



**TELEDYNE**  
**BROWN ENGINEERING, INC.**  
 A Teledyne Technologies Company  
 2508 Quality Lane  
 Knoxville, TN 37931-3133  
 865-690-6819

**REVISED**

X Zoe Cox X  
 Byron Station  
 Exelon Nuclear  
 4450 N. German Church Road  
 Byron, IL 61010

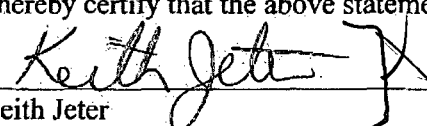
**Report of Analysis/Certificate of Conformance**

LIMS #: L33385 11/26/2007  
 Project ID# EX001-3ESPBYRON-06  
 Received: 10/16/2007  
 Delivery Date 11/06/2007  
 P.O.#: 01000298 REL.#00011  
 Release #  
 SDG#:

This is to certify that Teledyne Brown Engineering - Environmental Services located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples, as received by the laboratory, as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

  
 Keith Jeter  
 Operations Manager

*Cross Reference Table*

Client ID	Laboratory ID	Station ID (if applicable)
BY-AR-1	L33385-1	BY-AR-1
BY-AR-2	L33385-2	BY-AR-2
BY-AR-3	L33385-3	BY-AR-3
BY-AR-7	L33385-4	BY-AR-7
BY-AR-8	L33385-5	BY-AR-8
BY-AR-9	L33385-6	BY-AR-9
BY-AR-10	L33385-7	BY-AR-10
BY-TW-14	L33385-8	BY-TW-14

N-16



**REVISED**

*Cross Reference Table*

Client ID	Laboratory ID	Station ID (if applicable)
BY-TW-15	L33385-9	BY-TW-15
BY-TW-13	L33385-10	BY-TW-13
BY-CAR-1	L33385-11	BY-CAR-1
BY-CAR-2	L33385-12	BY-CAR-2
BY-CAR-3	L33385-13	BY-CAR-3
BY-MW-1	L33385-14	BY-MW-1
BY-MW-3	L33385-15	BY-MW-3

*Method Reference Numbers*

Matrix	Analysis	Method Reference
WG	H-3 (DIST)	EPA 906.0

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## Case Narrative

11/26/2007 13:50

**L33385**

EX001-3ESPBYPON-06

Exelon

This report has been revised to include the H-3 re-analysis results for sample BY-AR-3 (L33385-3).

# Report of Analysis

11/26/07 13:25



**L33385**

Byron Station.

EX001-3ESPBYRON-06

**REVISED**

Sample ID: <b>BY-AR-1</b>	Collect Start: 10/08/2007 10:15	Matrix: Ground Water (WG)
Station: BY-AR-1	Collect Stop: 10/08/2007 10:15	Volume:
Description:	Receive Date: 10/16/2007	% Moisture:
LIMS Number: L33385-1		

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3 (DIST)	2011	-1.60E+01	1.09E+02	1.80E+02	pCi/L		10	ml		10/24/07	75	M	U
Comment: 1 Collected by Byron personnel.													

Sample ID: <b>BY-AR-2</b>	Collect Start: 10/08/2007 13:40	Matrix: Ground Water (WG)
Station: BY-AR-2	Collect Stop: 10/08/2007 13:40	Volume:
Description:	Receive Date: 10/16/2007	% Moisture:
LIMS Number: L33385-2		

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3 (DIST)	2011	3.83E+02	1.24E+02	1.71E+02	pCi/L		10	ml		10/24/07	75	M	+ High

Sample ID: <b>BY-AR-3</b>	Collect Start: 10/08/2007 14:25	Matrix: Ground Water (WG)
Station: BY-AR-3	Collect Stop: 10/08/2007 14:25	Volume:
Description:	Receive Date: 10/16/2007	% Moisture:
LIMS Number: L33385-3		

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3 (DIST)	2011	9.65E+02	1.66E+02	1.99E+02	pCi/L		10	ml		10/24/07	57.64	M	+ High
H-3 (DIST)	2011	1.11E+03	1.97E+02	2.43E+02	pCi/L	R1	10	ml		11/20/07	52.45	M	+ High

Sample ID: <b>BY-AR-7</b>	Collect Start: 10/08/2007 08:35	Matrix: Ground Water (WG)
Station: BY-AR-7	Collect Stop: 10/08/2007 08:35	Volume:
Description:	Receive Date: 10/16/2007	% Moisture:
LIMS Number: L33385-4		

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3 (DIST)	2011	1.59E+02	1.17E+02	1.79E+02	pCi/L		10	ml		10/24/07	75	M	U
Comment: 1 Collected by Byron personnel.													

**Flag Values**

- U = Compound/Analyte not detected or less than 3 sigma
- + = Activity concentration exceeds MDC and 3 sigma; peak identified (gamma only)
- U\* = Compound/Analyte not detected, Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
- High = Activity concentration exceeds customer reporting value
- Spec = MDC exceeds customer technical specification
- L = Low recovery
- H = High recovery

- No = Peak not identified in gamma spectrum
- Yes = Peak identified in gamma spectrum
- \*\*\*\* Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Bolded text indicates reportable value.

# Report of Analysis

11/26/07 13:25



## L33385

Byron Station

EX001-3ESPBYRON-06

Zoe Cox

Sample ID: <b>BY-AR-8</b>	Collect Start: 10/08/2007 08:55	Matrix: Ground Water (WG)
Station: BY-AR-8	Collect Stop: 10/08/2007 08:55	Volume:
Description:	Receive Date: 10/16/2007	% Moisture:
LIMS Number: L33385-5		

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3 (DIST)	2011	3.21E+01	1.11E+02	1.80E+02	pCi/L		10	ml		10/24/07	75	M	U

Comment: 1 Collected by Byron personnel.

Sample ID: <b>BY-AR-9</b>	Collect Start: 10/08/2007 09:50	Matrix: Ground Water (WG)
Station: BY-AR-9	Collect Stop: 10/08/2007 09:50	Volume:
Description:	Receive Date: 10/16/2007	% Moisture:
LIMS Number: L33385-6		

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3 (DIST)	2011	1.49E+02	1.16E+02	1.78E+02	pCi/L		10	ml		10/24/07	75	M	U

Comment: 1 Collected by Byron personnel.

Sample ID: <b>BY-AR-10</b>	Collect Start: 10/08/2007 10:40	Matrix: Ground Water (WG)
Station: BY-AR-10	Collect Stop: 10/08/2007 10:40	Volume:
Description:	Receive Date: 10/16/2007	% Moisture:
LIMS Number: L33385-7		

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3 (DIST)	2011	1.78E+02	1.17E+02	1.77E+02	pCi/L		10	ml		10/24/07	75	M	+ .

Comment: 1 Collected by Byron personnel.

Sample ID: <b>BY-TW-14</b>	Collect Start: 10/08/2007 12:15	Matrix: Ground Water (WG)
Station: BY-TW-14	Collect Stop: 10/08/2007 12:15	Volume:
Description:	Receive Date: 10/16/2007	% Moisture:
LIMS Number: L33385-8		

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3 (DIST)	2011	9.86E+01	1.12E+02	1.76E+02	pCi/L		10	ml		10/24/07	75	M	U

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- + = Activity concentration exceeds MDC and 3 sigma; peak identified (gamma only)
- U\* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
- High = Activity concentration exceeds customer reporting value.
- Spec = MDC exceeds customer technical specification
- L = Low recovery
- H = High recovery

- No = Peak not identified in gamma spectrum
- Yes = Peak identified in gamma spectrum
- \*\*\*\* Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

**Bolded text indicates reportable value.**

# Report of Analysis

11/26/07 13:25



**L33385**

Byron Station

EX001-3ESPBYPYRON-06

**REVISED**

Zoe Cox

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
Sample ID: <b>BY-TW-15</b> Station: <b>BY-TW-15</b> Description: LIMS Number: <b>L33385-9</b> Collect Start: 10/08/2007 11:45 Collect Stop: 10/08/2007 11:45 Receive Date: 10/16/2007 Matrix: Ground Water (WG) Volume: % Moisture:													
H-3 (DIST)	2011	6.72E+01	1.11E+02	1.76E+02	pCi/L		10	ml		10/24/07	75	M U	
Sample ID: <b>BY-TW-13</b> Station: <b>BY-TW-13</b> Description: LIMS Number: <b>L33385-10</b> Collect Start: 10/08/2007 10:30 Collect Stop: 10/08/2007 10:30 Receive Date: 10/16/2007 Matrix: Ground Water (WG) Volume: % Moisture:													
H-3 (DIST)	2011	7.16E+01	1.08E+02	1.71E+02	pCi/L		10	ml		10/25/07	75	M U	
Sample ID: <b>BY-CAR-1</b> Station: <b>BY-CAR-1</b> Description: LIMS Number: <b>L33385-11</b> Collect Start: 10/08/2007 11:05 Collect Stop: 10/08/2007 11:05 Receive Date: 10/16/2007 Matrix: Ground Water (WG) Volume: % Moisture:													
H-3 (DIST)	2011	1.04E+02	1.11E+02	1.74E+02	pCi/L		10	ml		10/25/07	75	M U	
Sample ID: <b>BY-CAR-2</b> Station: <b>BY-CAR-2</b> Description: LIMS Number: <b>L33385-12</b> Collect Start: 10/08/2007 12:50 Collect Stop: 10/08/2007 12:50 Receive Date: 10/16/2007 Matrix: Ground Water (WG) Volume: % Moisture:													
H-3 (DIST)	2011	3.78E+01	1.08E+02	1.75E+02	pCi/L		10	ml		10/25/07	75	M U	

**Flag Values**

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- High = Activity concentration exceeds customer reporting value
- Spec = MDC exceeds customer technical specification
- L = Low recovery
- H = High recovery

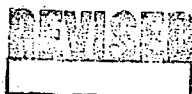
- No = Peak not identified in gamma spectrum
- Yes = Peak identified in gamma spectrum
- \*\*\*\* Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

**Bolded text indicates reportable value.**

# Report of Analysis

11/26/07 13:25



**L33385**

Byron Station

EX001-3ESPBYRON-06

Zoe Cox

Sample ID: <b>BY-CAR-3</b>	Collect Start: 10/08/2007 09:20	Matrix: Ground Water (WG)
Station: BY-CAR-3	Collect Stop: 10/08/2007 09:20	Volume:
Description:	Receive Date: 10/16/2007	% Moisture:
LIMS Number: L33385-13		

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3 (DIST)	2011	1.22E+02	1.15E+02	1.78E+02	pCi/L		10	ml		10/25/07	75	M	U
Comment: 1 Collected by Byron personnel.													

Sample ID: <b>BY-MW-1</b>	Collect Start: 10/08/2007 16:20	Matrix: Ground Water (WG)
Station: BY-MW-1	Collect Stop: 10/08/2007 16:20	Volume:
Description:	Receive Date: 10/16/2007	% Moisture:
LIMS Number: L33385-14		

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3 (DIST)	2011	-4.48E+00	1.07E+02	1.76E+02	pCi/L		10	ml		10/25/07	75	M	U

Sample ID: <b>BY-MW-3</b>	Collect Start: 10/08/2007 15:15	Matrix: Ground Water (WG)
Station: BY-MW-3	Collect Stop: 10/08/2007 15:15	Volume:
Description:	Receive Date: 10/16/2007	% Moisture:
LIMS Number: L33385-15		

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3 (DIST)	2011	6.99E+01	1.11E+02	1.77E+02	pCi/L		10	ml		10/25/07	75	M	U

**Flag Values**

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- U\* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
- High = Activity concentration exceeds customer reporting value
- Spec = MDC exceeds customer technical specification
- L = Low recovery
- H = High recovery

- No = Peak not identified in gamma spectrum
- Yes = Peak identified in gamma spectrum
- \*\*\*\* Results are reported on an as received basis unless otherwise noted.

MDC - Minimum Detectable Concentration

**Bolded text indicates reportable value.**

Raw Data Sheet (rawdata)  
Nov 26 2007; 01:26 pm

Work Order: L33385

Customer: Exelon

Page: 1

Nuclide: H-3 (DIST)

Project: EX001-3ESPBYRON-06

Sample ID	Run #	Analysis	Reference	Volume/ Aliquot	Scavenge Date/time	Milking Date/time	Mount Weight	Count Recovery	Counter ID	Total counts	Sample dt	Bkg counts	Bkg dt	Eff.	Decay & Ingrowth Factor	Analyst
L33385-1		H-3 DIST		10 ml			0	24-oct-07 12:46	LS7	155	75 (M)	2.14	75 (M)	.197		DW
BY-AR-1																
Activity: -1.6E+01 Error: 1.09E+02 MDC: 1.8E+02 * pCi/L																
L33385-2		H-3 DIST		10 ml			0	24-oct-07 14:04	LS7	293	75 (M)	2.14	75 (M)	.207		DW
BY-AR-2																
Activity: 3.83E+02 * Error: 1.24E+02 MDC: 1.71E+02 pCi/L																
L33385-3		H-3 DIST		10 ml			0	24-oct-07 15:22	LS7	375	57.64 (M)	2.14	75 (M)	.204		DW
BY-AR-3																
Activity: 9.65E+02 * Error: 1.66E+02 MDC: 1.99E+02 pCi/L																
L33385-3	R1	H-3 DIST		10 ml			0	20-nov-07 20:55	LS7	372	52.45 (M)	2.47	75 (M)	.189		DW
BY-AR-3																
Activity: 1.11E+03 * Error: 1.97E+02 MDC: 2.43E+02 pCi/L																
L33385-4		H-3 DIST		10 ml			0	24-oct-07 16:23	LS7	213	75 (M)	2.14	75 (M)	.198		DW
BY-AR-7																
Activity: 1.59E+02 Error: 1.17E+02 MDC: 1.79E+02 * pCi/L																
L33385-5		H-3 DIST		10 ml			0	24-oct-07 17:41	LS7	171	75 (M)	2.14	75 (M)	.197		DW
BY-AR-8																
Activity: 3.21E+01 Error: 1.11E+02 MDC: 1.8E+02 * pCi/L																
L33385-6		H-3 DIST		10 ml			0	24-oct-07 18:59	LS7	210	75 (M)	2.14	75 (M)	.2		DW
BY-AR-9																
Activity: 1.49E+02 Error: 1.16E+02 MDC: 1.78E+02 * pCi/L																
L33385-7		H-3 DIST		10 ml			0	24-oct-07 20:18	LS7	220	75 (M)	2.14	75 (M)	.201		DW
BY-AR-10																
Activity: 1.78E+02 * Error: 1.17E+02 MDC: 1.77E+02 pCi/L																
L33385-8		H-3 DIST		10 ml			0	24-oct-07 21:36	LS7	194	75 (M)	2.14	75 (M)	.202		DW
BY-TW-14																
Activity: 9.86E+01 Error: 1.12E+02 MDC: 1.76E+02 * pCi/L																
L33385-9		H-3 DIST		10 ml			0	24-oct-07 22:55	LS7	183	75 (M)	2.14	75 (M)	.202		DW
BY-TW-15																
Activity: 6.72E+01 Error: 1.11E+02 MDC: 1.76E+02 * pCi/L																
L33385-10		H-3 DIST		10 ml			0	25-oct-07 00:13	LS7	185	75 (M)	2.14	75 (M)	.208		DW
BY-TW-13																
Activity: 7.16E+01 Error: 1.08E+02 MDC: 1.71E+02 * pCi/L																
L33385-11		H-3 DIST		10 ml			0	25-oct-07 01:31	LS7	196	75 (M)	2.14	75 (M)	.204		DW
BY-CAR-1																
Activity: 1.04E+02 Error: 1.11E+02 MDC: 1.74E+02 * pCi/L																



Raw Data Sheet (rawdata)  
 Nov 26 2007, 01:26 pm

Work Order: L33385

Customer: Exelon

Page: 2

Nuclide: H-3 (DIST)

Project: EX001-38SPBYRON-06

Sample ID Client ID	Run #	Analysis	Reference Date/time	Volume/ Aliquot	Scavenge Date/time	Milking Date/time	Mount Weight	Recovery	Count Date/time	Counter ID	Total counts	Sample dt	Bkg counts	Bkg dt	Eff.	Decay & Ingrowth Factor	Analyst
L33385-12		H-3 DIST		10 ml			0		25-oct-07 02:50	LS7	173	75 (M)	2.14	75 (M)	.203		DW
BY-CAR-2																	
Activity: 3.78E+01 Error: 1.08E+02 MDC: 1.75E+02 * pCi/L																	
L33385-13		H-3 DIST		10 ml			0		25-oct-07 04:09	LS7	201	75 (M)	2.14	75 (M)	.2		DW
BY-CAR-3																	
Activity: 1.22E+02 Error: 1.15E+02 MDC: 1.78E+02 * pCi/L																	
L33385-14		H-3 DIST		10 ml			0		25-oct-07 05:27	LS7	159	75 (M)	2.14	75 (M)	.202		DW
BY-MW-1																	
Activity: -4.48E+00 Error: 1.07E+02 MDC: 1.76E+02 * pCi/L																	
L33385-15		H-3 DIST		10 ml			0		25-oct-07 06:46	LS7	184	75 (M)	2.14	75 (M)	.2		DW
BY-MW-3																	
Activity: 6.99E+01 Error: 1.11E+02 MDC: 1.77E+02 * pCi/L																	