

 **Eckert & Ziegler**  
Analytics

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Atlanta, Georgia 30318

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07 February 2018

Attn: Document Control Desk/Exempt Distribution

Office of Federal & State Materials And  
Environmental Management Programs  
Division of Materials Safety and State Agreements  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

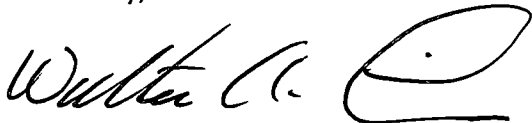
Re: Radioactive Materials License 10-23988-01E  
Docket 030-38320  
10 CFR 32.20 Report of materials transferred for use under 10 CFR 30.18

To whom it may concern:

Please find enclosed Eckert & Ziegler Analytics distribution report for the 2017 calendar year per 10 CFR 32.20. Eckert & Ziegler Analytics distributed a total of 257 sources under e-license 10-23988-01E during the period of 1 January 2017 through 31 December 2017: 205 liquid sources, 52 solid sources, and 0 gas sources.

Should you have any questions, please contact me at 404-352-8677 (main), 404-425-5026 (direct), or via e-mail at walter.levich@ezag.com.

Sincerely,



Walter A. Levich  
Plant Manager  
Radiation Safety Officer

NMSS03

Appendix: 10 CFR 32.20 Report of materials transferred for use under 10 CFR 30.18

Page 1 of 2

Time period covered: 1-January-2017 through 31-December-2017

Description: Liquid Calibration and Reference Sources:

<b>Liquid / Liquid Scintillation Calibration Standards</b>			
<u>NUCLIDE</u>	<u>Model #</u>	<u>PRODUCT QUANTITY</u>	<u>TOTAL ACTIVITY TRANSFERRED (uCi)</u>
C-14	E-C14-QUE, E-C14-UNQ	75	0.9384
H-3	E-H-3-QUE, E-H-3-UNQ	105	2.2542
Co-60	E-CO0-QUE	1	0.001
Co-58	E-CO8-LIQ	1	5
Ni-63	E-NI3-QUE	22	0.281
Cs-137	E-CS7-QUE	1	0.001
<b>Total</b>		<b>205</b>	<b>8.476</b>

<b>Solid Calibration Standards</b>			
<u>NUCLIDE</u>	<u>Model #</u>	<u>PRODUCT QUANTITY</u>	<u>TOTAL ACTIVITY TRANSFERRED (uCi)</u>
C-14	E-C14-VZ1366, E-C14-VZ1964	2	0.1182
Co-60	E-CO0-VZ1370, E-CO0-SOL, E-CO0-VZ497	3	0.162
Bi-207	E-BI7-PNT-25	1	0.1000
Cl-36	E-CL6-VZ628	1	0.027
Cs-137	E-CS7-VZ1366, E-CS7-SOL	40	4.162
Tc-99	E-TC9-VZ628	1	0.162
8400 Mixed Gamma Series (Cd-109, Co-57, Ce-139, Hg-203, Sn-113, Cs-137, Co-60, Y-88)	E-MGS-SOL, E-MGS-PNT,	4	8.50
<b>Total</b>		<b>52</b>	<b>13.2312</b>

**Sum Total**

**257**

**21.7068**

**Exempt Quantity Order Log**

Date Ordered	ESD	SO#	Company	Ship To address	Nuclide	Activity	Activity (Bq)	Activity (uCi)	Exempt Qty limit (uCi)	Exempt EZA model #	Geometry	Number of Items	Date Shipped	Comments
1-Dec-16	5-Jan-17	39218	Cardinal Health-NY	110 Science Parkway Services Rochester, NY 14620	C-14	1.67kBq	1670	0.045	100	E-C14-UNQ	Liquid	1	1-May-2017	
					H-3	4.17kBq	4170	0.113	1000	E-H-3-UNQ	Liquid	1	1-May-2017	
13-Dec-16	17-Jan-17	39255	GMI	Erwin Resin Solutions 151 T.C. Reunnon Road Erwin, TN 37650	C-14	1.67kBq	1670	0.045	100	E-C14-UNQ	Liquid	1	17-Jan-2017	
					H-3	1.67kBq	1670	0.045	1000	E-H-3-UNQ	Liquid	1	17-Jan-2017	
21-Dec-16	17-Jan-17	39309	Lablogic Systems, Inc	1040 E Brandon Blvd. Brandon, FL 33511	C-14	1.67kBq	1670	0.045	100	E-C14-UNQ	Liquid	3	23-Jan-2017	
					H-3	4.17kBq	4170	0.113	1000	E-H-3-UNQ	Liquid	3	23-Jan-2017	
					C-14	1.67kBq	1670	0.045	100	E-C14-UNQ	Liquid	1	6-Feb-2017	
10-Jan-17	6-Feb-17	39350	Beckman Coulter	20 Circle Drive Glen Rock, PA 17327	H-3	1.67kBq	1670	0.045	1000	E-H-3-UNQ	Liquid	1	6-Feb-2017	
					C-14	750Bq	750	0.020	100	E-C14-UNQ	Liquid	1	6-Feb-2017	
10-Jan-17	6-Feb-17	39353	Beckman Coulter	20 Circle Drive Glen Rock, PA 17327	H-3	1.67kBq	1670	0.045	1000	E-H3-UNQ	Liquid	1	6-Feb-2017	
6-Dec-16	20-Jan-17	39229	3M Center	3M Center 3M Health Physics Lab Bldg. 260-6C-12	Co-60	2kBq	2000	0.054	1	E-CO0-SOL	Solid	1	20-Jan-2017	
10-Jan-17	22-Mar-17	39352	Canberra Industries	800 Research Parkway Meriden, CT 06450	Co-60	666Bq	666	0.018	1	E-CO0-VZ1370	Solid	1	15-Mar-2017	
9-Feb-17	9-Mar-17	39533	Beckman Coulter	600 Technology Square Cambridge, MA 02139	C-14	750Bq	750	0.020	100	E-C14-UNQ	Liquid	1	9-Mar-2017	
					H-3	1.67kBq	1670	0.045	1000	E-H3-UNQ	Liquid	1	9-Mar-2017	
14-Feb-17	29-Mar-17	39540	Eastern Technologies	215 2nd Ave Ashford AL 36312	8400	74kBq	74000	2.000	3.5	E-MGS-SOL	Solid	1	29-Mar-2017	MGS (Cd-109,Co-57,Ce-139,Hg-203,Sn-113,Cs-137,Co-60,Y-88)
14-Feb-17	9-Mar-17	39555	Lantheus Medical Imaging	331 Treble Cove Road N Billerica, MA 01862	C-14	1.67kBq	1670	0.045	100	E-C14-UNQ	Liquid	1	15-Mar-2017	
					H-3	4.17kBq	4170	0.113	1000	E-H-3-UNQ	Liquid	1	15-Mar-2017	
27-Feb-17	11-Apr-17	39659	LabLogic	1040 E Brandon Blvd. Brandon, FL 33511	C-14	1.67kBq	1670	0.045	100	E-C14-UNQ	Liquid	4	11-Apr-2017	
					H-3	4.17kBq	4170	0.113	1000	E-H-3-UNQ	Liquid	4	11-Apr-2017	
10-Mar-17	3-Apr-17	39684	Gene Masse	8 Spencer Way East Freetown, MA 02717	C-14	750Bq	750	0.020	100	E-C14-UNQ	Liquid	1	3-Apr-2017	
					H-3	1.67kBq	1670	0.045	1000	E-H3-UNQ	Liquid	1	3-Apr-2017	
13-Mar-17	31-Mar-17	39689	Radiological Solutions Inc.	1840 Moen Avenue Auite A Rockdale IL 60436	Co-58	185kBq	185000	5.000	10	E-CO8-LIQ	Liquid	1	30-Mar-2017	
22-Mar-17	23-May-17	39743	RSO, Inc.	5204 Minnick Rd Laurel, MD 20707	C-14	4kBq	4000	0.108	100	E-C14-VZ1366	Solid	1	8-Jun-2017	
17-Mar-17	4-May-17	39742	Houghton College	1 Willard Avenue Physics Department	Bi-207	3.7kBq	3700	0.100	0.1	E-BI7-PNT-25	Solid	1	4-May-2017	
3-Apr-17	4-May-17	39672	NCM USA	390 Concord Ave Bronx, NY 10454	8400	37kBq	37000	1.000	3.5	E-MGS-PNT	Solid	1	4-May-2017	MGS (Cd-109,Co-57,Ce-139,Hg-203,Sn-113,Cs-137,Co-60,Y-88)
30-Mar-17	16-May-17	39794	U.S. Navy MDMC	814 Radford Blvd Albany, GA 31704	Ni-63	3.7kBq	3700	0.100	10	E-NI3-QUE	Liquid	1	16-May-2017	
6-Apr-17	5-Jun-17	39811	Bridgeport Instruments LLC	11740 Jollyville Rd. Suite 500 Austin, TX 78759	Cl-36	1kBq	1000	0.027	10	E-CL6-VZ628	Solid	1	26-May-2017	
14-Apr-17	5-May-17	39848	LabLogic	1040 E Brandon Blvd. Brandon, FL 33511	C-14	1.67kBq	1670	0.045	100	E-C14-UNQ	Liquid	3	5-May-2017	
					H-3	4.17kBq	4170	0.113	1000	E-H-3-UNQ	Liquid	3	5-May-2017	
14-Apr-17	8-May-17	39851	Marine Biological Lab	7 MBL Street Woods Hole, MA 02543	C-14	1.67kBq	1670	0.045	100	E-C14-UNQ	Liquid	1	5-May-2017	
					H-3	1.67kBq	1670	0.045	1000	E-H-3-UNQ	Liquid	1	5-May-2017	
6-Jun-17	21-Jun-17	40063	Spectron MRC	17490 Dugdale Dr. South Bend, IN 46635	8400	74kBq	74000	2.000	3.5	E-MGS-PNT	Solid	1	21-Jun-2017	MGS (Cd-109,Co-57,Ce-139,Hg-203,Sn-113,Cs-137,Co-60,Y-88)
11-Jan-17	6-Jul-17	39938	Safety & Ecology Corp.	10512 Lexington Drive Ste 200 Knoxville TN 37932	C-14	375Bq	375	0.010	100	E-C14-VZ1964	Solid	1	24-Aug-2017	
19-Jun-17	31-Jul-17	40186	Smiths Detection	2202 Lakeside Blvd Edgewood Maryland 21040	Ni-63	3.33kBq	3330	0.090		E-NI3-QUE	Liquid	10	31-Jul-2017	
26-Jun-17	28-Jul-17	40201	US EPA	600 Joliet Road Suite A Willowbrook, IL, 60527	8400	129.5kBq	129500	3.500	3.5	E-MGS-PNT	Solid	1	8-Aug-2017	MGS (Cd-109,Co-57,Ce-139,Hg-203,Sn-113,Cs-137,Co-60,Y-88)

Exempt Quantity Order Log

Date Ordered	ESD	SO#	Company	Ship To address	Nuclide	Activity	Activity (Bq)	Activity (uCi)	Exempt Qty limit (uCi)	Exempt EZA model #	Geometry	Number of Items	Date Shipped	Comments
28-Jun-17	29-Jun-17	40199	Dan Zuckerman	13940 Cedar Road #189 Cleveland, Ohio 44118	C-14	2500Bq	2500	0.068	100	E-C14-QUE	Liquid	10	7-Aug-2017	
					H-3	8333Bq	8333	0.225	1000	E-H-3-QUE	Liquid	10	7-Aug-2017	
					C-14	2500Bq	2500	0.068	100	E-C14-QUE	Liquid	10	7-Aug-2017	
28-Jun-17	29-Jun-17	40200	Chris Paine	16 Jonathan Place Amherst, NY 14228 3928 Point Eden Way Hayward, CA 94545	H-3	8333Bq	8333	0.225	1000	E-H-3-QUE	Liquid	10	7-Aug-2017	
					C-14	1.67kBq	1670	0.045	100	E-C14-UNQ	Liquid	1	28-Jul-2017	
26-Jun-17	28-Jul-17	40203	Arcus Biosciences, Inc.	94545	H-3	1.67kBq	1670	0.045	1000	E-H-3-UNQ	Liquid	1	28-Jul-2017	
23-Mar-17	6-Jul-17	39808	Hi-Q	7386 Trade Street San Diego, CA 92121	Tc-99	6kBq	6000	0.162	10	E-TC9-VZ628	Solid	1	5-Jul-2017	
					C-14	1.6kBq	1670	0.045	100	E-C14-QUE	Liquid	20	22-Aug-2017	
29-Jun-17	22-Aug-17	40202	LabLogic	1040 Brandon Blvd. Brandon, FL 33511	H-3	4.17kBq	4170	0.113	1000	E-H-3-QUE	Liquid	20	22-Aug-2017	
16-Jun-17	3-Aug-17	40117	Cardinal Beltsville	7051 Muirkirk Meadows Drive, Suite K, Beltsville MD 20705	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	4-Aug-2017	
16-Jun-17	3-Aug-17	40118	NDP Plainview	130 COMMERCIAL STREET/SUITE 1 PLAINVIEW, NY 11803	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	5-Oct-2017	
16-Jun-17	3-Aug-17	40120	Cardinal Van Nuys	16310 Raymer St Van Nuys, CA 91406	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	4-Aug-2017	
16-Jun-17	3-Aug-17	40122	Cardinal Denver	10400 48th AVE STE. B DENVER, CO 80230	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	31-Jul-2017	
16-Jun-17	3-Aug-17	40125	Cardinal Glendale Heights	1950 Bentley Court Glendale Heights, IL 60139	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	6-Oct-2017	
16-Jun-17	3-Aug-17	40126	Cardinal Lexington	2201 Regency Rd Ste 203, Lexington, KY 40503	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	5-Sep-2017	
16-Jun-17	3-Aug-17	40127	Cardinal New Orleans	1405 Jefferson Hwy Ste. A Jefferson, LA 70121	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	6-Oct-2017	
16-Jun-17	3-Aug-17	40128	Cardinal Pittsburgh	70 33rd Street Suite A, Pittsburgh, PA 15201	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	5-Oct-2017	
16-Jun-17	3-Aug-17	40129	Cardinal Portland	11943 NE Sumner Street Portland, Oregon 97220	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	1-Sep-2017	
16-Jun-17	3-Aug-17	40130	Cardinal Richmond	1007 Canal Blvd Richmond, CA 94804	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	11-Oct-2017	
16-Jun-17	3-Aug-17	40131	Cardinal Sacramento	201 Lathrop Way, Suite D, Sacramento, Ca 95815	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	7-Sep-2017	
16-Jun-17	3-Aug-17	40133	Cardinal San Jose	1410 Koll Circle, San Jose, CA 95112	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	11-Oct-2017	
16-Jun-17	3-Aug-17	40135	Cardinal Seattle	421 South Michigan St. Seattle, WA. 98108	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	5-Oct-2017	
16-Jun-17	3-Aug-17	40136	Cardinal Tampa	9051 Florida Mining Blvd, Suite 110, Tampa, FL 33634	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	5-Oct-2017	
16-Jun-17	3-Aug-17	40137	Cardinal Tempe	1724 WEST THIRD STREET TEMPE, AZ 85281	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	11-Oct-2017	
16-Jun-17	3-Aug-17	40138	NDP Cherry Hill	2 Keystone Ave. Suite 200, Cherry Hill, NJ 08003	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	9-Oct-2017	
16-Jun-17	3-Aug-17	40139	NDP Rockaway	101 Roundhill Drive, Rockaway, NJ 07866	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	5-Oct-2017	
16-Jun-17	13-Oct-17	40140	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	3-Aug-17	40141	Cardinal Atlanta	4000 Dekalb Technology Pkwy Suite #250, Doraville GA 30047	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	1-Sep-2017	
16-Jun-17	3-Aug-17	40142	Cardinal Austin	2621 Ridgepoint Dr #200 Austin, TX 78754	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	10-Oct-2017	
16-Jun-17	3-Aug-17	40143	Cardinal Hartford	131 Hartland St, East Hartford, CT 06108	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	6-Oct-2017	
16-Jun-17	3-Aug-17	40144	Cardinal Las Vegas	5795 Arville Street Las Vegas, NV, 89118 USA	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	5-Oct-2017	
16-Jun-17	3-Aug-17	40145	Cardinal Omaha	5840 F Street, Omaha, NE 68117	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	6-Oct-2017	
16-Jun-17	3-Aug-17	40146	Cardinal San Diego	7515 Metropolitan Dr. #410, San Diego, CA 92108	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	5-Oct-2017	

**Exempt Quantity Order Log**

Date Ordered	ESD	SO#	Company	Ship To address	Nuclide	Activity	Activity (Bq)	Activity (uCi)	Exempt Qty limit (uCi)	Exempt EZA model #	Geometry	Number of Items	Date Shipped	Comments
16-Jun-17	13-Oct-17	40147	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	13-Oct-17	40148	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	13-Oct-17	40149	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	13-Oct-17	40150	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	13-Oct-17	40151	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	13-Oct-17	40152	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	3-Aug-17	40153	Cardinal Nashville	535 Mainstream Drive, Nashville TN 37228	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	6-Oct-2017	
16-Jun-17	13-Oct-17	40154	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	13-Oct-17	40155	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	13-Oct-17	40156	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	13-Oct-17	40158	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	13-Oct-17	40159	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	13-Oct-17	40160	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	13-Oct-17	40161	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
16-Jun-17	13-Oct-17	40162	AAA (Advanced Accelerator Applications)	57 East Willow Street Millburn, NJ 07041	Cs-137	3kBq	3000	0.081	10	E-CS7-VZ1366	Solid	1	13-Oct-2017	
17-Jul-17	30-Aug-17	40255	LabLogic	1040 Brandon Blvd. Brandon, FL 33511	C-14	1.67kBq	1670	0.045	100	E-C14-UNQ	Liquid	5	30-Aug-2017	
					H-3	4.17kBq	4170	0.113	1000	E-H-3-UNQ	Liquid	5	30-Aug-2017	
1-Sep-17	2-Oct-17	40482	LabLogic	1040 Brandon Blvd. Brandon, FL 33511	H-3	4.17kBq	4170	0.113	1000	E-H-3-QUE	Liquid	10	2-Oct-2017	
6-Sep-17	10-Oct-17	40489	Purdue University	550 Stadium Mall Dr. Hampton Civil Engineerin Bldg B201A, West Lafayette, IN 47907	Cs-137	37kBq	37000	1.000	10	E-CS7-SOL	Solid	1	10-Oct-2017	
26-Sep-17	30-Oct-07	40565	LabLogic	1040 E Brandon Blvd. Brandon, FL 33511	H-3	4.17kBq	4170	0.113	1000	E-H-3-QUE	Liquid	20	30-Oct-2017	
27-Sep-17	30-Oct-17	40575	LabLogic	1040 E Brandon Blvd. Brandon, FL 33511	C-14	1.67kBq	1670	0.045	100	E-C14-UNQ	Liquid	3	27-Oct-2017	
					H-3	4.17kBq	4170	0.113	1000	E-H-3-UNQ	Liquid	3	27-Oct-2017	
28-Sep-17	1-Nov-17	40586	Michigan State University	1355 Bogue Street B330 Life Science Building East Lansing, MI 48823	C-14	1.67kBq	1670	0.045	100	E-C14-QUE	Liquid	1	14-Nov-2017	
					H-3	1.67kBq	1670	0.045	1000	E-H-3-QUE	Liquid	1	14-Nov-2017	

