Appendix 2

Target Loading Table

Title: GaAs Cross Section Array #1: 20160518AJD

Target Array: TA15_07(d)

Preparer: Anthony J. DeGraffenreid

Proposed Run Time (e.g. days, hrs.): 2 hours

Desired Completion Date: Wednesday, May 18th 2016

Requested Beam Energy (MeV): 116.5 gaussian

Requested Beam Current (μA/h): 40

	Item	Type and stamped ID (*if available*)	Thickness *inch*	Thickness *mm*	BLIP Operator *(Initial)*	Witness *(Initial)*
Box 1	Water gap	n/a	0.2	5.08		
	GaAs Tgt #1	**CBN**	0.5	12.7		
	Water gap	n/a	0.1	2.54		
	Aluminum Degrader	0.198" with 0.1" water gap	0.198	5.03		
	Water gap	n/a	0.2	5.08		
	GaAs Tgt #2	**CBO**	0.5	12.7		
	Water gap	n/a	0.2	5.08		
	GaAs Tgt #3	**CBP**	0.5	12.7		
	Water gap	n/a	0.1	2.54		
	Aluminum Degrader	0.354" with 0.1" water gap	0.354	8.992		

RSC Approval: Dana Beavis **Date Approved:** 5/10/16

Appendix 1

Target Array and Energy Propagation Calculations

Title: GaAs Cross Section Array #1: 20160518AJD
Target Submission: TS15_07(d)
Target Array: TA15_07(d)
Preparer: Anthony J. DeGraffenreid

The BLIP Target Stack - GaAs - 2016

vary water gap(mm): 2.692

Layer No.	Material in Beam	density(g/cm^3)	thickness (inches)	thickness (mm)	KE (MeV in)	Range(mm)	KE (MeV out) 116.5	Delta E (MeV)
1	Beryllium	1.85	0.012	0.305	116.500	66.780	116.190	0.31
2	AlBeMet	2.10	0.012	0.305	116.190	59.670	115.850	0.34
3	Stainless Steel window	7.99	0.031	0.787	115.850	18.180	112.930	2.92
4	Water	1.00	0.106	2.692	112.930	94.800	111.100	1.83
5	Stainless Steel window	7.99	0.020	0.508	111.100	16.910	109.190	1.91
7	Water	1.00	0.200	5.080	109.190	89.310	105.650	3.54
8	Al Target Front	2.70	0.020	0.508	105.650	40.664	104.900	0.75
9	Al Monitor Foil	2.70	0.001	0.025	104.900	40.185	104.900	0.00
10	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.30
11	Al Target Back	2.70	0.181	4.597	104.600	40.000	97.640	6.96
12	Water Back of Aluminum	1.00	0.298	7.569	97.640	73.210	91.840	5.80
13	Water	1.00	0.100	2.540	91.840	65.640	89.830	2.01
14	Aluminum Degrader	2.70	0.198	5.029	89.830	30.557	81.140	8.69
17	Water	1.00	0.200	5.080	81.140	52.600	76.670	4.47
18	Al Target Front	2.70	0.020	0.508	76.670	23.092	75.710	0.96
19	Al Monitor Foil	2.70	0.001	0.025	75.710	22.583	75.660	0.05
20	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.36
21	Al Target Back	2.70	0.181	4.597	75.300	22.365	66.140	9.16
22	Water Back of Aluminum	1.00	0.298	7.569	66.140	36.450	58.120	8.02
23	Water	1.00	0.200	5.080	58.120	28.880	52.200	5.92
24	Al Target Front	2.70	0.020	0.508	52.200	11.664	50.910	1.29
25	Al Monitor Foil	2.70	0.001	0.025	50.910	11.155	50.840	0.07
26	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.54
27	Al Target Back	2.70	0.181	4.597	50.300	10.919	37.000	13.30
28	Water Back of Aluminum	1.00	0.298	7.569	37.000	12.780	22.510	14.49
29	Water	1.00	0.100	2.540	22.510	5.209	15.520	6.99
30	Aluminum Degrader	2.70	0.354	8.992	15.520	1.356	#N/A	15.52
31	Water	1.00	0.2	5.080	#N/A	#N/A	#N/A	#N/A

Raster (On/Off)	[redacted]
Beam Energy (MeV)	[redacted]
Current (uA)	[redacted]
Target Holder	[redacted]
Irradiation Time (min)	[redacted]
Beam Energy on Target (MeV)	[redacted]

	Inches	Millimeters
Thickness in Box 1	2.87	72.786
MaxTotalThickness in Box 1	2.87	72.837
Space Left in Box 1	0.002	0.051

RSC Approval: Jim Beaver	Date Approved: May 10, 2016