 13.8  
 Horizontal polarization  
 Vertical radiation pattern

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
0	0.913	-0.8	10.6	11.482	42	0.164	-15.7	-4.3	0.372
1	0.995	0.0	11.4	13.804	43	0.153	-16.3	-4.9	0.324
2	1.000	0.0	11.4	13.804	44	0.133	-17.5	-6.1	0.245
3	0.929	-0.6	10.8	12.023	45	0.108	-19.3	-7.9	0.162
4	0.793	-2.0	9.4	8.710	46	0.083	-21.6	-10.2	0.095
5	0.611	-4.3	7.1	5.129	47	0.066	-23.6	-12.2	0.060
6	0.407	-7.8	3.6	2.291	48	0.063	-24.0	-12.6	0.055
7	0.211	-13.5	-2.1	0.617	49	0.073	-22.8	-11.4	0.072
8	0.095	-20.5	-9.1	0.123	50	0.084	-21.5	-10.1	0.098
9	0.166	-15.6	-4.2	0.380	51	0.091	-20.8	-9.4	0.115
10	0.246	-12.2	-0.8	0.832	52	0.091	-20.8	-9.4	0.115
11	0.281	-11.0	0.4	1.096	53	0.083	-21.6	-10.2	0.095
12	0.269	-11.4	0.0	1.000	54	0.070	-23.2	-11.8	0.066
13	0.223	-13.0	-1.6	0.692	55	0.053	-25.5	-14.1	0.039
14	0.157	-16.1	-4.7	0.339	56	0.044	-27.2	-15.8	0.026
15	0.087	-21.2	-9.8	0.105	57	0.054	-25.4	-14.0	0.040
16	0.033	-29.6	-18.2	0.015	58	0.079	-22.0	-10.6	0.087
17	0.029	-30.8	-19.4	0.011	59	0.110	-19.2	-7.8	0.166
18	0.037	-28.7	-17.3	0.019	60	0.140	-17.1	-5.7	0.269
19	0.022	-33.0	-21.6	0.007	61	0.168	-15.5	-4.1	0.389
20	0.014	-37.3	-25.9	0.003	62	0.193	-14.3	-2.9	0.513
21	0.064	-23.9	-12.5	0.056	63	0.213	-13.4	-2.0	0.631
22	0.118	-18.6	-7.2	0.191	64	0.228	-12.8	-1.4	0.724
23	0.167	-15.6	-4.2	0.380	65	0.238	-12.5	-1.1	0.776
24	0.203	-13.9	-2.5	0.562	66	0.243	-12.3	-0.9	0.813
25	0.221	-13.1	-1.7	0.676	67	0.244	-12.3	-0.9	0.813
26	0.219	-13.2	-1.8	0.661	68	0.240	-12.4	-1.0	0.794
27	0.199	-14.0	-2.6	0.550	69	0.232	-12.7	-1.3	0.741
28	0.165	-15.6	-4.2	0.380	70	0.222	-13.1	-1.7	0.676
29	0.126	-18.0	-6.6	0.219	71	0.209	-13.6	-2.2	0.603
30	0.091	-20.8	-9.4	0.115	72	0.195	-14.2	-2.8	0.525
31	0.071	-23.0	-11.6	0.069	73	0.179	-14.9	-3.5	0.447
32	0.068	-23.3	-11.9	0.065	74	0.163	-15.7	-4.3	0.372
33	0.073	-22.7	-11.3	0.074	75	0.147	-16.6	-5.2	0.302
34	0.075	-22.5	-11.1	0.078	76	0.132	-17.6	-6.2	0.240
35	0.076	-22.4	-11.0	0.079	77	0.116	-18.7	-7.3	0.186
36	0.080	-21.9	-10.5	0.089	78	0.102	-19.8	-8.4	0.145
37	0.094	-20.5	-9.1	0.123	79	0.088	-21.1	-9.7	0.107
38	0.116	-18.7	-7.3	0.186	80	0.076	-22.4	-11.0	0.079
39	0.138	-17.2	-5.8	0.263	81	0.065	-23.8	-12.4	0.058
40	0.155	-16.2	-4.8	0.331	82	0.054	-25.3	-13.9	0.041
41	0.165	-15.7	-4.3	0.372	83	0.045	-27.0	-15.6	0.028
					84	0.037	-28.8	-17.4	0.018
					85	0.029	-30.7	-19.3	0.012
					86	0.022	-33.0	-21.6	0.007
					87	0.016	-35.8	-24.4	0.004
					88	0.010	-39.6	-28.2	0.002
					89	0.005	-45.7	-34.3	0.000
					90	0.000	-99.9	-88.5	0.000

**KATHREIN**  
**SCALA DIVISION**

Post Office Box 4580 Phone:(541)779-6500  
 Medford, OR 97501 (USA) Fax:(541)779-3991  
<http://www.kathrein-scala.com>