Target Submission Number: 16-07

Appendix 1

Target Array and Energy Propagation Calculations

TITLE: Irradiation of Th foil at 160 MeV, transport to TPL

Target Array Number: 16-07

Preparer: Mausner/Medvedev

Energy: 160 MeV Rastered beam

	Layer	Material	density	thickness inches	thickness mm	Ei	Eout	dE
1	Be window	Berillium	1.85	0.0120	0.3048	160.00	159.76	0.24
2	AlBeMet window	AlBeMet	2.10	0.0120	0.3048	159.76	159.49	0.27
3	Beamline window	stainless steel	8.00	0.0310	0.7874	159.49	157.20	2.29
4	water gap	water	1.00	0.1060	2.6924	157.20	155.88	1.32
5	box window	stainless steel	8.00	0.0200	0.51	155.88	154.38	1.50
6	water gap	water	1.00	0.2000	5.08	154.38	151.62	2.76
7	Cu degrader	Cu	8.96	0.0950	2.41	151.62	143.56	8.06
8	vacuum	0	0.00	2.1490	54.58	143.56	143.56	0.00
9	Cu degrader	Cu	8.96	0.0620	1.58	143.56	138.13	5.43
10	water gap	water	1.00	0.2000	5.08	138.13	135.15	2.98
11	Th can window	Inconel	8.43	0.0200	0.51	135.15	133.40	1.75
12	Th metal puck	Th	11.70	0.1200	3.05	133.40	123.04	10.36
13	Th can window	Inconel	8.43	0.0200	0.51	123.04	121.17	1.87
14	water end of the box	water	1.00	0.3190	8.10	121.17	115.91	5.27
15	Front box back window	stainless steel	8.00	0.0200	0.5080	115.91	114.06	1.85
16	water gap between boxes windows	water	1.00	0.1500	3.8100	114.06	111.14	2.92
17	Back box front window	stainless steel	8.00	0.0200	0.5080	111.14	109.22	1.92
18	water gap	water	1.00	0.2000	5.0800	109.22	105.73	3.49
19	Stainless steel	stainless steel	8.00	0.0290	0.7366	105.73	102.84	2.89
20	vacuum	vacuum		0.5960	15.1384	102.84	102.84	0.00
21	Stainless steel	stainless steel	8.00	0.0290	0.7366	102.84	99.89	2.95
22	water gap	water	1.00	0.2000	5.0800	99.89	96.10	3.79
23	can window	inconel	8.43	0.0120	0.3048	96.10	94.89	1.21
24	RbCl salt	RbCl	2.20	0.646	16.3980	94.89	75.38	19.51
25	can window	inconel	8.43	0.0120	0.3048	75.38	73.58	1.80
26	water gap	water	1.00	0.2000	5.0800	73.58	69.52	4.06
27	can window	inconel	8.43	0.0120	0.3048	69.52	66.99	2.53
28	RbCl salt	RbCl	2.20	0.5000	12.7010	66.99	46.48	20.51
29	can window	inconel	8.43	0.0120	0.3048	46.48	43.72	2.76
30	water gap	water	1.00	0.2000	5.0800	43.72	36.16	7.56
31	Cu beam stop	Cu	8.96	0.2200	5.5880	36.16	stop	36.16
32	water gap	water	1.00	0.2280	5.7912	0.00	0.00	0.00

RSC Approval: Tom Bearis

Date Approved: DB 6/18/16

Target Submission Number:16-07_____

Appendix 2

Target Loading Table

Title: Irradiation of Th foil at 160 MeV, transport to TPL

Target Array Number: 16-07

Preparer: Mausner/Medvedev

Proposed Run Time (e.g. days, hrs.): 4

Desired Completion Date: 07/19/2016

Requested Beam Energy (MeV): 160 | Requested Beam Current (μA): 130

	Item	Type and stamped ID (*if available*)	Layer #'s from "Target Array and Energy Propagation Calculations"	Thickness *inch*	BLIP Operator *(Initial)*	Witness *(Initial)*
Box 1	Water gap	n/a	6	0.200		
	Cu degrader (vacuum)	2.306 OAL	7-9	2.306		
	Water gap	n/a	10	0.200		
	Th target		11-13	0.160		
Box 2	Water gap	n/a	18	0.200		
	SS vacuum degrader	BUU	19-21	0.654		
	Water gap	n/a	22	0.200		
	1st RbCl		23-25	0.670		
	Water gap	n/a	26	0.200		
	2nd RbCl		27-29	0.524		
	Water gap	n/a	30	0.200		
	Cu beam stop		31	0.220		

RSC Approval: Tom Bevins **Date Approved:** 7/18/16